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Investigation of Escape and Negative Student Behaviors Related to Florida State High Stakes Test Preparation in Miami-Dade County Public High Schools, having been approved in respect to style and intellectual content, is referred to you for judgment

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FLORIDA INTERNATIONAL UNIVERSITY

Miami, Florida

INVESTIGATION OF ESCAPE AND NEGATIVE STUDENT BEHAVIORS
RELATED TO FLORIDA STATE HIGH STAKES TEST PREPARATION IN
MIAMI-DADE COUNTY PUBLIC HIGH SCHOOLS

A dissertation submitted in partial fulfillment of

the requirements for the degree of

DOCTOR OF EDUCATION

in

CURRICULUM AND INSTRUCTION

by

Ilia Molina

2014

To: Dean Delia C. Garcia
College of Education

This dissertation, written by Ilia Molina, and entitled Investigation of Escape and Negative Student Behaviors Related to Florida State High Stakes Test Preparation in Miami-Dade County Public High Schools, having been approved in respect to style and intellectual content, is referred to you for judgment.

We have read this dissertation and recommend that it be approved.

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The dissertation of Ilia Molina is approved.

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DEDICATION

I wish to thank the Lord for his many blessings and for His assistance on this long journey. I would also like to thank and dedicate this work to my husband and mother for their continued support over the years. I am truly lucky to have you in my life. You are my rock. I love you. I would also like to thank my sisters Michelle and Karmen for helping me in my endeavor any way they possibly could. Finally, I would like to thank my Havana for her cuddling, kisses, and encouragement during the many hours typing on my computer.

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ABSTRACT OF THE DISSERTATION
INVESTIGATION OF ESCAPE AND NEGATIVE STUDENT BEHAVIORS
RELATED TO FLORIDA STATE HIGH STAKES TEST PREPARATION IN
MIAMI-DADE COUNTY PUBLIC HIGH SCHOOLS

by

Ilia Molina

Florida International University, 2014

Miami, Florida

Professor Leonard B. Bliss, Major Professor

The purpose of this study was to determine whether there was a relationship between pressure to perform on state mandated, high-stakes tests and the rate of student escape behavior defined as the number of school suspensions and absences. The state assigned grade of a school was used as a surrogate measure of pressure with the assumption that pressure increased as the school grade decreased.

Student attendance and suspension data were gathered from all 33 of the regular public high schools in Miami-Dade County Public Schools. The research questions were:

1. Is the number of suspensions highest in the third quarter, when most FCAT preparation takes place for each of the 3 school years 2007-08 through 2009-10?
2. How accurately does the high school's grade predict the number of suspensions and number of absences during each of the 4 school years 2005-06 through 2008-09?

The research questions were answered using repeated measures analysis of variance for research question #1 and non-linear multiple regression for research question #2.

No significant difference could be found between the numbers of suspensions in each of the grading periods nor was there a relationship between the number of suspensions and school grade. A statistically significant relationship was found between student attendance and school grade. When plotted, this relationship was found to be quadratic in nature and formed a loose inverted U for each of the four years during which data were collected. This indicated that students in very high and very low performing schools had low levels of absences while those in the midlevel of the distribution of school performance (C schools) had the greatest rates of absence.

Identifying a relationship between the pressures associated with high stakes testing and student escape behavior suggests that it might be useful for building administrators to reevaluate test preparation activities and procedures being used in their building and to include anxiety reducing strategies. As a relationship was found, it sets the foundation for future studies to identify whether testing related activities are impacting some students emotionally and are causing unintended consequences of testing mandates.

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CHAPTER I

INTRODUCTION

The purpose of this study was to determine whether there was a predictive and or correlational relationship between pressure to achieve high levels of performance on state mandated, high-stakes tests that includes daily accepted test preparation practices, and the number of high school suspensions and absences. The suspensions and absences were used as quantifiable measures of escape behaviors. The school grade was used as a proxy for the amount of pressure as a result of the state and school district differentiated accountability protocols. Because a relationship was found to exist then future research should be undertaken testing whether causal relationships exist between negative student behavior and testing mandates. This chapter begins with the background to the study using a historical approach to standardized testing, followed by the problem statement, purpose of the study, research questions that will be explored, significance of the study, and the theoretical framework that will be used as the basis for this study. The delimitations of the study, definitions of specific terms used, and the overall organization of the study are included at the end of this chapter as well.

Background of the Study

Across the country the No Child Left Behind Act has mandated that states create grade level and subject area standards, high-stakes statewide tests, supplemental tutoring programs, and procedures for school probation (U.S. Department of Education, 2004). In order to comply and create classrooms that can be structured and monitored, many school districts have implemented scripted curricula and zero tolerance behavior measures (Armstrong, 2006). Since its inception in 2001, these mandates have penetrated what

society has accepted as norms in education and have shaped much of what goes on during the school year (Driesler, 2001).

Role of Testing

As the No Child Left Behind mandate lingers and President Obama's Race to the Top educational initiative takes root, it is apparent that any curriculum or research specialist must be aware of the pivotal and controversial role of testing in American public schools (Marchant, Paulson, & Shunk, 2006). In 2001, the reauthorization of the Elementary and Secondary Education Act (ESEA) included the No Child Left Behind Act, which primarily required states to set standards for student performance and teacher quality (U. S. Department of Education, 2004). Schools are thus mandated at the state and federal levels to develop a system that would provide proof that students are being taught grade appropriate content and that students, teachers, schools, and school districts are being held accountable for the academic success or failure of the students enrolled in their schools. The system employed by the majority of states centers around the use of a major state developed and adopted standardized test that is designed to evaluate students' achievement of the required content knowledge and skills as it relates to mastery of the state standards. The intention of these mandates and state testing programs was to identify high and low functioning school districts, schools, teachers, and students.

Ostensibly, through the use of data collection and predetermined standards and consequences, educators would be forced to provide high-quality education and students would personally be motivated to make academics a high priority (Nichols & Berliner, 2008). Under current educational mandates, for states to comply, they must meet four main components: (a) content standards that specify the desired content knowledge and

skills that must serve as the foundation for the curriculum; (b) tests that measure progress toward achieving the specific content standards for each subject and grade level; (c) performance targets or levels that identify criteria used to determine whether schools, subgroups of students, and individual students have reached an adequate point of achievement; and (d) incentives in the form of rewards or consequences that are meant to positively reinforce the achievement of instructional goals. Testing, test scores, and their influence are becoming inseparable from the criteria for student promotion, student graduation, school funding, and teacher incentive pay (Dee & Jacob, 2010; Kubiszyn & Borich, 2000). When such accountability is associated with serious consequences for stakeholders, the federal or state mandated tests are termed “high-stakes” (American Educational Research Association, 2000). Federal law required that as of the beginning of the 2005-2006 school year, all states must annually administer reading and math tests to all students in third through 12th grade. This law still affects a large portion of the 79 million students in American schools (U.S. Census Bureau, 2013).

National Effects

Because of the rewards and consequences associated with the state standardized tests, public school districts, individual schools, and classroom teachers have designed their schedules and use most of their instructional time to teach students the material that they are confident will be part of the state’s grade-level, standardized tests. The decision to neglect or omit the arts and or social sciences in order to address content that is tested is most often made at the school or classroom level. Results from a national survey of teachers, that took into account the responses of 4,200 teachers, confirms this postulation with 76% of the teachers who responded to the survey acknowledged that they have

increased the amount of instruction focused on tested content areas, while 52% acknowledged they had decreased the amount of instructional time devoted to subjects or content within a subject that were known not to be assessed by the state's standardized tests (Pedulla et al., 2003). In that same survey 90% of teachers reported feeling pressure from their school district's superintendent to raise their school's test scores and 79% of the teachers felt that they were being pressured by their school's administrator to improve the performance of students in their particular classroom. Focusing the majority of class time immediately prior to state testing dates on test taking skills, test preparation, and test simulation seems to be the most common strategy for teachers who are feeling the pressure to increase their students' test scores. In North Carolina, 80% of the 470 elementary teachers surveyed, admitted that more than 20% of their total instructional time was used for test preparation and test simulation (Jones et al., 1999). In a 2007 survey, teachers in Florida reported dedicating between 38% to 43% of their mathematics, writing, and reading instructional time modeling and practicing test-taking strategies specifically selected to increase the students' achievement of the FCAT (Jones & Egley 2007). Dee and Jacob (2010) found that teachers in states that had important consequences at schools reported using more than 30 instructional hours each year for test preparation and test simulation. A survey of Texas reading teachers (Hoffman, Assaf, & Paris, 2001) found similar results when participating teachers on average admitted to dedicating 8 to 10 hours per week of their instructional time preparing their students for the Texas Assessment of Academic Skills (TAAS). Even though this increase in test preparation may yield an increase in test scores it may also yield an increase in negative behaviors (Armstrong, 2006).

Abrams (2004) found that the impact of the state mandated test in Florida, the Florida Comprehensive Assessment Test (FCAT), was much higher than in other states. In Florida the overwhelming majority of teachers (90% compared to 75% nationwide) reported that as a result of the state testing program, they were forced to use instructional practices that they felt were not sound and which went against their personal educational beliefs on how to best assess students. Florida teachers in the Abrams study, more so than other teachers throughout the nation, disclosed that they modeled tests that they designed over the course of the year to assess their students' understanding of the course content after the state's high-stakes tests, using identical questioning techniques. Students who do not do well on these types of assessments are not offered other opportunities through a variety of assessments to demonstrate knowledge in the content area. Florida teachers also were significantly more likely than their counterparts in other high-stakes testing settings to strongly agree that the pressure to perform well on the state's mandatory, high-stakes, end of year exams was so great that test preparation, test simulation, and content assessed in the tests were embedded in the majority of the lessons covered throughout the year. The use of commercially available or state-developed practice test materials and released items, previously used official test questions, is a common practice among teachers across the nation designed to prepare students for state tests by familiarizing them with the test's format and content. Abrams found that teachers in Florida were more likely to use these prepared resources with their students than teachers in other states. Florida instructors when asked to predict the amount of time spent on test preparation and test simulation estimated that at least 30 hours per year were spent towards preparing students to take the state mandated test at the elementary level

and even more hours were dedicated to preparation at the high school level (Abrams, 2005).

Effects in Florida

In Florida schools, the school grade during the time of the original Sunshine State Standards and FCAT was determined by the accumulation of points in eight categories from four tested areas. The state has since adopted the Next Generation Sunshine State Standards and FCAT 2.0 which uses a different grading criterion. During the time that data was collected, the original FCAT assessment was used and the tested content areas were reading, mathematics, science, and writing. In the reading, mathematics, and science assessments students were scored from a level 1 to a level 5. Levels 3, 4, and 5 were considered at or above grade level. Schools received one point per each percent of students tested at their school site that earned an FCAT achievement level of 3, 4, or 5 in the reading, mathematics, or science assessments. In writing, schools received one point per each percent of students tested at their school site that received a score of 3.5 to 6.0 on the FCAT writing assessment. Schools also accrued one point per each percent of students that made a year's worth of learning gains when compared to the previous year's FCAT assessment scores with the current FCAT assessment scores. The sum of these points could then be analyzed within Florida's school grading scale to determine the school grade. Table 1 shows the points needed for each of the school grading criteria (Florida Department of Education Evaluation and Reporting Office, Division of Accountability, Research, and Measurement, 2007).

Table 1
2007 School Grading Scale

Grade	Total points
A	525 and above
B	495-524
C	435-494
D	395-434
F	Less than 395

In Florida, the school grade and adequate yearly progress (AYP) status of a particular school highlights the amount of accountability that will be placed by the state's department of education and the school district, in terms of instructional reviews, data reviews, and state mandatory deliverables to name a few. Schools with a high letter grade or who have repeatedly met AYP have a mandatory yearly school instructional review visit but are allowed to choose many aspects of the school's curriculum and are allowed to offer programs outside the norm of the district. C graded schools are primarily visited once each school year, but are required by the Florida Department of Education to participate in more aspects of the school improvement plan template given by the FLDOE and are thus required to provide data in the form of a bi-yearly in house assessment (Florida Department of Education Bureau of School Improvement, 2012). Schools who have received low school grades (i.e., low C, D, and F) are required to include the requirements stated above for C schools, but must also receive curriculum and pacing from district personal, must provide quarterly data to the district superintendent, must also be visited often and have a minimum of three official school instructional reviews. These schools must use the text books and resources that have been approved by the school district. The school schedule must also reflect intervention time for all students who scored a level 1 or 2 on the reading or mathematics FCAT. They are also

required to offer Saturday school from January to April and must also open for half days of instruction during the week of spring break. They are required by the state to take part in more practice tests and to submit the data of these assessments (Florida Department of Education Bureau of School Improvement, 2008). The schools become inundated with test preparation, test simulation, test workshops, test meetings, and test information.

With all this attention on testing and performance at these school sites, it would seem possible that the pressure and anxiety on the individual student to increase their personal performance and the overall school performance would be heightened especially in the third grading period and that this anxiety may show a relationship to escape behaviors.

National Acceptance of Standardized Testing

Overall there is wide societal acceptance of standardized testing. Driesler (2001) surveyed 1,023 parents of children who were currently enrolled in a K-12 setting and found that 83% of the parents who participated believed that standardized tests, in addition to teacher made tests, made available vital information about their children's educational ability, progress, and learning gains. Of these same parents, 9 out of 10 requested data comparing their child to the average child's achievement at that grade level and comparing their child's school to other schools within the area. Two thirds of the parents surveyed believed that it was important for parents to receive documentation of test results for their children at the end of each school year. While half of those parents indicated that testing once a year was sufficient, half of the parents suggested that half-yearly tests should be implemented. In 2010, parents were still found to be highly in favor of performance-based sanctions and awards in order to monitor school and teacher quality (Dee & Jacob, 2010). Parental acceptance may stem from an increased business

approach to education and other institutions or programs operated by the state or federal government (Nichols & Berliner, 2008). The rise of the accountability movement in evaluating schools is an example of the emergence of the business approach in the school system.

The accountability movement in schools was founded on the belief that productivity could be improved without incurring large levels of increased spending merely by holding schools and educators responsible for their students' learning. The easiest and most cost effective way to measure this learning would be through the practice of standardized testing. Students who did not show adequate progress would be discovered and made to achieve at higher levels or they would be penalized. Their teachers would be punished since they were to be considered incompetent. The American public was convinced that these models of accountability commonly used in business could be applied to the inefficient school systems plaguing our future as a country. If schools failed to comply with these initiatives then they could be handed over to private entrepreneurs who could further push this business approach. For many Americans, this theoretical initiative and plan to better our schools throughout the nation seemed sensible and worth the growing pains of implementation and the funding needed to plan and structure the programs.

Problem Statement

State testing programs have influenced a variety of different areas within public education. Many states have increased standards and graduation requirements based on passing state exams. Graduation rates have dropped in states that enforce testing requirements for students to receive a high school diploma (Pedulla et al., 2003). Testing

narrows the school and district-wide curriculum. Schools are choosing to teach students only the content that they know will be included on the state's standardized tests. Entire fields of study such as the arts and social studies are taking a back seat to mathematics, reading, and science classes. Teachers who teach the arts and social studies are pressured to include tested benchmarks in their lessons and use their class time to further aid in test preparation. Because most states do not include performance type tasks in their testing programs, most students are exposed to an overwhelming number of paper and pencil choice style type tests that mirror what they are expected to master at the end of the school year or course. The length of time required in completing the practice tests and official state tests may be imposing negative non-developmentally appropriate constraints especially on young students, students who are trying to acquire the English language, and students who have one or more disabilities (Smith & Rottenberg, 1991). Smith and Rottenberg described these testing practices they observed as "cruel and unusual punishment" due to the extended length of assessments, the small font, and the amount of time students are required to be in testing mode (p.10). Repetition of the use of test preparation tasks may result in student boredom and burnout (Rhone, 2006). McCaleb-Kahan and Wenner (2009) found that burnout and test anxiety was higher in female students, minority students, and low-income students, regardless of the student's grade level.

Teacher morale has dropped as a result of test mandates, the push for accountability, and the shift of classroom control as a result of these mandates. More than half of the teachers who leave the profession leave because of classroom control issues such as their limited authority in the classroom, their inability to choose curricular

resources, circumstances that prohibit them from giving quality instruction, heavy workloads associated with testing interventions, and overall frustration with the teaching profession (Shakrani, 2008). School funding is closely tied to students' achievement on standardized tests. Additional dollars are being spent on charter and private schools. Parents are given the choice to move their students and the money allocated for their educations to schools that meet or are exempt from the state standards (U.S. Department of Education's National Center on Education Statistics, 2002).

These responses to state mandated high-stakes testing mentioned above have only referred to instructional practices and teachers' reactions to testing programs. In addition, students struggle with all types of stressors and emotions as a result of these mandatory tests. Since the implementation of mandatory testing, both students who have excelled academically and those who struggle in schools have increased negative attitudes towards the tests, content covered by the tests, test preparation, and schooling in general (Lattimore, 2001). Negative attitudes towards testing and an increase in pressure to perform immediately prior to the administration of the assessments was also found in Harrimen's (2005) study. Lattimore found in his study of 10th grade students that there was a relationship between students' self-esteem and self-concept and the amount of emphasis on student's scores. He does not suggest causality but did observe that students' attitudes and behaviors were different in schools that placed a greater emphasis on testing than in schools with less emphasis on testing. When surveyed, students mentioned that their motivation and self-efficacy was hindered by their testing stress level during time of increased emphasis on testing (Harrimen, 2005). However, an additional inadvertent outcome of the push for testing nationwide has been an increased number of

students from the elementary level to the high school level with reported anxiety and more specifically a spike in testing anxiety during both test preparation activities and during the actual implementation of the state tests (Casbarro, 2005). The number of students who experience test anxiety related symptoms has been difficult to estimate especially with students feeling inadequate or embarrassed to admit such emotions or behaviors. Because of the negative connotations associated with test anxiety, test anxiety may even more widespread than what has been documented. Students also believed that schools and teachers should not be held accountable for student scores because they believed there were uncontrollable factors involved (Harrimen, 2005).

Zeidner (1995) has defined test anxiety as an examinee's nervousness or tension, due to an examination, which may occur before, during, or after the actual examination. He acknowledged that test anxiety may elicit different types of responses and he thus further defined it as a "set of phenomenological, physiological, and behavioral responses that accompany concern about possible negative consequences or failure on an exam or similar evaluative situation" (Zeidner, 1995, p.17). Studies completed prior to the push for mandatory testing found that only a small part of the student population (10%) experienced test anxiety (Kondas, 1967). During the 1980s, throughout the same period as "A Nation at Risk", test anxiety was known to be experienced by 25% to 30% of the student population (Hill, 1984). In 1983, a commission set up by President Reagan produced a report titled "A Nation at Risk" (National Commission on Excellence in Education, 1983) that later sparked a wave of testing as a measure of accountability. Nevertheless, more recent studies have estimated that at least 40% of students in our schools experience some form of test anxiety (Methia, 2004). The pervasiveness of the

occurrence of emotional and physiological characteristics of test anxiety in previous studies suggests that test anxiety has steadily increased over time, possibly due to the amount of increased pressure faced by states, school districts, schools, and teachers in American schools (Casbarro, 2005) and may be a widespread phenomenon throughout the nation.

Lazarus (1966) and Spielberger (1966) have posited that test anxiety followed a transactional process. This transactional process is very similar to the behaviorist approach to learning and stimuli. The three main components of the transactional process model are stressors, threat, and anxiety. The stressor refers to the examination situation and the threat is equivalent to the student's personal interpretation of the specific test's threatening level. The anxiety, specifically the emotional state, is a reaction to both the stressor and the threat. The transactional model suggests that the student's test anxiety is initially triggered by entering the testing environment. The potency of the effect of the stimulus will depend on what level the student views the threat of the specific examination. The student's response, emotionality, and worry will then be correlated to his or her perception of the threat. This study was undertaken to find out if students inundated with the pressure of the test simulation or test preparation activity also engage in disruptive behavior and was documented by the school's suspension and absences count.

None of the studies previously mentioned have examined the behavior of students while at school as it relates to the increase in testing, be it during test preparation-centered lessons or high stakes test simulations. Because of the amount of instructional time used for test preparation and test simulation has increased, this study has been

undertaken to examine whether student exposure to testing, test preparation, assessment simulations, and pressure to perform well on high stakes testing did predict students' negative behaviors such as purposeful and non-purposeful self-exclusion from classes as evidenced by suspension rates and absenteeism. These emotional, behavioral, and physiological changes could have been consciously or unconsciously driven by students' need to escape the evaluative situation and furthermore may be negatively reinforced by teachers and other school staff members.

Academic demands on students require a behavioral demand, as well. Test preparation activities and test simulations require students to be inactive classroom participants who must sit in silence and complete tasks in such a way that it mirrors the quiet and strict high-stakes testing scenarios. Students who do not conform to such instructional techniques are reported to the school's administration and required to leave the classroom. Teachers felt pressure to prepare their students to take the state tests whose scores both teacher and student will be accountable for (Lipman, 2003). Students who are disruptive become a test preparation obstacle for the teacher, which could have resulted in the student being punished and removed from the classroom environment (Lipman, 2003). This student could have felt negatively towards the punishment but could have felt positively towards his or her exclusion from the classroom and the test preparation activities. If this cycle is repeated two or more times the student's behavior is being negatively reinforced by the teacher and his or her responsive behavior.

Determining patterns of behavior has shed some light on this issue. The patterns were observed via the use of the regression procedure. The inverted U suggested that as the pressure to perform increases so do the negative behaviors until the crest of the inverted

U where regardless of the increased pressure placed on students, negative behaviors begin to decrease.

Purpose of the Study

The purpose of this research project was to examine whether student exposure to testing, test preparation, assessment simulations, and pressure to perform well on high stakes testing have a relation to students exhibiting negative behaviors as evidenced by suspension rates and absenteeism: purposeful and non-purposeful self-exclusion from classes that are centered around testing. The schools' grade assigned by the state was used as a proxy for the amount of pressure to increase student achievement by including state and district mandated test preparation and test simulation.

Significance of Study

In particular this research is beneficial for school administrators and counselors as they gain knowledge and perspective on student escape behaviors. These insights assist in determining if further student wrap around services should be included at the school site while also identifying which semester, if any, these escape behaviors are being exhibited most. This understanding helps guide decisions on how these escape behaviors should be viewed in the context of school-wide disciplinary plan creation.

School district and state officials benefit from the results of this study as they gain a unique perspective on the correlation between escape behaviors, testing anxiety, and disciplinary actions. By gaining such a needed perspective, they can act strategically by developing district and/or statewide initiatives and policies designed to help alleviate these behaviors and consequently improve overall school success.

Research Questions

The research questions that guided the study are as follows:

1. Is the number of suspensions highest in the third quarter, when most FCAT preparation takes place for each of the 3 school years 2007-08 through 2009-10?
2. How accurately does the high school's grade predict the number of suspensions and number of absences during each of the 4 school years 2005-06 through 2008-09?

Theoretical Framework

Using the theory of behaviorism, the transactional process of test anxiety, the inverted U-hypotheses, and catastrophe theory as a foundation, the researcher compared the level of anxiety or pressure to perform at the school level and the number of escape and negative school behaviors in the form of suspensions and absenteeism. These theories are based on the students' expected reaction towards the stimulus. For this study the stimulus was test preparation and test simulation.

Behaviorism and Transactional Processes

Pavlov (1920) and Skinner (1950), the renowned behaviorists, described how researchers could elicit voluntary and involuntary responses due to a stimulus in the environment that triggered behaviors in the participants. This phenomenon has come to be known as classical conditioning. Woolfolk (2001) in a more recent study explained that behavioral educational psychologists document that a person has learned something only when there has been a change in behavior. Woolfolk also linked this change in behavior to an external event that influenced the individual. This learning can be

constructive or non-constructive. One of the concepts used throughout educational psychology is the idea of reinforcement, which is essentially anything that strengthens a behavior. There are two types of reinforcement: positive reinforcement and negative reinforcement. Positive reinforcement is used to purposely strengthen a desired behavior. Negative reinforcement, also known as avoidance conditioning, occurs when a behavior is strengthened by the removal of a stimulus. This type of reinforcement is often used accidentally during classroom situations. In his book *Educational Psychology*, Woolfolk (2001) mentioned, as an example of negative reinforcement, the case of a student who continually becomes ill right before a test and is sent to the nurse or school office. The behavior, becoming ill, allows the student to escape the aversive situation, testing. The student may unconsciously or consciously repeat the action in other future situations in order to obtain the same response and escape from the event he or she is dreading. If one substitutes the behavior, becoming ill, with disrupting the class or other negative behaviors, the removal of the student from the class via suspension would also be an example of negative reinforcement.

Inverted-U Hypothesis and Catastrophe Theory

The visual shape of the relationship between achievement and anxiety can be described as a parabola or inverted two-dimensional U when using the inverted-U hypothesis (Yerkes & Dodson, 1908) or a three-dimensional inverted U as in catastrophe theory (Thom, 1975). Catastrophe theory is a common theory used to describe the nonlinear relationship which shows evidence of discontinuous, sporadic jumps in behavior. Yerkes and Dodson's (1908) inverted-U hypothesis was based on the association between physiological arousal and performance. The inverted-U hypothesis

suggests that heightened arousal, for which they often interchangeably used the word anxiety, enhances performance of the individual up to a certain point, after which continued increases in arousal lead to a reversal in performance. The end result is a curvilinear relationship between anxiety and performance that can geometrically be charted as an inverted-U.

Using the inverted-U hypothesis of catastrophe theory one can compare the anxiety or pressure to perform at the school level just as one would at the individual student level. State pressure has a variety of different effects on schools. This state or political pressure to comply with federal mandates is felt from the top down with the pressure beginning at the district level, then transferring down to school administrators, to teachers, and then students who are pressured to perform at mastery level on the state's mandatory high-stakes tests. This pressure is not distributed evenly across the state or school districts. Schools that consistently perform well are rarely visited by state officials, are given some requirements, but are allowed to proceed in which ever manner they choose. Schools that do not have a track record of performing well on state tests are visited more often, are given a rigid curriculum by the state's department of education, are not allowed to choose their own instructional materials, and are required to take part in more practice tests and test preparation (Florida Department of Education Bureau of School Improvement, 2012). The pressure to perform may become so intense that the entire set of school activities, announcements from the administration, all lessons that are taught, visuals that are used such as school bulletin boards, and all material sent home to parents or guardians deal solely with testing or test preparation. One can then say, that even though the cusp of the inverted U will be found at different levels depending on the

anxiety level at individual schools, there could be schools that have passed that cusp and where the pressure and anxiety to perform well can affect the number of students trying to escape the classroom environment. Therefore it was logical to test whether some type of relationship between the pressure placed on the school and or students, and the number of escape and negative school behaviors exists. Since schools and school districts are required to report the number of suspensions and student absences, these two student behaviors in which students are not present in the classroom the classroom environment were used as identifiers of escape behaviors. Because the school's letter grade was the factor that determines the state's intervention in schools, the school letter grade was used as a categorical measure of pressure. The purpose of this study was not to confirm that there was causation between pressure and escape behaviors, but solely that a relationship or correlation was present.

Delimitations of the Study

The school years used in this study were selected because the high school grading criteria consisted primarily of points accrued from student proficiency and learning gains on the first generation FCAT assessment that tested the original Sunshine State Standards. For research question #1, the school years 2007-08 through 2009-10 were analyzed. For research question #2 the 4 school years 2005-06 through 2008-09 were analyzed. The exact same years of ex post facto data were unavailable and were thus a limitation of the study.

This research took a deductive approach where specific observations and measures were used to indicate student negative behavior in the form of suspensions and absenteeism that allow the student to be negatively reinforced and escape the testing

situation. This research analyzed these events to determine if there were patterns among schools that are exposed to different levels of pressure to perform by the school superintendent and state department of education. The end goal was to formulate some tentative hypotheses regarding the previously discussed variables that can be explored and tested at some later date. This study did not seek to find causation between pressure to perform and negative behavior. It sought to determine whether there was a relationship between the two variables, pressure to perform on the test as measured by the school grade and negative student behaviors, and set the foundation for future research to determine whether the influence of state pressure as a result of the school's current grade increases the probability of a causal relationship existing with negative behavior.

Definitions of Terms

High-Stakes Testing

High-stakes testing refers to the use of federal or state mandated test results to determine school and district funding, teacher pay, and the promotion or retention of students (Kubiszyn & Borich, 2000). In the study the Florida Comprehensive Assessment Test (FCAT) was the high-stakes test that was used.

Negative Reinforcement

Negative reinforcement, also known as avoidance conditioning, occurs when a behavior is strengthened by the removal of a stimulus.

Pressure

For this study pressure was quantified by the grade of the school as a result of performance on the FCAT.

Reinforcement

Reinforcement was anything that strengthens a behavior.

Test anxiety

Test anxiety is an examinee's nervousness or tension, due to an examination which may occur before, during, or after the actual examination. Test anxiety may elicit different types of responses and he thus further defined it as a "set of phenomenological, physiological, and behavioral responses that accompany concern about possible negative consequences or failure on an exam or similar evaluative situation" (Zeidner, 1995, p.17).

CHAPTER II

REVIEW OF LITERATURE

This chapter begins with the background to the study by exploring theories that are related to behaviorism and test anxiety, followed by early and current research on test anxiety. The effects of testing on students, teachers, and the school climate are also included at the end of this chapter.

Escape Behaviors and Standardized Testing

The problem this study was undertaken to examine was whether there was a relationship between phenomena associated with high stakes testing and escape behaviors exhibited by students who take the FCAT examinations. These relationships could have been consciously or unconsciously driven by students' need to escape the evaluative situation and, furthermore, could have been negatively reinforced by teachers and other school staff members or may be the result of other causal links. With curriculum and accountability currently so intertwined, it was important to determine not only for the purpose of this study but also for the physical and emotional wellbeing of our children, whether extra efforts designed to teach "test prep" and simulate high stakes testing conditions were related to negative student behaviors.

Green (1985) pointed out that although there was a wealth of knowledge and research dealing with test anxiety, very little attention has been given to test avoidance behaviors that occur as a component of the set of responses elicited by students suffering from high levels of test anxiety when they are placed in an evaluative situation including, but not limited to, test preparation and test administration. While this area of research has yet to be delved into, it remains of interest to all educators in the public sector

because of the number of students who take state and federal assessments annually and who are repeatedly exposed to test preparation and testing simulation as part of the school curriculum whether or not a relationship to student behavior and testing can be found.

Behaviorist Theory

Aristotle (384 BC–322 BC) was one of the first scholars to define learning when he stated that learning is really the act of remembering. Remembering takes place when a person groups similar things/ideas, compares one idea to the other and finds a contrast, or learns concepts by contiguity (Woolfolk, 2001). The last premise, regarding remembering, is probably the most important because Aristotle was theorizing that human beings can associate one concept or sensation with another if they occur together often enough. The simultaneous exposure to the grouped concepts makes it so that they are no longer viewed as separate items but rather are seen as being related (Wasserman & Miller, 1997). Pavlov (1920) and Skinner (1950) discovered through their studies on classical conditioning that humans could elicit voluntary and involuntary responses due to a stimulus in the environment that activates the behavior. Much like Aristotle, they were able to observe participants elicit similar or identical responses to learned experiences that were exposed simultaneously. Woolfolk's (2001) definition for learning stated that the process of learning can only be formally documented when a change in behavior, caused by an outside stimulus, is observed. This change in behavior could have been a desired change sought out by a teacher or an undesired change produced by an unintended stimulus that was processed by the learner. Behaviorists believe that anything from geometry and English to anxiety and attitudes are all part of learned behaviors. One of the concepts used throughout educational psychology is the idea of reinforcement—

which is essentially anything that strengthens a behavior—and the most common form is “positive reinforcement.” A teacher has used positive reinforcement when they have given students candy or praise after performing well on an assessment. Negative reinforcement strengthens the particular behavior by removing an unwanted stimulus from the environment. Teachers have often coaxed students to exhibit a certain behavior by promising to remove a homework assignment or some other task that is dreaded by the student. Unintended negative reinforcement has occurred in the classroom as well. Students who have felt uneasy about a situation or a teacher could have been consistently requesting to leave the classroom to use the restroom or to call a parent. If the teacher allowed the student to leave the uneasy environment, the student could have internalize the relief of exiting that environment, and could have consciously or unconsciously duplicated certain behaviors in order to continue to feel the sensation of relief (Woolfolk, 2001).

Transactional Process Model

Lazarus (1966) and Spielberger (1966) posited that test anxiety followed a transactional process. The three main components of the transactional process model are stressors, threat, and anxiety. In this study the stressor referred to the examination situation and the threat is quantified by the student’s personal interpretation of the specific test’s threatening level. The anxiety, specifically the emotional state, was a reaction to both the stressor and the threat. The pattern/relationship was illustrated to look like this:

Stressor → Threat → Anxiety

The transactional model suggests that the student's test anxiety was initially triggered by entering the testing environment. The potency of the effect of the stimulus was dependent on what level the student views the threat of the specific examination. For example, the student could have perceived a relatively low threat if the stressor is an assessment on a subject area or concept that he or she feels was his or her strength. The student could have felt a relatively high threat if the assessment area was an area of weakness for the student or if the test taker feels that he or she has not spent enough time studying and feels unprepared for the assessment. The student's response, emotionality, and worry could have been interconnected to the perception of the threat. The student's appraisal of the threat was ongoing throughout the examination and therefore the anxiety level fluctuates with different appraisals. The emotionality, worry, and anxiety of the student then affected the student's processing of the information on the exam and the student's overall academic achievement.

The transactional model illustrated anxiety as a process that was developed over a period of time from repeated interaction of the student with the high stress environment. It was the combination of the sequence of events and external stimuli from the environment that together make the test taker feel threatened or anxious. As a result of these external stimuli, the individual's physiology and or behavior could have shown changes visible to the test administrator. The stressful event with the addition of the person's interpretation of the event could have elicited the response of the test taker be it anxiety or not. The cognitive appraisal of the testing situation was key. Deary et al. (1996) believed that the transaction model of stress highlights a minimum of three basic categories: (a) the antecedents to stress, (b) mediators of stress, and (c) the outcomes of

stress. Two subgroups of variables can be found within the category of antecedents: the test taker's personal variables and the external environment's variables. Some examples of personal variables were the person's self-efficacy, self-confidence, and outlook. Examples of environmental variables were the physical makeup of the testing location or classroom, whether or not the test is timed, and the tone of the test giver. Lazarus (1991) emphasized that anxiety and the emotionality expressed by the individual is forged primarily by the environment and the person's past and current experiences with the environment. He believed that any emotions induced in the person are caused by the person's synthesis and assessment of his or her current standing in the present environment. The anxiety and emotionality are representations of inner threat to the person's ego, self-esteem, or self-efficacy. Clearly, the testing environment was a delicate situation that if not treated with care by everyone involved could have caused a negative response in children. If the student was not comfortable, he or she might not have performed at his or her highest level of capability.

The testing environment was unique from others because it was purely an evaluative situation. The person or his or her abilities, in comparison to others or previous performance standards or criteria, are being judged or assessed. The outcome of examinations usually involves either triumph or failure, placing the tested individual in a win or lose situation. A student could have experienced anxiety before, during, or after a testing situation, but anxiety was generally associated with either current or previous responses from the environment (Zeidner, 1992). Zeidner (1995) noted that it was important to remember that test stimuli are conditioned stimuli and the meaning which the individual gives to these stimuli is dependent on the individual's previous

experiences. These experiences could then create a repeated cycle for the test taker that was triggered by the individual's perception of the threat of the examination. The more often students have experienced this pattern in the past, and are then placed in the same situation with the same negative results, the more likely that they will have future negative experiences. Because high school students who have been educated in the public school system would have had exposure to testing and test preparation since elementary school, the relationship between testing and pressure will be of interest to this study.

Non-Linear Approaches to Anxiety

Anxiety and achievement often do not represent a simple linear relationship. Students who were unprepared for an examination or did not fully grasp the material could have shown physiological or behavioral characteristics of anxiety as related to the examination. Mulvenon, Conners, and Lenares (2001) found a moderate relationship when looking at whether or not future test performance could be predicted from, hindered by or attributed to the student's attitude towards standardized testing. Students who had negative attitudes towards standardized testing usually performed lower than those who had a positive perception of standardized testing. They also noted that students' scores were related to the students' reading and mathematics self-efficacy. Their self-efficacy was found to generally be consistent with the students' performance on the correlating subject in the standardized exam. Inversely, there are many high achieving students who suffer from some form of test anxiety but when analyzing their test results, it can be determined that they have performed at or above average when compared to their peers. Blankstein, Toner, and Flett (1989) acknowledged in their study that participants who

showed signs of anxiety but had positive perceptions about their abilities and the content being assessed, performed better than peers who did not exhibit anxious behaviors on difficult anagram solving questions. One cannot say then that as anxiety increases conversely achievement decreases. Some form of anxiety plays a role in both the increase and decrease of academic achievement. The inverted-U hypothesis (Yerkes & Dodson, 1908) or the three-dimensional inverted U catastrophe theory (Thom, 1975) states that anxiety and achievement have a positive correlation up to a certain threshold. When this threshold was reached, then any additional pressure or anxiety will not cause increased achievement but would inversely cause achievement to decrease. The geometric shape plotted by this relationship because of the discontinuous nature of the behavior is an upside-down U. Thom (1975) describes the inverted U catastrophe theory as having the potential for describing the evolution of bimodal performance in relationship to arousal in all aspects of nature. This can include individuals or groups.

Yerkes and Dodson in 1908 were specifically interested in observing the relationship between physiological arousal and performance. In their study, Yerkes and Dodson interchangeably used the words arousal and anxiety. They were the first to document the parabola formation between arousal and performance found in their statistics. French mathematician René Thom (1975) was the originator of catastrophe theory and believed that this model had the potential of describing geometrically the evolution of behaviors in nature. The apparent difference between the inverted-U hypothesis and the catastrophe theory is the ability to separate anxiety related variables allowing for a three-dimensional visual or approach. Catastrophe theory has been used to explain hasty changes in the mood of participants (Zeeman, 1977), observed attitude and

behavioral change (Cobb & Watson, 1980), and why students stop the problem solving process or evaluative situation with or without reaching the solution (Boles, 1990).

These studies showed that the participant's mood, anxiety, or behavior reaches a particular cusp or peak prior to a downward trend. Both the inverted-U shaped hypothesis and catastrophe theory are current approaches used to study anxiety in a plethora of arenas.

Bimodality is a major aspect of catastrophe theory. It described the fact that a particular behavior or amount of a behavior can be located and identified on both sides of the inverse U-shaped plane, making that particular behavior vague without more analysis. Slight changes in the environment or situation can cause a sudden leap from one side of the curve to the other. This leap is what is described as the point of catastrophe, from what appeared to be a linear relationship to a non-linear correlation. At the peak, or middle of the curve, there can be only one value for the behavior. The leap in the behavior is as a result of and the state of the external stimuli. This peak or change in direction is located at a different spot on the y-axis depending on the participant's individual analysis of the situation. In other words, the threshold for anxiety is different from individual to individual.

The behavioral and emotional fluctuations of a student during problem solving situations presented clear examples of the catastrophe theory in action. Emotions could have changed rapidly throughout the problem solving process. Negative emotions such as frustration, hopelessness, apprehension, and panic, along with "positive" feelings of inquisitiveness, accomplishment, and satisfaction can shift from one to the other. The missing variable between the ability to problem solve and the emotionality of the student

was the level of pressure and anxiety from either the instructor or the level of difficulty of the question that is being solved. Some discomfort and anxiety are necessary to motivate the student to find the answer of the unknown. Without some anxiety motivation was low and conversely achievement was low. The catastrophe theory then suggested that anxiety and motivation are positively correlated up to a certain point, the peak or middle point, where then as anxiety increases motivation begins to decrease. In Allen and Carifo's (1995) study, the inverted U catastrophe theory was used to describe the relationship between mathematical problem solving and anxiety as it related to a group of students. Allen and Carifo (1995) suggested that this model of emotion during problem solving is best at describing the emotional aspects of problem solving as related to anxiety. They also suggested that informing students about this model and the relationship between anxiety and motivation may help students become better problem solvers as they attempt to monitor their emotions, keep their anxiety level stable, and thus persist past the point in which they would usually feel defeated.

Hardy (1990) used Thom's catastrophe theory as a basis for his own theory, to analyze the effects of anxiety on performance. He titled his approach the Cusp Catastrophe Model. Hardy's model is founded on the philosophy that performance anxiety is a multidimensional construct combining both a cognitive component and a physiological component. The cognitive component includes the student's negative expectations of performance, self-efficacy in the task at hand; the anxiety based on the specific situation or stimuli and the internal analysis of the potential consequences of failing at the task, whereas the physiological arousal component describes the biological response to the anxiety-inducing situations or tasks. Hardy used this model in several

studies (1990, 1996, & 1999), Hardy and Parfitt (1991), and Hardy, Parfitt, and Pates (1994) to predict the interactive effect of the participant's cognitive worry with the addition of the physiological, biological effects on the participant's ability to perform certain tasks.

Hardy's model suggested that there are four different results that can be predicted from the relationship between cognitive and physiological effects of anxiety and the level of performance. The first relationship Hardy noted in his study proposes that there was a positive correlation between cognitive anxiety or worry and performance if the physiological effects of the anxiety are kept at a minimum. The second relationship described low performance when both cognitive and physiological forms of anxiety are high. This relationship was the most geometrically similar to the ideal inverted U-shaped parabola. The third relationship showed low cognitive and physiological anxiety has a correlation with low performance. The last relationship described the most similarity to Thom's model whereas very high levels of cognitive and physiological anxiety showed a dramatic drop from the upper level of performance. In order for performance to strengthen once again from this catastrophic drop there must have been a remarkable reduction in the physiological arousal of the participant. Therefore, Hardy suggested that some cognitive anxiety increases performance but it is the addition of physiological anxiety that sets off the cusp catastrophe model. He described this displacement of performance as hysteresis. Hysteresis was noted and described in detail in these studies: Hardy and Parfitt (1991), and Hardy et al. (1994). The findings of a later study by Hardy, Beattie, and Woodman (2007) replicated the results found in Hardy's previous studies. This more recent research found that there was a significant three-way interaction

between worry, direction of the line graph, and task difficulty. Additionally, the hysteresis effect in the high worry condition was found to be quite apparent in an experiment that dealt with a letter transformation task with step increases of state anxiety as was the absence of hysteresis in the low worry condition.

Hardy and Parfitt (1991) wrote about the internal dialogue of what the participant may be experiencing through the lens of the cusp catastrophe model. As the amount of cognitive anxiety increases the student's opinion regarding the amount of effort needed for success increases. At some point students created a limit where they believed the amount of effort needed to be successful in completing the task is higher than their probability of successfully completing the task. They then removed themselves all together from the task. In order for the students to reinvest themselves in the task, the amount of the perceived effort to accurately complete the task must be decreased, raising their internal beliefs of their probabilities of success in completing the task.

Allen and Carifo (1995) also note that Mandler's theory of emotion (Mandler, 1984) reflected the same inverted U-shaped correlation between anxiety and achievement as does inverted-U hypothesis and catastrophe theory. Mandler's theory suggested that there was a disconnect between what the student expects will happen and the current testing or problem solving experience causes an interruption in the student's ability to complete the assessment or problem solving activity. The interruption is the biological and emotional response to the testing situation and thus these responses occurred after any disconnect between what the student anticipated and reality. The strength of the anxiety, be it biological or emotional, depended on the amount of disconnect the student has experienced and whether the outcome of the assessment was positive or negative.

The emotionality and response to the assessment situation depended on how the student interpreted the event of the interruption.

Early Research on Examination Stress and Test Anxiety

Folin, Denis, and Smillie (1914) appeared to have written the first study on record that investigated the effects of test anxiety. Folin et al. concluded in their findings that one out of every five medical students who took part in a urine test after having taken a stressful standardized examination found evidence of sugar in their urine. Prior to the examination, none of the students had been found to have had sugar in their urine. The results of this study highlighted the fact that stress, in this case stress from completing an examination, can have physiological effects. Luria (1932) was a pioneer in test anxiety research and was the first to identify individual differences in the way students reacted emotionally to testing situations. Luria (1932) documented that there were medical students whom he had observed who were visually excited and disorganized during high stakes examinations. These students' speech and motor functions were un-coordinated. His landmark study aided in moving test anxiety research forward.

Test anxiety scales became the next step in test anxiety research. Brown (1938) and several of his colleagues at the University of Chicago have been recognized as the first to have developed a scale to identify students who are exhibiting test anxiety. Using this anxiety scale, Brown found a correlation between high scores on the inventory, observable nervousness before an examination, and a decrease in academic performance when taking tests. He also claimed that test anxiety may have extreme consequences and attributed the suicides of two students at the University of Chicago to their own test anxiety. Although an extreme example of escapism, this illustrates that a student's fear

of testing may be so overwhelming that he or she may be willing to take drastic measures rather than face the dreaded test and may even feel that there are no other options. Some common forms of escape that students may demonstrate during a similar situation are making themselves ill, causing a disruption, or physically assaulting themselves or others. Sarason's (1958) research gave further insight into the effects of test anxiety. He found that if achievement on a specific test was emphasized, for example a high stakes test, students who suffered from test anxiety performed more poorly than they did on teacher made tests. The fear of doing poorly overwhelms the student and that may result in the student performing worse than he or she might have if he or she had not felt anxiety caused by the testing situation.

Test Anxiety

Zeidner (1995) defined test anxiety as an examinee's nervousness or tension, about an examination that may occur before, during, or after the actual examination. He acknowledged that test anxiety may elicit different types of responses and he thus further defined it as a "set of phenomenological, physiological, and behavioral responses that accompany concern about possible negative consequences or failure on an exam or similar evaluative situation" (Zeidner, 1995, p.17). Hill (1984) found that as many as 10 million students from elementary to secondary grade levels suffer from some form of test anxiety. Considering Zeidner's findings, along with Hill's data, it is therefore logical to deduce that this number has risen since the emphasis of the No Child Left Behind Act on testing.

In order to tease out the origins of test anxiety, it is helpful to separate the test anxious individual's previous experiences into distal antecedents and proximal

antecedents (Philips, Martin, & Meyers, 1972). Distal factors, in short, are indirect factors that usually are formed by some experience during the early years, which caused the initial anxiety, but also continue to cause present anxious behavior and influence examinee's current perception of assessments. Some examples of distal factors were pre-school experiences, school experiences that occurred early in their life, cumulative academic failures, teacher-child relationship/episode, or parent-child relationship/episode. Proximal antecedents were factors which are directly responsible for current anxious reactions and can be attributed to recent events or specific situational associations. Examples of proximal antecedents of test anxiety were evaluative school climate, an upcoming important high stakes test, and the known consequences of failing the specific assessment.

Sarason, Davidson, Lighthall, Waite, and Ruebush (1960) believed that strong test anxiety reactions in students must be attributed not only to conscious meanings and consequences of test failure but also to symbolic and unconscious associations to evaluative situations. With this foundation in mind, Sarason et al., (1960) developed the psychodynamic model theory of test anxiety development. They believed that the initial relationship that defines the student's test anxiety is the parent-child relationship. It began with an evaluative situation in which the child did not live up to the parental demands or expectations. As a result the child began to have negative perceptions of him- or herself as well as negative perceptions of his or her parents. While the child was internalizing these negative messages given from a parent he or she then developed a hostile attitude towards the parent and begins to reject the parent. The child then began to feel guilt about these hostile feelings which stimulates more self-derogatory feelings

and repression of the hostility. The child then became dependent on approval from the parent. This dependence heightened the child's awareness that he or she must perform well on tests to gain back the parent's approval and love. Concurrently, this dependence brought with it the fear of failing an assessment and the parents' resulting disappointment. This fear was then transmitted into test anxiety. Sarason (1972) believed that because the teacher-student relationship is quite similar to the parent-student relationship, the hostile feelings, self-resentment, and dependence could be transferable to the educator as well. This could have caused a student to show negative behaviors in the classroom. Such students could have directed their hostility not only to the testing situation but also towards their teacher and peers.

Effects of Testing on Students

Test anxiety was more prevalent among secondary students when compared to elementary school students and is correlated to whether or not they are achieving grade level standards, as was the case in a study that found that students identified as low achievers concurrently exhibit higher test anxiety (Karmos & Karmos, 1984). Mulvenon, Connors, and Lenares (2001) found in their study that students with more favorable attitudes towards standardized testing performed higher on the tests. Their research also found a moderate relationship when looking at whether or not future test performance could be predicted from the student's attitude towards standardized testing. Students who had negative attitudes towards standardized testing usually performed lower than those who had a positive perception of standardized testing. They also noted that students' scores related to their reading and mathematics self-efficacy. Their self-efficacy was

found to generally be consistent with their performance on the correlating subject in the standardized exam.

Hill (1984) found that the 10% most test anxious students scored a year below grade level while students who were identified as having the lowest levels of test anxiety scored a year above their grade level. With the addition of the testing anxiety, students who are already struggling with the content could have been unable to effectively demonstrate the content knowledge that they have obtained in formal assessment setting. Fryans (1979), though not consistent with the inverted U hypothesis, stated that negative correlations between anxiety and test performance that were found, consistently increased as they progressed from grade to grade and become especially alarming by 11th grade, $r = -.60$. Armstrong (2006) noted that students who were having learning difficulties before the increase in testing and test preparation were finding themselves more and more behind as the lessons were structured for the masses and not for the nuances of the individual learner and individual needs. This is reflected in higher retention rates and higher dropout rates across the nation, especially for minority students and students from low socioeconomic backgrounds who live in states that mandate some form of standardized testing as a graduation requirement.

Students who performed poorly on examinations are not the only subgroup of students who suffered from test anxiety. Galassi, Freirson, and Sharer (1981) found that high performing students were also documented to have experienced test anxiety during examinations; although overall performance on the examination was good, their internal dialogue suggested anxious and negative thoughts. The researchers believed that these high performing students also had a high motivation to perform well on assessments.

This high motivation and their need for achievement were essentially what drove the anxiety during the testing situation for this type of student. Galassi et al.'s description could be used to describe the beginning stages of the inverted-U up until its crest. These students showed increased performance as a result of their motivation and anxiety.

Galassi et al. (1981) explored students' behavior at various times throughout their participation in an examination. The researchers focused on the internal dialogue that the students were conducting during the examination. They investigated the role that the internal dialogue played during the examination in conjunction with the students' anxiety as well as, within these cognitive structures, the differences and similarities between participants by periodically surveying the student during the examination. They additionally analyzed the differences and similarities of bodily sensations and behavior. Students who were identified as highly test anxious had a higher ratio of negative thoughts than did their less anxious counterparts. The results also showed that as the anxiety level rose so conversely did the quantity of negative thoughts. For highly anxious students, the most frequent thought documented was the wish that testing was over or the wish that they could leave the testing environment. Students who were found to have low anxiety had more positive thoughts. The students who were the least test anxious had fewer occasions of bodily sensations occurring as a result of their anxiety than those who were the most anxious. The most frequent bodily sensations reported were (in descending order): hands or body perspiring, an irregularly fast heartbeat, stomach tenseness, dryness of the mouth, and hands and or body trembling.

Paris (1992) discussed a concern that students would ultimately be affected by testing and that the emphasis on test scores would be harmful for students because of how

influential those tests and scores are to their overall educational experience, given how much importance schools and teachers have placed on test results. Students who have performed poorly on tests in the past become further disillusioned when taking current and future tests and have exhibited anxiety behaviors including, but not limited to, cheating and lack of motivation (Paris et al., 1991). Rottenberg (1991) studied teachers' reports and stated that in these reports teachers documented observing children exhibit anxiety because of testing and that often the lower-achieving students have lower self-concept because of testing situations. Connell (1985) observed even more disturbing self-concepts, noting that students who consistently performed poorly on tests also felt powerless and victimized by the evaluation. They did not believe that they could control their own success in school.

Neuroticism could also be linked to test anxiety. Chamorro-Premuzic, Ahmetoglu, and Furnham, (2008), within the theme of test anxiety, designed their research study to find out whether or not there is a relationship between the "Big Five" observable behaviors and test anxiety. The "Big Five" refers to Neuroticism (N), Extraversion (E), Openness to Experience (O), Agreeableness (A), and Conscientiousness(C). Three different inventories/questionnaires were given to a total of 388 students. The data from that study revealed a strong correlation between neuroticism and test anxiety. They also found some links between extroversion and test anxiety. These researchers believed their data showed a direct correlation that a student's established personality traits can determine and additionally fully explain the level of participant self-evaluation and test anxiety.

Attitudes Towards Testing

Testing, in general, was not a topic in which students have a positive outlook. Students needed to be prepared academically, psychologically, and emotionally to take tests. Many students feared taking tests and needed help in order to overcome these fears. Rubenzer (2002) found that the fear of academic failure is one of the most difficult daily problems American teenagers face. The self-confidence built from doing well on tests can then be carried into other areas of the student's life and positively impact his or her outlook on future challenges. The same can be said about failing while at school. These academic failures can leave an emotional scar and affect future decisions as students are faced with challenges. Test success increases the students' self-esteem and confidence about their ability to test well (Rubenzer, 2002).

Students' attitudes towards testing differed when comparing variables such as student age and sex. Paris et al., (1991) were interested in the topic of student attitudes towards standardized testing across grade levels and among subgroups. They specifically wanted to find out the extent to which students were frustrated with standardized testing and when they first developed this attitude towards testing. In their study, Paris et al, (1991) noted that girls, overall, experienced more test anxiety than did their male counterparts. Their survey also indicated a major difference in testing attitudes between elementary and high school students. High school students were more likely to believe that even good students do not always perform well on standardized tests. Quite opposite of high school students, young children placed their trust in their teacher and adopt their teacher's attitudes and beliefs toward the examination or testing in general. Connell (1985) noted that elementary age students attribute all success, whether it is on a test or

other task, to the amount of hard work and time spent on preparing for and completing the task. In contrast, older students believe that successfully passing a test or completing any other task can be caused by external, uncontrollable forces such as luck or even other people. This sense of lack of control can lead to further testing anxiety, negative self-perception, and aggressive behavior (Paris et al., 1991).

The age of the students was also related to their faith in testing. Adolescents were found to be suspicious and cynical about testing (Paris et al., 1991). The older students disagreed with the statement that schools use test scores and information from the test to provide useful information to the students and their family. A second trend found by this same study was some high school students' lack of motivation to perform well on tests. Paris et al., (1991) found that certain trends were very apparent especially among low achievers. They reported that after repeated negative testing experiences, low achievers were more prone to develop anxiety, cheat, use poor test-taking strategies, and give up on completing the examination.

Using the Test Anxiety Inventory for Children and Adolescents [TAICA]—a 45 item self-report measure—Whitaker, Sena, Lowe, and Lee, (2007) determined that many subgroups viewed test anxiety in the same way. This study found that the TAICA results were similar when comparing students with and without learning disabilities (LD). The LD students showed a higher level of Cognitive Obstruction/Inattentive scores when compared to students not labeled as LD. This study as with the Paris et al., (1991) study found when comparing gender, females showed higher test anxiety scores than their male counterparts. Older students also showed higher test anxiety scores than did younger elementary age students. This could have simply been because they have accumulated

more negative testing experiences, leading one to believe that these elementary students might later on in their educational careers be just as anxious. Because older students have more to lose academically by performing poorly on an exam, they may be more prone to lashing out or escaping the testing environment which merits examination of suspension and attendance rates; the focus of this study.

Escape Behaviors Associated with Test Anxiety

Zeidner (1998) found that students who suffered from test anxiety often exhibited avoidance and escape behaviors at different times when taking part in the testing process. He noticed that students would exhibit escape behaviors prior to and during the examination. One form of avoidance or escape found in test anxious students noted by Rothblum, Solomon, and Murakami (1986) was academic procrastination. Academic procrastination occurred prior to the taking of the test and was characterized by such behaviors as putting off studying, cementing procrastination as a habit, and experiencing high levels of anxiety during the decision making process to procrastinate and not study. These test anxious students were procrastinating when there was an opportunity to study, the study materials were available, and they had a predetermined schedule that they had themselves created to study, but continued to put-off and delay the act of studying for the test. The procrastination became a pattern and was repeated throughout their academic careers because it had allowed the student to escape studying, which they had perceived as an aversive situation, and was thus an example of negative reinforcement.

Green (1987) found that test anxious students use escape behavior as a “self-protective” tool to immediately reduce any tension, worry, or emotionality experienced prior to, during, or after the completion of the examination. Students may either attempt

to completely avoid or escape the actual testing situation or they may distract themselves in order to make mediocre efforts, and perhaps none at all, to complete any part of an assessment. He found that students reverted to these avoidance and/or escape behaviors whenever the possibilities of escaping the examination situation were deemed to be low. Galassi, Freirson, and Sharer (1981) found that the desire to escape were the most frequently reported thoughts experienced by test anxious test takers during a situation in which the anxious students were engaged in an assessment. Other students may use escapism as more of a venting outlet rather than as a defense mechanism, as Paris et al. (1991) noted, “some students may feel that the tests serve political purposes for the district and express their hostility with a lack of effort or even deliberate sabotage of the tests” (p. 15).

Continual absenteeism has also been found to be linked to some students’ attempt to escape evaluative academic situations during the course of the specific school testing days. Kearney and Albano (2004) found that about 25% of the students in their clinical study confirmed that they had been absent from school in order to escape or avoid a negative, high-anxiety situation. Dube and Orpinas (2009) stated that 17% of the students in their study centered on school refusal. These students admitted in their survey responses to having missed school to escape an undesirable situation. Another of their findings was that students who had admitted to having missed school for escape purposes were more likely to have higher total averages of behavior problems and poor conduct while at school than those students who were absent from school for other reasons. They also found a higher total count of stressful and/or traumatic incidents had happened to these students during the course of the school day. Steward, Steward, Blair, Jo and Hill

(2008) discussed in their findings that society commonly accepts the notion that students who are habitually absent from school perform poorly in school. It was not clear whether absenteeism was the cause of insufficient academic achievement or conversely that frequent failures at school cause deliberate absenteeism. Steward et al., (2008) believed it reasonable to conclude that some students may choose not to attend school because, paired with a history of negative success experiences, they have difficulty understanding content, the teacher's lessons, or the textbook. They suggested that in cases like this schools serve as the apex of "persisting failure-inducing experiences" (Steward et al., 2008, p. 528).

Steward et al. (2008) pointed out that middle/high school students may elect to avoid or skip a subject or class period instead of avoiding the school site all together. Such students more often than not do not skip class alone but usually with a peer or a group of peers who have made the same avoidance decision. These students inadvertently may have reinforced one another's test or academic anxiety and perpetuated this relationship as the primary outlet of stress relief. This then became a pattern of escape and avoidance throughout the course of the school year or specific academic class. Students who skipped class could have also faced repercussions such as being suspended by a school site administrator. These suspensions may have perpetuated the problematic pattern as it may result in further exclusion from class or the school site for a period of time.

Escape behaviors were also noted in Conway's (1973) study which observed Black and Hispanic students during testing situations. This investigation sought to determine the effects of standardized testing on the following student sub groups: low

Socio Economic Status (SES) Black students and low SES Hispanic students. While reviewing previous research on the topic, Conway began to see a trend that indicated that students in these two subgroups tend to do more poorly over time as they remain in the school system. Conway wanted to obtain data that would determine whether or not the decline of academic achievement over time could be attributed to evaluation methods used in schools, specifically standardized testing. She hypothesized that the more testing the students were given the more depressed the student achievement scores would be. Teacher checklists were given to teachers assigned to these low SES Black and Hispanic students. Teachers were also surveyed regarding their own observations made about these sub groups. Classroom observations determined that these students displayed high stress behavior during testing. Some of these high stress behaviors ranged from crying, deliberately distracting classmates, complaining of ailments or illnesses, and running out of the testing area. When comparing the scores of a pretest and two additional tests that were administered, it was found that 75% of the students either did not show achievement gains on the second or third tests or dropped one or more stanines below their first test score.

In their 2002 study, Bass, Burroughs, Gallion, and Hodel requested that teachers who taught seventh, eighth or ninth grade complete the “Teacher Survey for Observed Test Anxiety” while or soon after their students concluded an examination. This survey showed that 81% of the teachers reported that their students had mentioned to them at some point or another that they felt test anxiety. In this same survey 80% of the teachers had witnessed student uneasiness during testing. Teachers reported high absenteeism on

the day of the test, disruptive behavior during testing, student crying, and students reporting physical illness.

Carr, Taylor, and Robinson (1991) conducted a study based on the behavioral psychology approach. This study focused on two main elements. The first was the effect of the student's severe behavior problems on the educator and the second was observing when the student's severe behavior problems were exhibited and the external factors that were present during the behavior. They found that after the instruction was delivered the students who were prone to behavior problems responded 46.8% of the time with inappropriate behavior. Interestingly, the same behavior problem children responded inappropriately only 5.9% of the time when the adult engaged in non-instructional behavior with the child. There was a lower level of behavior problems in all when non-instructional situations were observed. The adults also gave significantly fewer tasks to those students who displayed poor behavior than to those children who were more cooperative. They believed in the idea that students play a passive role in the classroom is false and that students in general should be viewed as actively influencing the behaviors of the other students in the classroom and the educator. Carr inadvertently found that the student's misbehavior was thus maintained by negative reinforcement (escape). The misbehavior was observed more frequently during tasks that were deemed difficult or higher level tasks. They believed that the student's negative behavior occurred as a response to the task itself. To avoid the student's elicitation of negative behavior, the educator then withdrew the tasks or formatted tasks to make them less demanding.

McIntosh, Horner, Chard, Dickey, and Braun (2008) found in their study that teachers identified escape or avoidance of academic tasks as the most common purpose of problem or negative behavior. Additionally, they found that incidence of negative behavior reinforced by escape or avoidance of an academic task increased as the age and grade level of the student increased, while negative behavior that was reinforced by obtaining an adult's attention decreased as the age and grade level of the student increased. Students who received special education services were found to have a higher rate of repeating negative behaviors in order to escape an academic task than other students. McIntosh et al. (2008) proposed that variables within the classroom that are closely tied to curriculum and academic tasks play a role in the occurrence and maintenance of problem behaviors for students. In part, this proposition led to the current study's hypothesis concerning occurrences of negative behavior during the quarter in which the most test preparation takes place and in schools that are required to take part in more test preparation and test simulation.

School Climate

It was within the school environment that a child and/or early adolescent experienced the majority of tasks associated with high stakes evaluation. As the school and classroom settings were where most children and adolescents equate testing and evaluation it was no wonder that the climate within the classroom and school plays a leading role in evoking and maintaining the student's test anxiety during assessment situations (Wigfield & Eccles, 1989).

Across the country the No Child Left Behind Act has forced states to create grade level and subject area standards, high-stakes state-wide tests, supplemental tutoring

programs, procedures for school probation, and zero tolerance behavior measures. These actions have all been taken in the name of accountability and equality. Yet, Lipman (2003) found that lower socio-economic schools whose populations are majority African American or Hispanic feel the consequences of testing mandates more strongly than school of higher socio-economic status and whose school population has fewer minorities. Lipman conducted a thorough analysis of the side effects or consequences that have taken place in the Chicago Public School District as a result of the accountability policies and state regulations.

One of the main consequences Lipman (2003) uncovered was the fact that thousands of Black and Hispanic students were not progressing to the next grade level. They were either retained in the grade level or sent to remedial opportunity schools and basic education transitional schools. The in school classroom instructional consequences of the mandates were also very visible and recurrent throughout the schools with high populations of African American and Hispanic students. Teachers' professional freedom to choose curriculum and resources was greatly hindered. The curriculum in the schools that had not scored well on the Illinois state mandatory test was based on direct instruction, had scripted teacher prompts, and promoted test preparation and standardized-test-style questioning. Teaching to the test has become a normal procedure with teachers feeling the pressure to ensure that their students do well on the test or else will be left behind. Although Lipman mentioned that this direct instruction has shown a link to raising test scores, this type of instruction left out of the curriculum many topics that students needed to learn to become productive members of society. Teachers, parents, and students alike have accepted test preparation and the instructional time

dedicated to test preparation as a common part of the curriculum. These stakeholders have convinced themselves that teaching our students to become good test takers is a skill that they will need to succeed in education or life in general. Students were spending a great amount of time completing practice tests and worksheets and very little time reading novels or taking part in any other instructional format than is tested. Lipman points out that the lack of intellectual engagement, oral or written, has simultaneously created a lack of motivation and personal meaning to the work that is produced by the student. This has further resulted in students feeling helpless and powerless to change their current educational experiences and outcomes.

Students who do not perform well on these high stakes tests were subjected to extra test preparation and instruction. This instruction has taken place before or after school or even on the weekends or school breaks. Many businesses have been and continue to be funded at the state and federal level in order to supply school districts with outside private tutorial programs. During the school day, schedules have been changed for those students who have not shown adequate performance on the standardized tests. These students find themselves enrolled in intensive in addition to regular reading or mathematics classes, depending on their individual area of weakness, and denied access to many of the humanities and elective courses. Curriculum that has been driven by standardized tests in essence kills critical thought and teaches students to be disengaged participants of their education.

Student disciplinary procedures have changed and the numbers of student referrals have increased due to the emphasis on standardized testing. The need to focus primarily on testing and student achievement has forced schools and school districts to

enact zero tolerance disciplinary processes. The words probationary and failing were deliberately selected to describe schools who are not passing the state mandated tests. These words conjured images of disciplinary actions found not only in education, but throughout society. This was especially true when comparing the penitentiary system and the language used with inmates. The nonchalant joining of these terms with school status becomes ingrained in society. Lipman (2003) stated that from 1999 to 2000 enrollment in the Chicago Public School system increased by a mere 665 students, yet student suspension rates dramatically increased from 21,000 to 37,000. The biggest increase in suspensions during the collection of this data was among the African American student population, as they accounted for 73% of all suspensions during the 2 year period despite only constituting 53% of the student body. Coincidentally, expulsion rates also showed a similar trend. From 1995-1996 the Chicago Public School System reported 80 student expulsions. The rate dramatically increased to 737 student expulsions in 1998-1999, with African Americans having represented 73% of all students expelled but only constituted 53% of the student population. This dramatic rate increase happened only 5 years after Chicago's 1995 school reform law, considered a prototype for Bush's NCLB, was put into place (Lipman, 2003).

Wigfield and Eccles (1989) claimed that schools and classrooms that reinforced a competitive atmosphere or climate usually increased test anxiety behaviors in students with previous incidents of anxiety. Test anxious students who were placed in a competitive climate or whose scores are openly compared to those of their peers fear testing situations because they are usually performing lower than their peers which makes outperforming their peers seem impossible and the consequences of failing the

assessment seem more devastating. This competitive climate could have had negative effects in students who exhibited test anxiety such as decrease in motivation, performance, self-efficacy, and self-perception. Students who viewed their classroom environment as competitive reported having received more punishment than support from their teachers. They also reported that they had been asked to perform beyond their limits and or unreasonable tasks. When tested, these same students had elevated levels of test anxiety when compared to their peers (Pekrun, 1985). Schwarzer (1984) found that test anxiety scores of students who perceived their classroom environment as competitive and felt higher achievement pressure at one grade could be used to predict future test anxiety levels in future testing situations and grade levels.

Reis, Trockel, and Mulhall (2007) found school climate trends based on the schools the students attended. The data for their study were obtained through a national survey of 111,662 middle school students. The participating schools were all members of a nation-wide middle school association. These schools were found to be diverse in that they taught students from different cultural and racial backgrounds and students with different socio-economic statuses. The study concluded that school climate played a major role in students' aggressive behavior. Decreased aggression was associated with schools whose policies, instructional design, and instructional content were managed at the school level and targeted the population of the school. The method in which material was presented to the students also played a role in whether or not the students behaved aggressively towards their teacher or peers. Students who felt happy about their school and their academics showed significantly lower aggression. Students who answered that they were bored in their classes and felt put out by their teachers also described

themselves as involved with fights. Reis and colleagues asserted, “It is also evident that schools may contribute to these behaviors in the way they are organized, the way they treat youth, and even the instructional methods that are used” (Reis et al., 2007, p. 18).

Teacher Attributes and Classroom Behavior

In 1993, Pedulla et al., designed a study that obtained teachers’ opinions about the extent to which classroom practices and lessons were directly affected by state testing mandates. They hypothesized that teachers felt the primary impact of state testing and the stakes involved regarding accountability as related to testing for student achievement. Teachers were asked to respond to 80 survey items that were written in the form of questions and or statements regarding state mandated high-stakes testing programs. Teachers who taught in states whose programs carried higher risks for students based on achievement and accountability reported feeling more pressure than those teachers whose state testing programs were not as rigorous. These teachers responded that they felt more pressure to prepare students for the test, to align their lessons and content to the state test, and to engage in more test preparation activities throughout the year. Teachers specifically mentioned that they had chosen not to devote as much instructional time or preparation to subject areas not tested on the state examination.

Teachers play a primary role in fostering the climate within their classroom. Students’ views of testing could have been greatly influenced by their teachers’ needs and personal reactions towards standardized testing and testing programs (Shepard, 1991). With teachers consistently reporting high opposition toward testing, their attitudes may have great influence over their students’ feelings and beliefs about testing.

Schwarzer (1984) believed teachers' observable behavior, evaluation philosophy, and student interaction were major variables associated with students' test anxiety.

Armstrong (2006) believed that there were two different languages and correlating perceptions used in schools. These two academic languages he has identified as "academic achievement discourse" and "human development discourse." Academic achievement discourse has been primarily associated with testing, mastery of standardized skills, and other concepts that deal with the belief that to close the "achievement gap" teachers and administrators must structure school lessons, select and use textbooks, prioritize classroom schedules, and create an emphasis on testing so that all schools are the same and the instruction happening at the school site is the same across the board. Human development discourse was primarily concerned with using the psychological research available on human development and connecting it to the structure of teaching and learning at each developmental stage to increase each individual child's potential and service each individual child's needs. Armstrong (2006) used the verbiage or language approach to show the reader that the true goal of educational leaders was immediately apparent by the wording that they use in their discussions on education. He suggested that the language used can indicate the educational perspective of the state, school district, or school site, yet he maintains that it is more important to identify the type of relationship between the teacher and the student to truly solidify the educational perspective of the state, school district, or school site. These relationships reflected at the core what approach was deemed superior. When schools, school districts, and states emphasized student educational success solely by quoting high stakes testing data they

were clearly using the language of academic achievement discourse and have cemented that goal throughout their programs.

The interaction or relationship between the students and the teacher could have been a portal in which one could see the teacher's or educational institution's basic fundamental educational beliefs. Human development discourse and educators' goals required a particular type of relationship when it comes to student and teacher. This relationship was dependent on the cognitive stage/age of the student. All of these relationships were embedded in a single approach, which deems the process to be of more importance than the result. On the other hand, academic achievement discourse, whether it be in kindergarten or in 12th grade, applied the same relationship between the teacher and students. The students were to observe and absorb the information in an artificial setting and the teacher is to conduct the lesson in a deliberate, scripted format to ensure that all benchmarks are addressed. This could only be evaluated through testing, making the end result—not the process—the ultimate goal and decision making element. With teachers being pressured to follow scripted curriculum and prioritize tests taking skills the teacher's initial goals of making students life-long learners recede and the true goal becomes having the students pass a high-stakes test.

Armstrong (2006) warned about the perils of intertwining a school's mission with high stakes testing. Armstrong believed that it is this shift in goals, from humanistic to academic achievement, reflected in the classroom climate and teacher/student relationship that is causing major internal and external student conflicts. Emphasis on testing, rather than developmentally appropriate strategies for students, fuels conflicts and adds to the stress that students face.

Students were not the only ones exhibiting stress-like behaviors from the enforcement of academic achievement discourse. Armstrong recognized that the number of teachers leaving the field has a positive correlation with the number of teachers reporting burnout. This was likely due to the fact that they had less control of their classroom curriculum along with the undeniable fact that educators are being pressured by administrators, district members, and state officials to produce data that documents that their students are performing at level. Armstrong (2006) suggested that students are vigilant of the fact that teachers are disempowered and that the curriculum revolves around goals that are not synonymous with their own. In essence, the disempowerment of the teachers was directly disempowering the main stake-holders, the students. He believed that because students and teachers lack control of the academic situation, both parties exhibited behaviors of frustration and aggression. Students were more likely to disrupt the classroom and teachers were more likely to hold a zero-tolerance policy in order to cover the required material over the course of a school year. Students were expected to take part in all test preparation activities, and those who attempted to sabotage these efforts were removed from the classroom. Schools did not take the stance that to discipline was to help the student learn from and deal with their emotions and or feelings about the world around them. With little time and resources dedicated to character development, the cycle of misbehavior was reinforced until the student finishes school or was deliberately taken out of the school. Human Development Discourse would use the misbehavior as an opportunity to peer into the student's viewpoint and provide support and assistance to the student in order to help them cope and become active learners. Armstrong (2006) suggested that schools shift the focus from looking at

overt behaviors to determining the antecedents of particular behaviors. If test anxious students engaged in escape behavior as a “self-protective” tool and used it to immediately lessen any pressure, anxiety, or arousal experienced prior to, during, or after the completion of an assessment as Green (1987) suggested, then by finding the root cause of the behavior one could have assisted the student and or teacher in finding a solution to the problem and discontinued the reinforcement of the behavior. Armstrong (2006) has also found that students who are engaged in creative thinking projects and lessons are less likely to respond with negative behavior.

Armstrong (2006) expanded on the belief that schools shape students. With the majority of their waking time spent at school and dedicated to school activities, students begin to reflect the values of what they witness day in and day out at the school sites. If schools emphatically focused on competition, testing, and only minimally on creative experiences, that was what our students would take with them and use in other settings in their adult life. This high-stress stance did not allow for much self-actualization and could have caused future interpersonal and intrapersonal problems such as aggression, suicide, and mental illness. On the contrary, if schools were to become dedicated to educating students to be active learners, creative thinkers, problem solvers, and dynamic participants, then that would be what they would personify upon completing their schooling. These students would be able to make connections with their neighbors, identify and quench their personal needs and the needs of those around them.

With the push on data driven-instruction, hard test data from previous tests or current assessments were the most important sources that teachers used in order to obtain information about their students. This information was generally used by teachers to

evaluate and form their own expectations of their students (Zeidner, 1992). It was also used by school administrators to shape the performance expectations of the teacher. These expectations highlighted for the students what should have been focused on during their time in the teacher's classroom and when studying at home. Hill (1976) found that these expectations shape the way teachers interact with students who were identified as test anxious and who were also performing poorly on examinations.

Teachers generally utilized less constructive social interactions, instructional strategies, and classroom management techniques with these low performing, anxious students. More importantly, Hill (1976) found that these students also interpreted the interaction with their teacher differently from the low-test anxious students in the same classroom. The students who suffered from test anxiety were found to react with higher sensitivity to the teacher's cues. The cues given by the teacher might then have influenced the students' self-perception of their own academic abilities. Teachers themselves were under pressure from administrators and district supervisors to have their students perform well on state-mandated tests. Some teachers may not have unconsciously diverted this pressure onto their students. These teachers may or may not understand the effects of the added pressure on the student. Their pressure may have been one of the causes for student inability to perform on these tests (Mulvenon, Connors, & Lenares, 2001). Steward, Steward, Blair, Jo, and Hill (2008) also noted that if students deemed the teacher's academic expectations as too challenging or complex they may have exhibited higher levels of absenteeism than they would have if they found teacher expectations to be easier to meet.

Effects of Testing on Society

High-stakes testing has increased an artificial relationship not only between educators and their students but also between other important stakeholders such as parents or other community members and educational institutions. Through academic achievement discourse and testing focused language, schools have shifted their attention from students to scores. Student achievement has not been referred to in terms of personal or academic growth but rather has been described in terms of mastery of a mandated test. The media's attention to standardized testing and test scores only further highlighted and encouraged schools to prioritize high-stakes testing efforts rather than critical thinking and student-centered learning. The media reported to the public regarding the effectiveness of the instruction at a particular school by reporting test scores, yet this evaluation of the education happening at the particular school site is superficial, based only on one factor, and not supported by any first-hand experience viewed by the reporters. The media's coverage also encouraged the school sites to structure their interaction with parents and the community in terms of testing and achievement measured by testing. Testing data cannot account for the complexities of a school site or school system, yet the spewing of testing data has not only labeled schools but more importantly has acted as an instrument of manipulation and domination of schools, educational decisions, and goals in general. The school site, unknowingly, has been controlled by the media and the images it portrays. Students become de-humanized as school districts, school sites, and educators view students in terms of achievement levels or scores on the states' high-stakes tests. Armstrong (2006) described in depth the amount of attention placed on these academic achievement images and warns that schools

that base their instruction solely on test scores do not target all the academic, personal, and social experiences that students should have while at school.

With technology making it possible to continuously evaluate schools, the school site is also controlled continuously and simultaneously through the reporting of the data. This is desirable for those schools that continuously perform well on state tests and undesirable for those who do not, yet its unauthentic approach shifts the focus from the student to the student's image which in most cases is the reporting of the student's achievement scores on state tests. Parents, school sites, and the media have access to these scores immediately after they are scored and processed. At the very core, the publication of the students', schools', or school districts' scores are meant to legitimize the educational shift to standardized testing, standardized based curriculum, and test preparation. This reporting of the data also "pits" educational institutions against each other. There is no doubt that some schools are better than others, yet there is a problem with basing the ordinal categorizing of schools solely on their reported test scores. Politicians, parents, and journalists have drawn conclusions about a school or district solely based on one facet. A school's curriculum, teachers, and students are rated only on this criterion. The curriculum and teachers then focus the majority of instruction on test preparation in order to be seen. This focus on test preparation offers an unauthentic simulation of what students should know and be aware of in order to succeed in society.

In Florida there are huge disparities in the freedoms that different schools have based on their varied school grades and whether or not they have met Adequate Yearly Progress using the state's formula (Florida Department of Education, n.d.). If they have had a good school grade and have made AYP then the schools are basically left to choose

the curriculum, instructional materials, after school programs, and disciplinary procedures. Schools that did not make AYP were provided a scripted curriculum, were forced to use the district-approved textbooks, and were not allowed to bring in other supplementary materials unless they target tested information and test preparation. They must have offered supplemental instruction in the form of before school, after school, or Saturday school tutoring, must have strict disciplinary codes and are constantly being warned that if improvement is not shown the staff will be moved and or the school will be closed down. Schools with few mandates could have then in theory have had less test preparation and simulation and fewer students who were exhibiting negative behaviors associated with the testing.

Conclusion

With a very large proportion of the U.S. student population taking high stakes examinations, schools, school districts, and states have felt the pressure to show that they have taken responsibility for the quality of education that students are receiving. These institutions have been monitored thoroughly and identified individually based on an analysis of whether the individual schools and subgroups within the school have met adequate yearly progress. States have the freedom to choose their standards but federal funding has been tied directly to the test scores that measure achievement of the standards. With the curriculum revolving around testing and test preparation, students more than ever are exposed to evaluative situations. Schools use frequent testing of the standards to build a repertoire of data that can be used to determine mastery of the state standards. School administrators, teachers, parents, and local news stations have constantly reminded students about the importance of testing well and the stakes

involved. Testing pep rallies, before/after school tutoring programs, and Saturday school are further reminders, outside of the daily classroom schedule, of the assessment and emphasis on test preparation. Students may not be aware that the anxious feelings that they are experiencing before, during, or after their testing situation may well be test anxiety. To avoid anxiety, students may inadvertently elicit behaviors that will allow them to escape the testing environment. With research on test anxiety peaking in the 1980s, current research has been needed to evaluate whether or not testing is associated with students' behavior while at school. This research was undertaken to determine whether or not a relationship existed between school grades, an indicator of pressure to perform well on state mandated tests, and escape behaviors.

Hypotheses

Therefore, I hypothesized should one use Pavlov's (1920) and Skinner's (1950) classical conditioning approach and Woolfolk's (2001) example of negative reinforcement, a relationship between the student escape behaviors and school grade would be found. I hypothesize that suspensions in each of the the 2005-06 and the 2008-09 school years would be highest in the quarter in which most of the FCAT preparation takes place for high schools.

Lazarus (1991) also suggested that it would be appropriate to hypothesize that anxiety and emotionality would be highest in the environment when the student has an enhanced level of continuous and repeated exposure to the emotion-inducing situation. Using Zeidner's (1995) theory that a repeated cycle of anxiety and negative behavior as a result of the anxiety could be continually triggered by the students' perception of the threat of the examination, I hypothesized that students at C schools who are at the cusp of

Yerkes and Dodson's Inverted-U and who have more exposure to test simulation and test preparation were more likely to have higher instances of suspensions and absences than those students who are not required to take part in much test preparation (A and B schools) and those who have the same or more requirements (D, and F schools). Students at C schools could have also felt more insecurity than either students at A schools or F schools. A school's students could have also felt more secure about their achievement on tests and students at F schools could have also felt that achievement on tests was beyond their control, no matter how much preparation they participated in.

A higher level of occurrence of these negative behaviors at schools with increased pressure in this study would also support Pavlov's (1920) and Skinner's (1950) behavioral approach to understanding student behavior. Whitaker, Sena, Lowe, and Lee's (2007) study also suggested that high school students have more to lose academically than middle or elementary students by performing poorly on the high stakes assessment, which are graduation requirements, and were thus more prone to escape behaviors such as lashing out or being removed from the environment.

CHAPTER III

METHODS

This chapter begins with the research questions that will be explored, information regarding the schools that will be used as the sample units of study, and the variables that will be analyzed. The design of the study, data collection, and data analysis procedures are included at the end of this chapter as well.

Research Questions

The research questions and hypotheses that guided the study are as follows:

1. Is the number of suspensions highest in the third quarter, when most FCAT preparation takes place for each of the 3 school years 2007-08 through 2009-10?
2. How accurately does the high school's grade predict the number of suspensions and number of absences during each of the 4 school years 2005-06 through 2008-09?

Sample

Miami-Dade County Public Schools (M-DCPS) is a public school district serving Miami-Dade County, Florida. Founded in 1885, it is the largest school district in the state of Florida and the fourth largest in the United States (U.S. Department of Education, National Center for Education Statistics, Common Core of Data [CCD], 2010). The district had an enrollment of 348,207 as of February 2014. Of the total number of students in 2010 enrolled in this public school district, 106,267 were high school students. At the high school level, 28,106 students were listed as ninth graders, 27,424 as 10th graders, 25,937 as 11th graders, and 24,800 as 12th graders. Miami-Dade was also the

second-largest minority-majority public school system in the country, with 68% of its students being Hispanic, 23% Black, 8% Non-Hispanic White, 1% Asian or Pacific Islander and less than 2% of other racial/ethnic minorities in February 2014. In terms of sex, the student population is almost equal with 51% boys and 49% girls. The school district of Miami-Dade encompasses all of Miami-Dade County geographically.

Whereas the above data are the averages of the district, the individual high school subgroup membership could be dramatically different due to differences in the regional and neighborhood populations that the school services. For example, the percentage of Hispanic students at the high school level ranged from 95% at Miami Senior High School to 4% at Miami Norland Senior High School. Similar disparities were found with the percentage of Black students at the high school with ranges from 96% at Miami Norland Senior High School to 1% at Southwest Miami Senior High.

In order to get an accurate perspective of the trends throughout the county, this study examined 33 of the senior high schools that are part of the Miami Dade County Public Schools district. All five regions of the school district were represented in this sample. This purposive sample included only schools that met the following criteria: The individual school must have at least four years of suspension, attendance, and state testing data. No charter or school-wide magnet schools were included in the sample. Charter schools were not utilized because they do not adhere to the same behavior policies and procedures as delineated in the student and parent handbook created by Miami-Dade County Public Schools. Thus, they could have had an above average or below average number of suspensions based on their individual policies and would then bias the data. School-wide magnet programs were not used as many have high academic

and behavior entrance criteria and would have swayed the data. Opportunity schools were not be utilized because the student population at these schools usually includes a high number of students who have had behavioral issues at previous school sites. All other public high schools located in Miami-Dade County were used in this study. The population of interest in this study was all 33 regular high schools in MDCPS.

Variables

Pressure

The inverted-U hypothesis of catastrophe theory has been used by many researchers to compare the anxiety or pressure to perform on an individual student during an evaluative situation (Beattie & Woodman, 2007; Hardy, Parfitt & Pates, 1994; Parfitt, 1991). In this research this same theory was used to examine anxiety and behavior not at the individual student level but at the school and district level. The pressure that the state places on schools regarding academic progress in the form of achievement on the state mandatory, high-stakes tests can be strikingly different from school to school. This state or political pressure is transferred from the top down with this pressure felt preliminarily at the district level. The superintendent and district supervisors then transfer this pressure to school site administrators; these administrators pressure their teachers and other instructional staff members, who then finally pressure the students. The inverted-U hypothesis of the catastrophe theory has been based on the assumption that in order to avoid complacency some schools need pressure placed on them in terms of increasing or maintaining the instructional rigor and that the pressure increases student achievement up to a point. Yet, the pressure to perform well has not been distributed evenly across the state or school districts and has concentrated on schools that continuously achieve a grade

of low C, D, or F. So, the variable *pressure* was operationalized as the letter score obtained by the school which is due, in large part to students' scores on the FCAT.

Escape Behaviors

Theoretically, the need to escape results in aggression and negative behavior can result in absenteeism or suspension. The variable *escape behaviors* was operationally defined as the number of out of school suspensions and absences at the school site.

Research Design

The research design is described in three parts: The research objective, the data collection techniques, and the data analysis techniques. This ex post facto research objective was predictive and secondary data were used.

Predictive Research Objective

This research was ex post facto as the researcher looked back at behaviors such as suspensions and student absences that have already occurred. This researcher was interested in inferences that could be made about relationships between the degree of pressure placed on students as a result of testing and state mandates and escape behaviors exhibited by students.

This study did not seek to find causation between test preparation and test simulation activities and negative behavior. It sought to determine whether there was a relationship between the two variables and whether the level of pressure, exerted by the state's school grading scale, had an inverted-U shaped relationship to the number of suspensions and absences at a particular school site. An inverted-U relationship would suggest that A schools and F schools would have similar numbers of suspensions and absences because they have received both the lowest and highest amount of pressure and

that the number of absences and suspensions should have been low at both A and F schools. This also suggested that C schools should have had the highest reported number of suspensions and absences because they were located on the cusp of the inverted-U and are subjected to an average amount of pressure from the state and school district.

Secondary Data Collection

The use of quantitative data to suggest trends in an educational setting has been recommended by researchers Bogdan and Biklen (2007). They advocated that quantitative data, as in the calculation of the number of suspensions or absences, can do more than numerically portray the phenomena but can also change how one sees or experiences the phenomena of interest. Data, numbers in particular, never stand alone. These numbers are related to some context or phenomena in which they are reported. The number of suspensions and absences was reported by Miami Dade County Public Schools and is available to the public online at the Florida Department of Education's website (<http://www.fldoe.org>). For research question #1, 3 school years 2007-08 through 2009-10 were analyzed. For research question #2 the 4 school years 2005-06 through 2008-09 were analyzed. Though all years analyzed in both research questions are within the first generation Sunshine State Standards and FCAT, the exact same years of data were unavailable and were thus a limitation of the study.

Data Analysis

For research question 1 the distribution of out of school suspensions was used. For this research question, the school year was separated into four grading periods and number of suspensions at each school site collected and tallied by quarter. It was analyzed using chi-squared for goodness of fit to determine which quarter of the school

year the most suspensions occur in the school district as a whole. This was done for all three years of data individually. Should the utilization of test preparation and test simulation activities have a strong relationship to negative behaviors such as suspensions and absences, then the number of suspensions and absences should be higher during the third grading period immediately before the administration of the state's high stakes assessments and during the schools' last efforts to expose students to high levels of test simulation and test preparation. The amount of pressure applied by the state and school district on a school could have also been considered during data analysis, because schools with low levels of pressure do less test preparation and test simulation than those schools that are under more pressure and mandated by the school district to do more test preparation and test simulation activities. These low performing schools must also expose their students to longer school days and longer school weeks to imbed such test preparations and test simulation activities as mandated by the state and documented in their school improvement plan (Florida Department of Education Bureau of School Improvement, 2012).

For research question 2 a multiple regression analysis was conducted. This study used a non-linear multiple regression for research question 2 to determine whether the two criterion variables, suspensions and absences, can be accurately predicted by the school's FCAT grade when controlling for socioeconomic status and race/ethnicity. Two individual regressions were carried out and the dependent variables for each were the frequency of suspensions and the number of absences during the school year. A significance test was conducted to evaluate whether the school's FCAT grade is useful to predict the school's suspension and absence count for each of the 4 years. The schools'

socio economic status (SES) and membership by ethnicity was also evaluated in the non-linear multiple regression to determine whether the pressure on the school, as indicated by the school grade, was predictive of the criterion variables and independent of the SES concomitant variable. SES status was determined to be low if the school qualifies for Title I funding as a result of a high percentage of students who qualified for free and reduced lunch. Membership by race/ethnicity was controlled for because previously mentioned research indicates that Black and Hispanic students have been observed to respond differently during testing situations (Conway, 1973; Lipman, 2003).

Chapter Conclusion

The understanding of the phenomena was based on the data. The analysis of the data allowed the researcher to further clarify, develop, or validate the inverted-U hypothesis of catastrophe theory that emerged from the data analysis. By studying multiple cases the researcher identified similarities and differences between the cases. The use of multiple school sites allowed not only for the emergence of a pattern, linear or curvilinear, but the ability, to identify typical high school phenomena and generalize the results of this study to other similar urban high school in other school districts. The selection of a large sample of high schools from all regions of the school district and whose subgroups may be strikingly different from one another allows for generalizability.

The number of suspensions or absences is related to some context or phenomena in which it is reported. The increase or decrease in the numbers was dependent on how the people who compile the absences or request a student to be suspended defined each of the phenomena and the specific actions involved at that specific time. Changes in these numbers may not have suggested causation, but may have suggested that the school site

has heightened or lowered its focus on these areas and thus the data corresponds with spikes and drops.

CHAPTER IV

RESULTS

This chapter presents the answers that were obtained by the data analysis concerning the three research questions. The questions were answered using repeated measures analysis of variance (ANOVA) and non-linear multiple regressions for questions #1 and #2, respectively.

Research Question #1

Research Question #1 asked, “Is the number of suspensions highest in the third quarter, when most FCAT preparation takes place, for each of the three school years 2007 – 2008, 2008 – 2009, 2009-2010 and across these three school years?” The outcome information for each of the academic years follows.

The 2007 – 2008 Academic Year

The 2007 – 2008 academic year data consisted of the means of the number of students in each of 33 high schools who were suspended in each of the four quarters of the year. Table 2 presents the weighted means and the standard deviations of the suspensions for each quarter across the 33 schools.

Table 2
Suspensions for the 2007 -2008 Academic Year (N = 33)

Academic Quarter	Mean	Standard Deviation
1 st Quarter	245.91	148.06
2 nd Quarter	353.21	223.02
3 rd Quarter	323.55	219.42
4 th Quarter	267.48	176.53

The null hypothesis $H_0: \mu_1 = \mu_2 = \mu_3 = \mu_4$ was tested against the alternative that at least one pair of the population means were not equal using a repeated measures analysis of

variance (ANOVA). The outcome was $F(3,30) = 8.38, p < .001$ with an effect size of $\eta^2 = .456$. The 95% CIs were [193.41, 298.41], [274.14, 432.29], [245.74, 401.35], and [204.89, 330.08], for quarters 1 through 4, respectively. This indicated that the null hypothesis could be rejected and that there was at least one pair of quarters that could be expected to have different population means. Further, it is notable that the quarter of the academic year from which the data were taken accounted for over 45% of the variance of the mean number of suspensions. This is a particularly strong effect size.

In order to determine which pairs of means were different pairwise comparisons were carried out using a Bonferroni adjustment for multiple comparisons. The results of these tests are shown in Table 3.

Table 3
*Pairwise Comparisons for the Mean Number of Suspensions
 in Each Quarter (2007-2008)*

Quarter A	Quarter B	Mean A – Mean B	<i>p</i>	95% CI of (Mean A – Mean B)
1	2	-107.30*	<.001	-167.54, -47.07
1	3	-77.64*	.047	-154.56, -0.71
1	4	-21.58	>.999	-80.27, 37.12
2	3	29.68	.941	-27.89, 87.22
2	4	85.73*	.003	22.80, 148.65
3	4	56.06	.053	-.44, -112.57

* The differences of the means of quarters A and B are significant at the .05 level.

These findings can be summed up as indicating that the mean number of suspensions in the first quarter was lower than the mean number of suspensions in the second and third quarters, while it was not different from the mean number of suspensions in the fourth quarter. The mean number of suspensions in the second quarter was higher than the mean number in the fourth quarter. All other pairs of means were not significantly different. Given these relationships, the fact that the only significant contrast observed

when testing for linear, quadratic, and cubic contrasts is the quadratic contrast, $F(1,32) = 21.234, p < .001$ and that this contrast has an effect size of $\eta^2 = .399$. The highest mean number of suspensions occurred during the 2nd and 3rd quarters. This finding is consistent with the notion of a relationship that can be expressed as an inverted U.

The 2008 – 2009 Academic Year

The same 33 high schools' suspension data were analyzed using the 2008 – 2009 academic year data. The weighted means as well as the standard deviation of the number of students suspended per each of the four academic quarters are presented in Table 4.

Table 4
Suspensions for the 2008 -2009 Academic Year (N = 33)

Academic Quarter	Mean	Standard Deviation
1 st Quarter	204.33	145.14
2 nd Quarter	311.52	208.85
3 rd Quarter	347.36	253.97
4 th Quarter	311.76	203.60

The null hypothesis $H_0: \mu_1 = \mu_2 = \mu_3 = \mu_4$ was again tested against the alternative that at least one pair of the means of the academic quarters were not equal using again an ANOVA for repeated measures analysis. The outcome of the ANOVA for the 2008 – 2009 academic year was $F(3,30) = 15.62, p < .001$ with an effect size of $\eta^2 = .610$. The 95% confidence intervals for this set of data, each of the four quarters, were [152.87, 255.80], [237.46, 385.57], [257.31, 437.42], and [239.56, 383.95]. Again the data indicated that the null hypothesis could be rejected for at least one pair of the academic quarters' means. The effect size for the variance much like the previous scholastic year was particular strong at 61%.

The Bonferroni adjustment for multiple comparisons was used to identify the pairs of means were found to be significantly different. Table 5 highlights the results of these statistical tests.

Table 5
Pairwise Comparisons for the Mean Number of Suspensions in Each Quarter (2008-2009)

Quarter A	Quarter B	Mean A – Mean B	<i>p</i>	95% CI of (Mean A – Mean B)
1	2	-107.18*	<.001	-150.52, -63.84
1	3	-143.03*	.001	-210.43, -75.63
1	4	-107.42*	.001	-172.79, -42.06
2	3	-35.85	.141	-78.25, 6.55
2	4	-.24	>.999	-57.30, 56.82
3	4	35.61	.52	-21.06, 92.28

* The differences of the means of quarters A and B are significant at the .05 level.

The findings for quarter one for the 2008 – 2009 school year are similar to the findings in the 2007 – 2008 school year in that the mean suspensions in the first quarter are lower than the mean number of suspensions in both the second and third quarters. Additionally in the 2008 – 2009 data the mean suspensions in the first quarter were also lower than in the fourth quarter. All other means for this academic year’s suspension data were found to not be significantly different. The mean numbers of suspensions were almost identical in the second and fourth quarter. When testing within-subjects contrast testing for linear, quadratic, and cubic contrasts found that both the linear contrast $F(1,32) = 20.964$, $p < .001$ with an effect size of $\eta^2 = .396$ and the quadratic contrast $F(1,32) = 23.654$, $p < .001$ with an effect size of $\eta^2 = .425$ were found to be significant.

The 2009 – 2010 Academic Year

The mean numbers of suspensions per each of the four academic quarters were again analyzed for the 2009 – 2010 school year. The same 33 high schools were again used and their weighted means and standard deviations can be found below in Table 6.

Table 6
Suspensions for the 2009 -2010 Academic Year (N = 33)

Academic Quarter	Mean	Standard Deviation
1 st Quarter	265.97	209.92
2 nd Quarter	359.03	254.64
3 rd Quarter	378.03	266.00
4 th Quarter	267.30	180.71

The null hypothesis $H_0: \mu_1 = \mu_2 = \mu_3 = \mu_4$ was again tested against the alternative hypothesis that one or more pairs of these quarterly suspension means are not equal when using a repeated measures ANOVA. The outcome for this academic year's suspension data was $F(3,30) = 9.04, p < .001$ with an effect size of $\eta^2 = .475$. The 95% CIs were [191.53, 340.41], [268.74, 449.32], [283.71, 472.35], and [203.24, 331.38], for quarters 1 through 4. The effect size for the third year in a row is quite strong at 48%.

A Bonferroni adjustment was conducted for the 2009-2010 suspension data to determine the difference between the pairs of means. The results of the Bonferroni pairwise comparisons are found in Table 7. Contrast was tested to determine if a linear, quadratic, or cubic relationship was found to be significant between the mean suspensions per quarter.

Table 7
*Pairwise Comparisons for the Mean Number of Suspensions
in Each Quarter (2009-2010)*

Quarter A	Quarter B	Mean A – Mean B	<i>p</i>	95% CI of (Mean A – Mean B)
1	2	-93.06*	<.001	-153.58, -32.54
1	3	-112.06*	.011	-205.03, -19.09
1	4	-1.33	>.999	-81.27, 78.61
2	3	-19.00	>.999	-79.52, 41.52
2	4	91.73*	.009	17.49, 165.97
3	4	110.73*	<.001	48.32, 173.13

* The differences of the means of quarters A and B are significant at the .05 level.

Again for the third year a quadratic relationship was found and it was the only relationship to be significant, $F(1,32) = 28.174, p < .001$. Much like the 2007 – 2008 data, the second and third quarters had the highest mean number of suspensions and could again be expressed by an inverted U relationship.

Research Question #2

Research Question #2 asked, “How accurately does the high school’s grade predict the number of suspensions and number of absences during each of the 4 school years 2005-06 through 2008-09?” The outcome information for each of the academic year follows.

Multiple regression procedures were carried out to determine the proportion of the variance of the mean proportion of students attending school throughout the school year and the mean number of in-school suspensions at schools during the school year that could be accounted for by a school’s grade when the mean proportion of Black students, the mean proportion of Hispanic students and the mean proportion of students from low socioeconomic homes in the schools are controlled. Further, since it is assumed, based on the literature, that the relationship between school grade (used here as a proxy for

level of stress in students and teachers) and both attendance rate and suspension rate are quadratically related, the squares of these four controlling variables were also entered into the regression equation as control variables.

Table 9
Predictors of School Attendance for Academic Year 2005 – 2006

Findings From the 2005-2006 Academic Year

The descriptive statistics for the 2005 – 2006 academic year are reported in Table 8. Keeping in mind that the unit of sampling was the high school, this table represents statistics of data aggregated by school for each of the 33 schools. Therefore, the sample size is $N = 33$ for each of these statistics.

Table 8
Descriptive Statistics for the 2005 -2006 Academic Year

Variable	Mean	SD
Attendance percent	92.06	2.15
Number of suspensions	1005.94	522.28
School grade squared*	4.70	4.21
Proportion Black students	.33	.32
Proportion Hispanic students	.57	.29
Proportion students from low SES homes	.53	.14
Proportion Black students squared	.20	.30
Proportion Hispanic students squared	.41	.31
Proportion Students From low SES homes squared	.30	.15

*Note: The school grade was converted from an alphabetic value to a numeric value using the conversions A = 4, B = 3, C = 2, D = 1, and F = 0.

Predicting Attendance Rates in the 2005-2006 Academic Year

A hierarchical multiple regression analysis was carried out using the attendance rate as the dependent variable and the other variables in Table 8 as the predictors.

Variables were entered in three groups. The first group consisted of the three control variables, the second of the squares of the three control variables, and the third as the school grade. Table 9 shows the result of this regression. A brief explanation of this table

Variable	Attendance			
	Model 1B	Model 2B	Model 3	
			B	95% CI
Constant	93.046	94.952	88.361	78.206 to 98.516
Percent Black students	3.105	9.018	6.288	-13.331 to 25.907
Percent Hispanic students	5.347	-10.578	-7.883	-45.369 to 29.604
Percent students from low SES homes	-9.482	.082	15.575	-16.114 to 47.264
Percent Black students squared		-10.720	-7.009	-30.408 to 16.390
Percent Hispanic students squared		11.924	8.882	-18.693 to 36.456
Percent students from low SES homes squared		-8.347	-18.731	-44.982 to 7.520
School grade squared			.286	.098 to .473
R^2	.471	.486	.632	
F	8.594**	4.099**	6.122**	
ΔR^2		.015	.145	
ΔF		4.495	2.023	

Note: $N = 33$

** $p < .01$

may be in order for this and all proceeding regressions. Since the goal is to find the variance accounted for by school grade controlled by the three demographic variables

(the proportion of Black students in the school, the proportion of Hispanic students, and the proportion of students living in low SES homes) and their squares, Model 1 used just the three demographic variables as predictors and Model 2 added the squares of the demographic variables to those of Model 1, resulting in a model with six predictor variables.

The variance accounted for by the variables in each of these models is given on the R^2 line for each of the models. The change in the proportion of variance accounted for by the model between a model and the model that precedes it is given on the ΔR^2 line of the table for each model with the exception of Model 1 because it has no preceding model. The prediction from a regression equation using the predictors in each model is a test for a significant R^2 , which would indicate that there is at least some variance in the dependent variable (attendance or suspension rate, in this study) using an analysis of

variance (ANOVA). The test of the null hypothesis $H_0: R^2 = 0$ yields a value of the F statistic, which is given on the F line in the table for each model. A significant value of F indicates that the predictor variables in each model tested accounts for a non-zero proportion of the variance of the dependent variable (i. e., $R^2 \neq 0$). The ΔF row indicates the change in the value of F between a model and the model preceding it.

The table shows that the first set of control variables account for 47.1 of the variance in the level of school attendance ($R^2 = .471$) and that this proportion is significant (Model 1). When the squared values of these variables are added to the model (Model 2), no significant additional variance can be accounted for. Adding the squared school grade to the model (Model 3) increases the multiple correlation by .145 over Model 2 indicating that squared school grade accounted for an additional 14.5% of the variance of school attendance answering the part of the research question that deals with prediction of attendance. The researcher found that for the 2005 – 2006 academic year, school grade was related to attendance in a *quadratic* relationship over and above the control variables and that the relationship is positive ($B = .286$). This is consistent with the theory suggested by the inverted U. Further, the scatter plot in Figure 1 shows a clear inverted U shape.

While there is some evidence of a quadratic relationship in these data, there appear to be two indicators that this relationship is somewhat small. First, the 14.5% of the variance accounted for by the squared school grade, while significant statistically, is somewhat lower than might be expected from the theory in Chapters 1 and 2 suggests.

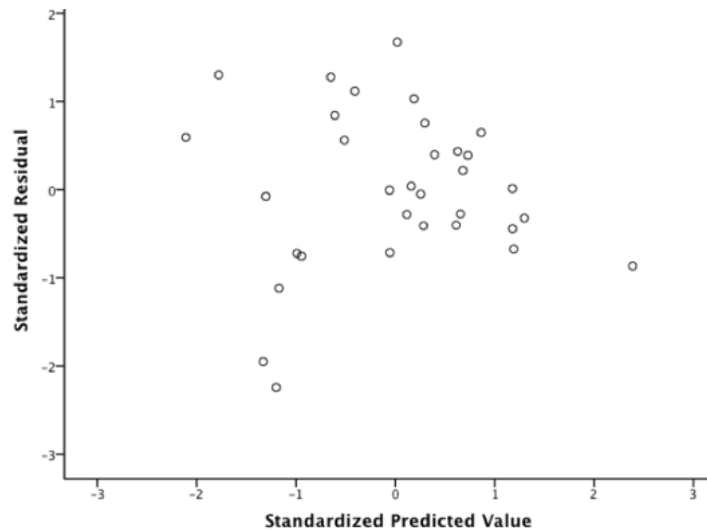


Figure 1 . Scatterplot for prediction of attendance in 2005-2006 data.

In addition, it appears that the squared control variables do not add significant variance to that accounted for by the linear values of the variables. This may be accounted for by the presence of high level of multicollinearity that appears to be present in these data.

Theoretically, the predictor variables used to predict the criterion variable should be independent of each other (have a relationship of $r = 0$ to each other). Multicollinearity is the condition that occurs when the predictor variables are too highly correlated with each other. Its effect is to increase the level of the standard errors of the regression coefficients (B), which results in smaller R^2 s. The variance inflation factor (VIF) is a widely accepted value of multicollinearity. The VIF indicates the amount of the inflation in the standard errors associated with a particular level of B that is due to multicollinearity. For example, a VIF of 6 indicates that the standard errors are 6 times larger than would be the case, otherwise, if there were no inter-correlations between a particular predictor and the rest of the predictor variables. Many authors (e.g., Rogerson,

2001) recommend a maximum acceptable VIF value of 10. In the Model 3 of this regression only the square of the school grade has a VIF of 10 or less ($VIF = 2.156$) while the other predictors' VIF range from 54.053 to 418.795. These very high levels of VIF that indicate high levels of multicollinearity that could very well have resulted in artificially low levels of predictions.

Predicting Suspension Rates in the 2005-2006 Academic Year

A hierarchical multiple regression analysis was carried out using the number of indoor and outdoor suspensions in a school as the dependent variable and the same four predictors as in the previous procedure. As in the previous procedure variables were entered in three groups. The first group consisted of the three control variables, the second of the squares of the three control variables, and the third as the school grade. Table 10 shows the result of this regression.

None of the three models yields a significant prediction of the number of the number of suspensions meted out during the 2005 – 2006 academic year. While it is interesting to note that the proportion of variance accounted for by the prediction variables increases significantly from Model 2 ($R^2 = .163$) to Model 3 ($R^2 = .336$), reflecting the addition of the school grade variable, this increase is not sufficient to result in a significant prediction. For the 2005 – 2006 academic year, the researcher could find no evidence that school grade was related to number of suspensions in any relationship over and above the control variables. It is interesting to note that the value of zero is in the 95% confidence interval for the regression coefficient (B). This indicates that zero is as good an estimate of the corresponding population regression coefficient (β). This

being so, I cannot be 95% confident that β is not equal to zero and that this variable accounts for a non-zero amount of variance in the population from which this sample was drawn.

Table 10
Predictors of Suspensions for Academic Year 2005 – 2006

Variable	Suspensions			
	Model 1B	Model 2B	Model 3	
			B	95% CI
Constant	315.813	765.371	2509.392	-804.211 to 5822.995
Percent Black students	856.071	6055.891	6778.392	376.759 to 13180.025
Percent Hispanic students	1020.656	-6977.152	-7690.255	-19921.972 to 4541.462
Percent students from low SES homes	-319.830	4770.472	670.944	-966.932 to 11010.979
Percent Black students squared		-7248.031	-8229.948	-15865.084 to -594.813
Percent Hispanic students squared		6508.988	7314.055	-1683.610 to 16311.719
Percent students from low SES homes squared		-4868.230	-2120.474	-10686.180 to 6445.232
School grade squared			-75.657	-14.492 to .464
R^2	.027	.163	.336	
F	.267	.846	1.805	
ΔR^2		.136	.172	
ΔF		.579	.959	

Note: N = 33
p < .05

Again it seems to be useful to look at the level of multicollinearity in the model since the prediction variables used for predicting both attendance in the first regression and the level of suspensions are the same for both procedures. Therefore, one can speculate that in this case, as well, that the low R^2 's are due to the high levels of variance inflation present due to multicollinearity.

Findings From the 2006-2007 Academic Year

The descriptive statistics for the 2006 – 2007 academic year are reported in Table 11. Keeping in mind that the unit of sampling was the high school, this table represents

statistics of data aggregated by school for each of the 33 schools. Therefore, the sample size is $N = 33$ for each of these statistics.

Predicting Attendance Rates in the 2006-2007 Academic Year

A hierarchical multiple regression analysis was carried out using the 2006 – 2007 academic year attendance rate as the dependent variable and the seven variables from the school grade squared to the proportion of students from low SES homes squared in Table 11 as the predictors. The variables were entered in the same three groups in the same order as in the 2005 – 2006 analysis. Table 12 presents the results of this regression analysis.

Table 11
Descriptive Statistics for the 2006 -2007 Academic Year

Variable	Mean	SD
Attendance percent	93.30	1.52
Number of suspensions	810.64	415.22
School grade squared*	2.24	2.48
Proportion Black students	.33	.32
Proportion Hispanic students	.57	.30
Proportion students from low SES homes	.52	.15
Proportion Black students squared	.21	.30
Proportion Hispanic students squared	.41	.31
Proportion students from low SES homes squared	.30	.15

*Note: The school grade was converted from an alphabetic value to a numeric value using the conversions A = 4, B = 3, C = 2, D = 1, and F = 0.

The table shows that the first set of control variables account for 33.4% of the variance in the level of school attendance ($R^2 = .334$) and that this proportion is significant (Model 1). When the squared values of these variables are added to the model (Model 2), no significant additional variance can be accounted for. Adding the squared school grade to the model (Model 3) increases the multiple correlation by .231 over

Model 2 indicating that squared school grade accounted for an additional 23.1% of the variance of school attendance over and beyond that of the control variable. This has the effect of the answering the part of the research question that deals with prediction of attendance. The researcher found that for the 2006 – 2007 academic year, school grade was related to attendance in a quadratic relationship over and above the control variables and that the relationship is positive ($B = .455$). This is consistent with the theory suggested by the inverted U.

Table 12
Predictors of School Attendance for Academic Year 2006 – 2007

Variable	Attendance			
	Model 1	Model 2	Model 3	95% CI
Constant	94.602	95.387	91.522	84.189 to 98.855
Percent Black students	1.431	8.928	6.471	-9.206 to 22.148
Percent Hispanic students	2.369	-9.522	-18.864	-48.669 to 10.941
Percent students from low SES homes	-5.976	1.627	27.140	-2.430 to 56.711
Percent Black students squared		-10.664	-13.109	-31.185 to 4.967
Percent Hispanic students squared		9.549	13.245	-8.067 to 34.557
Percent students from low SES homes squared		-7.291	-25.537	-49.454 to -1.620
School grade squared			.455	.208 to .702
R^2	.334	.368	.599	
F	4.856*	2.552	5.326*	
ΔR^2		.034	.231	
ΔF		2.304	2.774	

Note: $N = 33$

* $p < .05$

The evidence for a quadratic relationship between the school grade and attendance rate is somewhat mixed. First, the 23.1% of the variance uniquely accounted for by the squared school represents a rather large effect size according to Cohen (1992). The table shows that the first set of control variables account for a third of the variance in the level of school attendance ($R^2 = .334$) and that this proportion is significant (Model

1). When the squared values of these variables are added to the model (Model 2), no significant additional variance can be accounted for, but adding the squared school grade to the model (Model 3) increased the multiple correlation by .231 over Model 2, as noted earlier. Based on these findings, it can be concluded that, for the 2006 – 2007 academic year, school grade was related to attendance in a quadratic relationship over and above the control variables and that the relationship is positive ($B = .738$). This is consistent with the theory suggested by the inverted U relationship. Figure 2 shows the shape of this relationship.

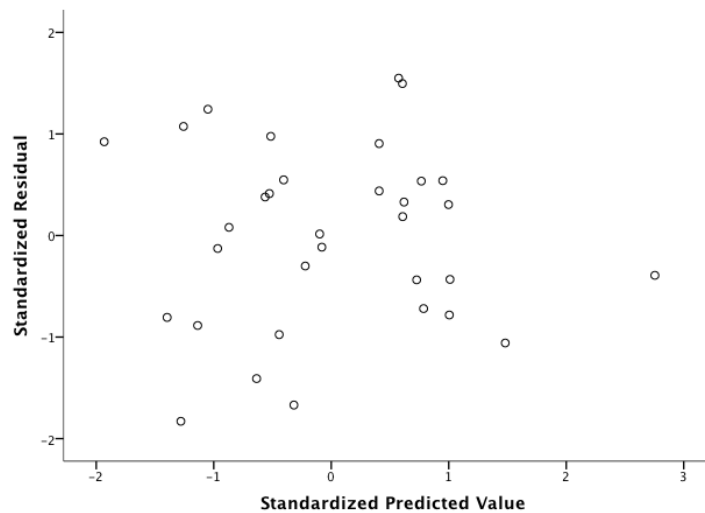


Figure 2. Scatterplot for prediction of attendance in 2006-2007 data.

Additionally, it appears that the squared control variables do not add significant variance to that accounted for by the linear values of the variables. This may be contradictory evidence for the notion of an inverted U-shaped relationship between attendance and these predictors, but it may also be accounted for by the presence of high levels of multicollinearity that appear to be present in these data. The VIF of for the square of the school grade variable ($VIF = 2.364$) is the only predictor variable with a

variance inflation factor that is less than 10. These very high levels of VIF indicate high levels of multicollinearity that could very well have resulted in artificially low levels of predictions.

Predicting Suspension Rates in the 2006-2007 Academic Year

A hierarchical multiple regression analysis was again carried out, this time using the number of indoor and outdoor suspensions in a school as the dependent variable and the same four predictors as in the previous procedure. Predictor variables were entered in the same three groups as in the procedure that looked at absences, using suspension rates as the criterion variable in this analysis. The results may be seen in Table 13.

None of the three models produce significant predictions. It is instructive to note that all the 95% confidence intervals in Model 3, with the exception of the school grade squared contain zero. One then recognizes that the value of these regression coefficients

Table 13
Predictors of Suspensions for Academic Year 2006 – 2007

Variable	Suspensions			
	Model 1B	Model 2B	Model 3 B	Model 3 95% CI
Constant	38.110	561.101	1284.752	-1218.931 to 3788.435
Percent Black students	151.443	2631.507	3091.508	-2260.941 to 8443958
Percent Hispanic students	480.268	-6892.083	-5143.105	-15319.133 to 5032.922
Percent students from low SES homes	859.888	7897.163	3120.454	-6975.605 to 13216.513
Percent Black students squared		-5106.097	-4648.386	-10819.878 to 1523.107
Percent Hispanic students squared		5105.593	4413.592	-2862.806 to 11689.989
Percent students from low SES homes squared		-6278.237	-2862.181	-11027.871 to 5303.509
School grade squared			-85.178	-169.572 to -.783
R^2	.130	.260	.369	
F	1.450	1.521	2.088	
ΔR^2		.130	.109	
ΔF		.071	.567	

Note: $N = 33$

is as likely to be zero as it is to be any other value in the interval for all of the control variables. Values of B that are zero indicate the variables in question have no predictive value. The value of the school grade squared does account for a significant proportion of the variance above and beyond the control variables when testing at the $\alpha = .05$ level of significance ($\Delta R^2 = .109$, $df = 1, 25$, $p = .048$), but this effect size is too small to result in a significant prediction. The researcher must conclude that school grade is not a predictor the number of suspensions for high schools during the 2006 – 2007 academic year. One possible explanation for this is the high levels of multicollinearity among the predictor variables.

Findings from the 2007-2008 Academic Year

The descriptive statistics for the 2007 – 2008 academic year are reported in Table 14. Continuing to keep in mind that the unit of sampling was the high school, this table also represents statistics of data aggregated by school for each of the 33 schools. Therefore, the sample size is $N = 33$ for each of these statistics.

Table 14
Descriptive Statistics for the 2007 -2008 Academic Year

Variable	Mean	SD
Attendance percent	94.14	1.47
Number of suspensions	726.06	352.96
School grade squared*	5.15	5.20
Proportion Black students	.33	.32
Proportion Hispanic students	.57	.30
Proportion students from low SES homes	.57	.15
Proportion Black students squared	.21	.30
Proportion Hispanic students squared	.41	.31
Proportion Students From low SES homes squared	.34	.17

*Note: The school grade was converted from an alphabetic value to a numeric value using the conversions A = 4, B = 3, C = 2, D = 1, and F = 0.

Predicting Attendance Rates in the 2007-2008 Academic Year

A hierarchical multiple regression analysis was carried out using the 2007 – 2008 academic year attendance rate as the dependent variable and the seven variables from the school grade squared to the proportion of students from low SES homes squared in Table 14 as the predictors. The variables were entered in the same three groups in the same order as in the 2005 – 2006 analysis. Table 15 presents the results of this regression analysis.

While it can be seen that each of the three models significantly predicts the rates of attendance rate for the 2007 – 2008 academic year it should be noted that adding the squared control variables in Model 2 does not significantly increase the proportion of variance accounted for by the predictor variable, and hence the strength of the prediction over that of Model 1 ($\Delta R^2 = .072$, $df = 3$, 26 , $p = .401$). However, adding the squared

Table 15
Predictors of Attendance Rates for Academic Year 2007 – 2008

Variable	Attendance			
	Model 1B	Model 2B	Model 3	
			B	95% CI
Constant	95.920	94.842	88.121	80.695 to 95.546
Percent Black students	.717	5.534	12.765	-2.164 to 27.695
Percent Hispanic students	1.521	-8.931	-6.987	-34.364 to 20.391
Percent students from low SES homes	-5.106	12.698	15.305	-6.253 to 36.863
Percent Black students squared		-9.016	-11.211	-28.741 to 6.230
Percent Hispanic students squared		6.691	9.187	-10.852 to 29.227
Percent students from low SES homes squared		-16.003	-16.085	-33.747 to 1.577
School grade squared			.235	.116 to .354
R^2	.314	.386	.631	
F	4.432*	2.730*	6.119**	
ΔR^2		.072	.245	
ΔF		1.702	3.389	

Note: $N = 33$

* $p < .05$ ** $p < .01$

value of the school grades results in an increase of the proportion of variance accounted for in the prediction ($\Delta R^2 = .245$, $df = 1, 25$, $p < .001$). This suggests a quadratic relationship between the attendance rate and school grade. Figure 3 describes this relationship.

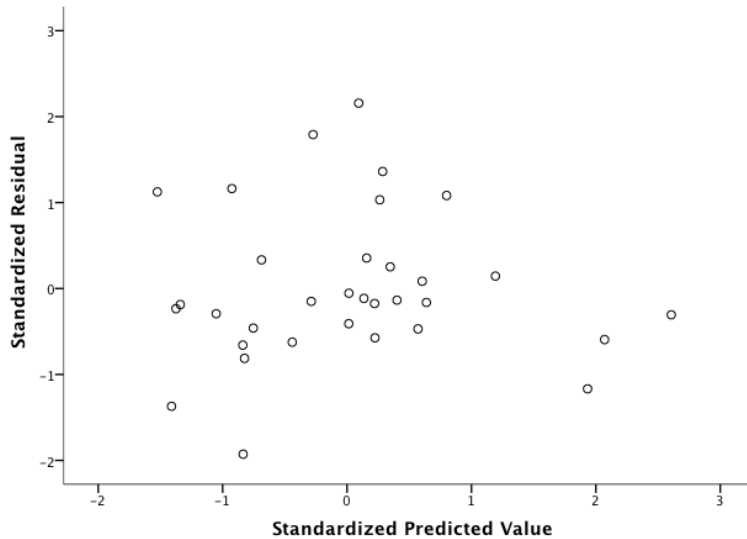


Figure 3. Scatterplot for the prediction of attendance in 2007-2008 data

Predicting Suspension Rates in the 2007 - 2008 Academic Year

A hierarchical multiple regression analysis was again carried out, this time using the number of indoor and outdoor suspensions in a school as the dependent variable and the same four predictors as in the previous procedure. Predictor variables were entered in the same three groups as in the procedure that looked at absences, using suspension rates as the criterion variable in this analysis. The results may be seen in Table 16.

None of the three models accounted for a significant portion of the variance in the number of suspensions handed out to students during the 2007 – 2008 school year.

It was noted that adding the school grade to the three control variables and their squares did, in fact, account for a significant gain in the value of R^2 between Models 2 and 3

Table 16
Predictors of Suspensions for Academic Year 2007 – 2008

Variable	Suspensions			
	Model 1B	Model 2B	Model 3	
			B	95% CI
Constant	22.706	442.713	1865.628	-548.424 to 4279.681
Percent Black students	274.404	1530.864	.006	-4853.587 to 4853.599
Percent Hispanic students	664.067	-4007.636	-4419.220	-13319.843 to 4853.402
Percent students from low SES homes	296.438	4621.270	4069.402	-2939.222 to 11078.026
Percent Black students squared		-2776.600	-2312.011	-8011.235 to 3387.213
Percent Hispanic students squared		3123.765-	2595.287	-3919.725 to 9110.299
Percent students from low SES homes squared		-3656.171	-3638.798	-9380.824 to 2103.299
School grade squared			-49.753	-88.354 to -11.152
R^2	.075	.130	.321	
F	.783	.649	1.692	
ΔR^2		.055	.191	
ΔF		.134	1.043	

Note: $N = 33$

($\Delta R^2 = .191$, $df = 1$, 25 , $p = .014$), but this was not sufficient to produce a significant prediction ($R^2 = .321$, $df = 7$, 25 , $F = 1.692$, $p = .157$). The significant change in the coefficient of determination upon the addition of the squared school grade suggests that a weak quadratic relationship could possibly exist between school grade and school grade.

Findings from the 2008-2009 Academic Year

The descriptive statistics for the 2008 – 2009 academic year are reported in Table 17. Continuing to keep in mind that the unit of sampling was the high school, this table also represents statistics of data aggregated by school for each of the 33 schools.

Therefore, the sample size is $N = 33$ for each of these statistics.

Table 17
Descriptive Statistics for the 2008 -2009 Academic Year

Variable	Mean	SD
Attendance percent	93.49	1.69
Number of suspensions	681.88	314.87
School grade squared*	4.73	4.84
Proportion Black students	.33	.32
Proportion Hispanic students	.57	.30
Proportion students from low SES homes	.60	.15
Proportion Black students squared	.21	.31
Proportion Hispanic students squared	.41	.31
Proportion Students From low SES homes squared	.39	.17

*Note: The school grade was converted from an alphabetic value to a numeric value using the conversions A = 4, B = 3, C = 2, D = 1, and F = 0.

Predicting Attendance Rates in the 2008-2009 Academic Year

Again, a hierarchical multiple regression analysis was carried out using the attendance rate as the dependent variable and the other variables in Table 17 as the predictors. As was done previously, predictor variables were entered in three groups. The first group consisted of the three control variables, the second of the squares of the three control variables, and the third as the school grade. Table 18 shows the result of this regression.

Table 18
Predictors of Attendance for Academic Year 2008 – 2009

Variable	Attendance			
	Model 1B	Model 2B	Model 3	
			B	95% CI
Constant	93.435	95.203	91.531	82.097 to 100.965
Percent Black students	2.361	7.608	12.117	-7.804 to 32.038
Percent Hispanic students	4.498	-12.827	-17.937	-56.512 to 4853.402
Percent students from low SES homes	-5.460	7.236	16.647	-13.859 to 47.154
Percent Black students squared		-10.969	-15.899	-39.595 to 7.794
Percent Hispanic students squared		12.277	16.254	-11.550 to 44.057
Percent students from low SES homes squared		-10.391	-15.864	-39.328 to 7.509
School grade squared			.198	.045 to .352
R^2	.337	.363	.503	
F	4.916**	2.464	3.616**	
ΔR^2		.025	.141	
ΔF		2.452	1.152	

Note: $N = 33$

** $p < .01$

The table indicates that adding the school grade (actually the square of the school grade since the researcher is hypothesizing a quadratic relationship between attendance and grade of school) explains an additional 14.1% of the variance of school attendance over and above the variance accounted for by the control variables and that this change in R^2 is significant at the $\alpha = .05$ level of significance ($\Delta R^2 = .141, df = 1, 25, p = .013$). Knowing the school grade also results in a significant prediction of attendance in Model 3 ($F = 3.616, df = 7, 25, p = .008$). Not only is the relationship significant, it is visible in the scatterplot in Figure 4 as an inverted U. These data appear to support the notion that there is a non-linear relationship between school grade and attendance and that the relationship follows the inverted U model.

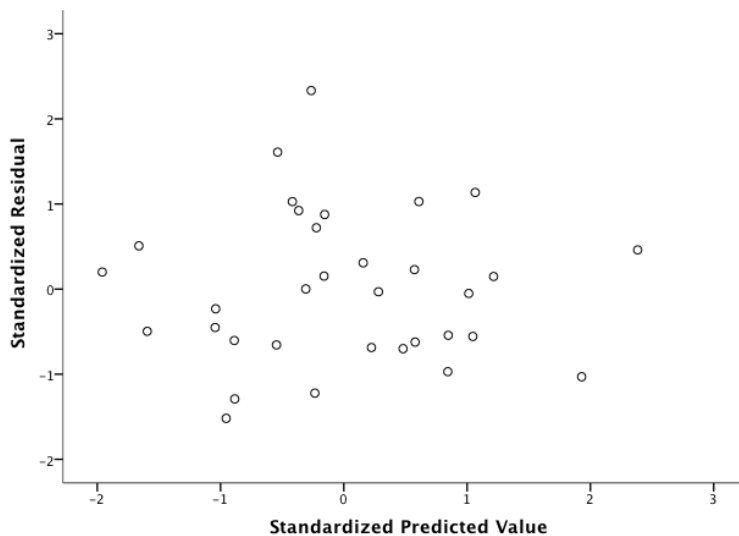


Figure 4. Scatterplot for the prediction of attendance in the 2008-2009 data

Predicting Suspension Rates in the 2008 - 2009 Academic Year

A hierarchical multiple regression with two race/ethnicity variables and a variable describing socioeconomic status and their squares as controlling variables was carried out in order to determine if school attendance was related to the grade assigned to the school by a state education agency. Table 19 presents the findings from that multiple regression.

Table 19
Predictors of Suspensions for Academic Year 2008 – 2009

Variable	Suspensions			
	Model 1B	Model 2B	B	Model 3
				95% CI
Constant	58.165	189.003	519.703	-1833.887 to 2873.293
Percent Black students	721.470	-110.051	-516.052	-5485.855 to 4453.750
Percent Hispanic students	766.304	-1260.058	-799.864	-10423.349 to 8823.620
Percent students from low SES homes	-85.912	3258.692	2411.187	-5199.530 to 10021.903
Percent Black students squared		-323.063	120.898	- 5790.038 to 6031.834
Percent Hispanic students squared		831.407	473.306	- 6463.052 to 7409.664
Percent students from low SES homes squared		-2569.009	-2076.136	-7907.260 to 3754.998
School grade squared			-17.864	-56.185 to 20.454
R^2	.043	.079	.043	
F	.434	.369	.447	
ΔR^2		.036	.033	
ΔF		.065	.078	

Note: $N = 33$

From the table it is clear that none of the three models significantly predicted the number of students who were suspended during the 2008-2009 academic year. The R^2 value for the proportion of the variance of the suspension rates that was accounted for by the grade of the school above and beyond the control variables was not significant at the $\alpha = .05$ level. As noted with the data concerning suspension numbers from the 2005-2006 sample, the fact that the value zero is in the 95% confidence interval for the squared

school grade indicates that the squared grade is just as likely to have a population regression coefficient (β) of zero as any of the other values in that distribution.

Summation

In testing Hypothesis 1, the data that were collected indicated that the mean number of suspensions during the third quarter of the school year (the quarter that standardized tests were given) was significantly greater than the number of suspensions in the first quarter in all three academic years investigated by this study. The mean numbers of suspensions during the second quarter and during the fourth quarter, however, were not significantly different than the mean number of suspensions given out during the third quarter. The notion that the suspension rate rises in the third quarter because of pressure placed on students by the standardized program was not supported.

Hypothesis 2 suggested that the grade of a high school (used as a proxy for stress) could be used to predict the number of absences and the number of suspensions during each of four academic years when controlled by three school demographics (the proportion of Black and Hispanic students in each school and the proportion of students from lower socioeconomic status homes) and suggested that the regression line would be shaped as an inverted U (a quadratic relationship). Data obtained to test this hypothesis indicated that such a prediction could be made for attendance in each of the four academic years from 2005 – 2006 to 2008 – 2009. Further, the school grade accounted for a large proportion of the variance of attendance over and above the control variables. Finally, it was seen that the relationship was quadratic and in the shape of an inverted U. There were no significant predictions of rate of suspension produced by any of the control variables or the predictor variable school grade in any of the four academic years.

CHAPTER 5

DISCUSSION

This quantitative study examined the relationship between school grade, used as a proxy for accountability pressure, and specific escape behaviors (absences and suspensions) at 33 public high schools in Miami-Dade County, Florida. The questions were answered using repeated measures analysis of variance (ANOVA) for research question #1 and non-linear multiple regressions for research question #2. In order to answer research question #1, data collected included the number of suspensions in each of the 33 high schools for the academic years 2007 – 2008, 2008 – 2009, and 2009-2010 during each academic quarter. For research question #2, data from students were collected for each of the 4 school years 2005-2006 through 2008-2009. This included the schools' FCAT grades, proportions of Black and Hispanic students, proportion of students from low socioeconomic status homes (participants were considered to be from low socioeconomic status homes if they qualified for free or reduced lunch at school), the number of suspensions during the school year, and the proportion of enrolled students present in school for each school for each of the academic years. Data were gathered from the Cognos data system that was publically available at the Miami-Dade County Public Schools website.

The time period selected for data analysis is unique in that high school accountability grades were dictated primarily by the scores achieved on the FCAT examinations that tested the students' mastery of the Sunshine State Standards. Though the school grading criteria and state standards have changed, high stakes testing is still the one of the main measures used to determine students' ability to graduate. In addition,

during this time 50% of teachers' annual summative evaluation scores were determined by the FCAT scores of their students.

Summary of Relationship Between School Grade and Escape Behaviors

The study examined the following two research questions regarding the relationship between the academic quarters and the suspension rate for research question #1 and the relationship between school grade (i.e., stress) and both attendance and suspension rates when race/ethnicity and socioeconomic status are controlled for research question #2. Research question #2 will be discussed first as it aids in explaining the results found in research question #1.

Research question #2 asked how accurately does the high school's grade predict the number of suspensions and number of absences during each of the 4 school years 2005-06 through 2008-09? Data for suspension and absence escape behaviors were analyzed separately. The null hypothesis that the high school's grade could not predict the number of suspensions was not rejected. No significant prediction could be made when comparing the relationship between school grade and suspensions when controlling for the proportion of variance accounted by socioeconomic status and race/ethnicity for any of the 4 school years. There were high levels of multicollinearity found among these three control variables, and the predictor variable (school grade) and this might have at least partially accounted for the lack of variance accounted for by the predictor variable.

Another explanation may be that school principals are penalized for having high numbers of suspensions. Schools are required by the Florida Department of Education to create a suspension goal and action steps in their school improvement plan template given by the FLDOE and are thus required to decrease the number of suspensions each

academic year (Florida Department of Education Bureau of School Improvement, 2012). Schools are monitored each year by the state to determine if the suspension numbers have decreased. These data are reviewed by the state and district office. Thus, there is no incentive for schools to be totally forthcoming with their suspension numbers. Administrators may get around this requirement by not officially reporting indoor and outdoor suspensions. If school administrators under-report suspensions in their schools, the distribution of scores will be more homogeneous than it would have been if all suspensions were reported. The ultimate situation would be if all administrators report zero suspensions in their buildings. In that case all the schools would have the same number of suspensions and the distribution of suspensions would be totally homogeneous. Of course, in real life under-reporting is not that drastic, but under-reporting would still lower the variability of the distribution of suspensions. Homogeneity leads to lower correlations. Students placed on indoor suspensions are housed in a classroom or detention room and it is not necessary to report this in the district's Student Case Management system in order for the behavioral consequence to be administered. The same is true for outdoor suspensions. Administrators may make contact with parents and ask them to pick up and take home students for the day or several days without having to officially report it. This allows the school site administrators to use suspensions as a tool to punish student behaviors without the overall suspension numbers increasing over the state instituted goal. The student who is unofficially suspended indoors will be reported as a student who is present and attending class and the student who is unofficially suspended outdoor will be reported as an unexcused absence.

As indicated above, for research question #2, student absence was analyzed separately. Unlike suspensions, reporting of student absences is done with fidelity. Schools must account for these absences in order to receive funding and for liability reasons. School administrators are responsible for the students' health and wellbeing while they are at school or during a school function. When a student is absent, the school is no longer responsible for that student and should a crisis or emergency occur that involves that student the school is released of responsibility. If a student is marked as present but was not on the school campus, the school is liable for the wellbeing of the student. Principals are required by State Board Rule 6A-1.044 Pupil Attendance Records to accurately keep attendance records under penalty of law.

The null hypothesis for research question #2 that the high school's grade could not predict the number of absences was rejected. When squaring the school grade in the non-linear multiple regression to analyze whether a quadratic relationship exists it was found that for all the 4 school years 2005-06 through 2008-09 that a quadratic relationship does exist and, as seen in Figures 1 through 4, that the relationship is in the shape of an inverted U. Using school grade one could predict the overall school attendance percentage. This is consistent with the inverted-U hypothesis (Yerkes & Dodson, 1908). As the school grade decreases, the pressure placed upon the school by the Florida Department of Education increases; however, the number of absences has an inverted U predictive relationship. Harriman (2005) suggested an explanation for this phenomenon. In that study, students in low performing schools believed that there were uncontrollable factors involved in determining their academic performance. Therefore, the students did not put forward maximum effort; they believed that it would be to no

avail. Success was seen as being due to external factors. Although Harriman did not specifically use the term “locus of control”, that might be a useful way to explain the behavior of the students in that study as well as the students in the low performing schools in the present one. The increased stress on the lowest performing schools was not reflected in the number of student absences. The students there did not display high levels of the escape behavior of being absent. Students who consistently perform poorly on tests may not believe that they can control their own success in school (Connell, 1985). Their previous experiences with being under state accountability pressure may not have been internalized as an anxiety inducing threat (Lazarus, 1966; Spielberger, 1966).

The inverted U finding for absence as it relates to the A, B, and C schools is consistent with the notion of negative reinforcement, also known as avoidance conditioning. There is little pressure on high performing schools (A and B schools), so there is less stimulus for escape behaviors such as being absent for the students there. As posited by the transactional process model (Lazarus, 1966; Spielberger, 1966) these students may not feel threatened by the stressor of their school grade and thus not anxious.

Using the same transactional process model (Lazarus, 1966; Spielberger, 1966), the students at C schools are in the most anxiety inducing position. They may well feel anxious may interpret the stressor of state pressure to perform as an anxiety inducing threat because their performance will impact the school’s future grade. The students in C schools are under greater pressure than students in A and B schools, and may well internalize the threat of falling to a D school and being under even greater pressure at the same time they are being encouraged to help the school become a B school. Students in

C schools may well internalize the encouragement they experience to take responsibility for their role in improving the school grade as a threat. It is worth noting that Miami Dade County Public Schools (MDCPS) released an information capsule from the Office of Assessment, Research, and Data Analysis (MDCPS, 2010) to all employees to make them aware of their finding that chronic school-related stress was found to have consequences that included but was not limited to frequent physical illness and absences related to the physical illness.

Research question #1 asked, is the number of suspensions highest in the third quarter, when most FCAT preparation takes place for each of the 3 school years 2007-08 through 2009-10? This research hypothesis was not totally supported. A statistically significant relationship was not found that would suggest that the third quarter had the highest number of suspensions. By analyzing each of the 3 years of data individually and then combined, it was found that the mean number of suspensions in quarters two and three were not significantly different. When testing within-subjects contrast testing for linear, quadratic, and cubic contrasts the only significant contrast observed was the quadratic contrast. This quadratic contrast was found for all 3 school years. This finding is consistent with the notion of a relationship that can be expressed as an inverted U.

As this research question only deals with escape behaviors in the form of suspensions the same justification used in research question #2 can be used to explain the findings in research question #1. The lack of official support for reporting suspensions in order to achieve the suspension goal set by the state discussed above may also be a factor in failing to reject the null hypothesis.

Recommendations for C School Site Administrators

School site administrators who are responsible for C schools, schools that are on the onset of additional state pressure and requirements, should reevaluate test preparation activities and procedures being used in their building to include anxiety reducing strategies. Commonly used techniques including, but not limited to, teaching test taking skills, test simulations, and data debriefings might be supplemented with taking steps so that the students are not only being academically prepared but also emotionally prepared for state testing and the pressures that go along with high-stakes tests.

The findings of this study imply that C school administrators might consider developing a protocol for contacting parents and meeting with students to determine if test anxiety or pressure is an underlying reason for student absence. These school administrators should also engage in conversations with school guidance counselors and other student services personnel to determine if further student wrap around student services should be included at the school site. Such services include more than academic advisement; they include mental health counseling, addressing the needs of the whole child. Student service personnel may consider teaching teachers and students strategies that reduce test related anxiety and feelings of pressure. For example, they might train teachers to conference individually with students to determine the students' emotional needs and to help anxious students develop specific subject related strategies to reduce the anxiety.

Other strategies including creating more extrinsic incentives for students to come to school in high pressure environments should also decrease the number of absences and aid in overall student achievement. For example, schools might create rewards for

students or classes who show good or improved attendance. If students are habitually absent to escape from the test preparation activities and test simulations, their abilities to effectively demonstrate mastered course objectives is jeopardized and may result in an inaccurate reflection of the student's achievement, the effectiveness of the teacher, the effectiveness of the school's administrators, and the quality of the school site.

Recommendations for School District and State Officials

School district and state officials should act strategically by developing district and/or statewide initiatives and policies designed to help alleviate these escape behaviors and consequently improve overall school success. District and state directors and instructional supervisors should be trained in how to spot signs of excessive escape behaviors due to accountability pressures. They can then provide the school leadership with assistance and strategies on how to diminish such absences. District and state curriculum support specialists should be trained on how to train and model for teachers instructional strategies that increase student achievement, student efficacy, and student morale without increasing anxiety by constantly drilling skills and taking mock assessments. Rather than the current "academic achievement discourse", which emphasizes the skills rather than the student, they might model the inclusion of what Armstrong (2006) has called "human development discourse", which uses psychological research on human development and ties it to teacher –student interactions. The emphasis of this discourse on increasing students' potential and addressing their individual needs might assist in decreasing their anxiety during instructional practices. Assistance by both the district and state is needed as graduation rates and student absenteeism are also facets of both school accountability and the student's ability to

master course material and receive a passing score on the high-stakes tests. State officials should also consider this study's finding of a relationship between school grade and student absences when creating the school grading formula and teacher summative evaluation formula. An unintended consequence of adding student attendance to either may well be increasing the pressure for stakeholders in C schools.

As the school districts and state department of education deploy support to schools in need of improvement, they should consider differentiated support for these schools. This support should not be solely differentiated by school grade. Differentiation based on school grade primarily targets support that increases the teachers' ability to instruct the curriculum and help struggling students meet academic standards without paying sufficient attention to school climate, including teacher and student reactions to high stake test related stress. Reis (2007) suggested that schools may contribute to their students' behaviors just by the school climate; that is, the way they are organized, their stance on how they treat their students, and even in the instructional strategies they employ. Support for schools where students are not thriving should also assist in rehabilitating the school's climate and culture. These schools need assistance in working toward making them comfortable places where students are empowered, engaged participants in their education. Lazarus (1991) pointed out that if students are not comfortable they might not perform at their highest level of capability. This may be so, regardless of the level of academic support being supplied.

By engaging in respectful conversations between school site administrators and district and state officials regarding suspensions and student behavior together they might collaborate and create realistic goals that encourage the accurate reporting of suspensions.

This will assist future research in determining if in fact a relationship exists between the variables of school pressure and number of student suspensions. Should a relationship be found district and school site administrators might use this new data to revise the district's student code of conduct that in turns requires the school site to revise their in house disciplinary procedures and plans.

Recommendations for Future Research

Miami-Dade County Public Schools is the fourth largest school district in the United States and has very large populations of minority students, low socio-economic students, English Language Learners and students with special needs. Most school districts in the United States are much smaller and do not have the same amount of diversity. It would be useful to replicate this study in other districts in order to determine if similar findings can be found in more rural school districts and less diverse districts. Replication of the study in these smaller more rural school districts may be able to determine generalizability.

For research question #2 indoor and outdoor suspensions were combined when conducting the non-linear multiple regressions. Separating the indoor and outdoor suspensions and running the analysis separately may result in a different outcome. Outdoor suspensions are considered to be of greater consequence. Separating the two different types of suspensions may show if students are more likely to engage in particular escape behaviors in order to get either type of suspension in order to avoid test related stressors.

Additionally, as this research's purpose was to determine if a relationship or correlation between pressure to perform on high stakes tests and escape behaviors was

present, future research should be conducted to develop a more nuanced understanding of the relationship between the two variables. In addition to suspension and absence researchers may look at other escape behaviors such as off-task behavior. Research might also include a study that surveys students and teachers regarding school pressure and their response to this pressure. Interviews of students who have engaged in escape behavior will also help educators understand if their behavior was in response to test anxiety, test preparation, or test simulation. A study might also be conducted to further aid in determining if there is a causal relationship between the two variables and not solely a correlational relationship. A study could compare schools that take on a personalized learning approach and thus do not use traditional test preparation and test simulation with schools that do use these traditional activities to determine whether there is a causal relationship between testing activities and negative escape behaviors.

Conclusion

The results of this quantitative study found that no significant relationship could be found with either the grading period that suspensions occurred or the grade of the school and the number of suspensions that occurred. On the other hand, a statistically significant relationship was found between schools' student attendance rate and school grade. When plotted, this relationship formed a loose inverted U for each of the four years of collected data. Additionally, the results of this study found that the variables dealing with school grade, race, ethnicity and socio-economic status had a strong correlation to one another.

With the implementation of Common Core State Standards and national standardized tests it is clear that the pressures to perform on high-stakes tests will not be

going away any time soon. States, school districts, and most importantly school sites must prepare for any unintended consequences on the path to increasing educational standards and accountability. Focusing on the school climate, availability of student services resources, and appropriate instructional practices will not only aid in reducing the achievement gap but will also assist in making schools a positive place where students feel comfortable learning and asking for assistance when needed. As schools move to wrap around services, they will be close to meeting the needs of the whole child.

REFERENCES

- Abrams, L. M. (2005). *Teachers' views on high-stakes testing: Implications for the classroom*. Education Policy Research Unit, Boston College. Boston, MA.
- Allen, B. D., & Carifo, J. (1995). Nonlinear analysis: Catastrophe theory modeling and Cobb's Cusp surface analysis program. *Evaluation Review, 19*, 64-83.
- American Educational Research Association. (2000). *AERA position statements: High-stakes testing in PreK-12 education*. Washington, DC: Author.
- Armstrong, T. (2006). *The best schools: How human development research should inform educational practice*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Bass, J., Burroughs, M., Gallion, R., & Hodel, J. (2002). *Investigating ways to reduce student anxiety during testing*. Unpublished master's thesis, Saint Xavier University, Chicago, IL.
- Bernauer, J. A., & Cress, K. (1997). How school communities can help redefine accountability assessment. *Phi Delta Kappan, 78*, 71-75.
- Blankstein, K. R., Toner, B. B., & Flett, G. L. (1989). Test anxiety and the contents of consciousness: Thought-listing and endorsement measures. *Journal of Research in Personality, 23*, 269-286.
- Bogdan R. C., & Biklen S. K. (2007). *Qualitative research for education an introduction to theories and methods* (5th ed.). Boston, MA: Pearson Education.
- Boles, S. (1990). A model of routine and creative problem solving. *Journal of Creative Behavior, 24*(3), 171-189.
- Carr, E. G., Taylor, J. C., & Robinson, S. (1991). The effects of severe behavior problems in children on the teaching behavior of adults. *Journal of Applied Behavior Analysis, 24*, 523-535.
- Casbarro, J. (2005). *Test anxiety and what you can do about it*. Port Chester, NY: Dude.
- Center on Education Policy. (2002). *State high school exit exams: A baseline report*. Washington, DC: Author.
- Chamorro-Premuzic, T., Ahmetoglu, G., & Furnham, A. (2008). Little more than personality: Dispositional determinants of test anxiety. *Learning and Individual Differences, 18*, 258-263.

- Cobb, L., & Watson, B. (1980). Statistical catastrophe theory: An overview. *Mathematical Modeling, 1*, 311-317.
- Cohen, J. (1992). A power primer. *Psychological Bulletin, 112*, 155–159.
- Connell, J. P. (1985). A new multidimensional model of children's perception of control. *Child Development, 56*, 1018-1041.
- Deary, I. J., Blenkin, H., Agius, R., Endler, N. S., Zealley, H., & Wood, R. (1996). Models of job-related stress and personal achievement among consultant doctors. *British Journal of Psychology, 87*, 3-29.
- Dee, T. S., & ; Jacob, B. A., (2010). The impact of no child left behind on students, teachers, and schools. In: *Brookings Papers on Economic Activity. RePEc:bin:bpeajo:v:41:y:2010:i:2010-02:p:149-207*.
- Driesler, S. D. (2001). Whiplash about backlash: The truth about public support for testing. *National Council on Measurement in Education Newsletter, 9*(3), 2-5.
- Dube, S., & Orpinas, P. (2009). Understanding excessive school absenteeism as school refusal behavior. *Children & Schools, 31*(2), 87-95.
- Fairchild, T. N., & Zins, J. E. (1986). Accountability practices of school counselors: A national survey. *Journal of Counseling and Development, 65*, 196-199.
- Florida Department of Education. (n.d.). *Fact Sheet: NCLB and adequate progress*. Retrieved from <http://www.broward.k12.fl.us/hrd/Articles/FactSheet-AYP&NCLB.pdf>
- Florida Department of Education Bureau of School Improvement. (2012). *District and school improvement plans* [PDF document]. Retrieved from <http://www.flbsi.org/schoolimprove/index.htm>
- Florida Department of Education Bureau of School Improvement (2008). *Florida's differentiated accountability model* [PDF document]. Retrieved from http://www.fldoe.org/news/2008/2008_07_29/diffaccountimplem.pdf
- Florida Department of Education Evaluation and Reporting Office, Division of Accountability, Research, and Measurement (2007). *2007 Guide to calculating school grades technical assistance paper* [PDF document]. Retrieved from <http://schoolgrades.fldoe.org/pdf/0607/2007SchoolGradesTAP.pdf>
- Florida Department of State. (2010). *Pupil attendance records*. Retrieved from <https://www.flrules.org/gateway/RuleNo.asp?ID=6A-1.044>

- Folin, O., Denis, W. & Smillie, W. G. (1914). Some observations on “emotional glycosuria” in man. *Journal of Biological Chemistry*, 17, 519-520.
- Fyans, L. J. (1979, July). *Test anxiety, test comfort, and student achievement test performance*. Paper presented at the Educational Testing Service, Princeton, NJ.
- Galassi, J. P., Freirson, Jr., H. T., & Sharer, R. (1981). Behavior of high, moderate, and low test anxious students during an actual test situation. *Journal of Consulting and Clinical Psychology*, 49, 51-62.
- Glaser, B. G. & Strauss, A. L. (1967). *The discovery of grounded theory: Strategies for qualitative research*. New York, NY: Aldine De Gruyter.
- Green, R. G. (1985). Evaluation apprehension and response withholding in solutions of anagrams. *Personality and Individual Difference*, 6, 293-298.
- Green, R. G. (1987). Test anxiety and behavioral avoidance. *Journal of Research in Personality*, 21, 481-488.
- Gordon, B. (2000). On high stakes testing. *AERA Division G Newsletter*, 1-4.
- Hardy, L. (1990). A catastrophe model of anxiety and performance. In J. G. Jones & L. Hardy (Eds.), *Stress and performance in sport*. (pp. 81-106). Chichester, UK: Wiley.
- Hardy, L. (1996). Testing the predictions of the cusp catastrophe model of anxiety and performance. *Sport Psychologist*, 10, 140–156.
- Hardy, L. (1999). Stress anxiety and performance. *Journal of Science and Medicine in Sport*, 2, 227–233.
- Hardy L., Beattie S., & Woodman, T. (2007). Anxiety-induced performance catastrophes: Investigating effort required as an asymmetry factor. *British Journal of Psychology*, 98, 15–31.
- Hardy, L., & Parfitt, C. G. (1991). A catastrophe model of anxiety and performance. *British Journal of Psychology*, 82, 163–178.
- Hardy, L., Parfitt, C. G., & Pates, J. (1994). Performance catastrophes in sport: A test of the hysteresis hypothesis. *Journal of Sports Sciences*, 12, 327–334.
- Harrimen, N. E. (2005). Perceptions of students and educators on the impact of no child left behind: Some will and some won't. *Rural Spec Educ Q* 24 no 1

- Hill, K. T. (1976). Individual differences in children's responses to adult response, to adult presence, and evaluative reactions. *Merrill-Palmer Quarterly*, 22, 99-104.
- Hill, K. T. (1984). Debilitating motivation and testing: A major educational problem, possible solutions, and policy applications. In R. E. Ames & C. Ames (Eds.), *Research on motivation in education*, (pp. 245-274). New York, NY: Academic Press.
- Hoffman, J., Assaf, L., & Paris, S. (2001). High-stakes testing in reading: Today in Texas, tomorrow? *The Reading Teacher*, 54, 482-494.
- Jones, B.D., & Egley, R.J. (2007). Learning to take tests or learning for understanding? teachers' beliefs about test-based accountability. *Educational Forum*, 71(3), 232-248.
- Jones, G., Jones, B., Hardin, B., Chapman, L., Yarbrough, T., & Davis, M. (1999). The impacts of high-stakes testing on teachers and students in North Carolina. *Phi Delta Kappan*, 81, 199-203.
- Karmos, A. H., & Karmos, J. S. (1984). Attitudes toward standardized achievement tests and their relation to achievement test performance. *Measurement and Evaluation in Counseling and Development*, 17, 56-66.
- Kearney, C. A., & Albano, A. M. (2004). The functional profiles of school refusal behavior. *Behavior Modification*, 28, 147-161.
- Kondas, A. (1967). Reduction of examination anxiety and 'stage-fright' by group desensitization and relaxation. *Behaviour Research and Therapy*, 5, 275-281.
- Kubiszyn, T. & Borich, G. (2000). *Educational testing and measurement: Classroom application and practice (6th ed.)*. New York: John Wiley.
- Lattimore, R. (2001). The wrath of high-stakes tests. *Urban Review*, 33, 57-67.
- Lazarus, R. S. (1966). *Psychological stress and the coping process*. New York, NY: McGraw-Hill.
- Lipman, P. (2003). Cracking down: Chicago school policy and the regulation of Black and Latino youth. In K. J. Saltman & D. A. Gabbard (Eds.), *Education as enforcement: The militarization and corporatization of schools* (pp. 81-101). New York, NY: Routledge Falmer.
- Marchant, G. J., Paulson, S. E., & Shunk, A. (2006). Relationships between high-stakes testing policies and student achievement after controlling for demographic factors

in aggregated data. *Education Policy Analysis Archives*, 14(30). Retrieved [May 2010] from <http://epaa.asu.edu/epaa/v14n30/>

- McCaleb-Kahan, P., & Wenner, R. (2009). *The relationship of student demographics to 10th Grade MCAS test anxiety*. Paper presented at the 40th Annual Meeting of the Northeastern Educational Research Association, Rocky Hill, CT, October 2009.
- McIntosh, K., Horner, R. H., Chard, D. J., Dickey, C. R., & Braun, D. H. (2008). Reading skills and function of problem behavior in typical school settings. *Journal of Special Education*, 42, 131-147.
- Methia, R. A. (2004). *Help your child overcome test anxiety and achieve higher test scores*. College Station, TX: VBW.
- Miami-Dade County Public Schools. (2010, October). *Student stress*. Research Services, Office of Assessment, Research & Data Analysis. 1500 Biscayne Boulevard, Suite 225, Miami, Florida 33132.
- Mulvenon, S. W., Conners, J. V., & Lenares, D. (2001, November). *Impact of accountability and school testing on students: is there evidence of anxiety?* Paper presented at the annual meeting of the Mid-South Educational Research Association, Little Rock, AR.
- National Commission on Excellence in Education. (1983). *A nation at risk: The imperative for educational reform*. Washington, DC: U.S. Department of Education.
- Nichols, S. L. & Berliner D. C. (2008). Why has high-stakes testing so easily slipped into contemporary American life? *Phi Delta Kappan*, 89, 672-676.
- Paris, S. (1992). Four perspectives on educational assessment. *International Journal of Disability, Development, and Education*, 39, 95-105.
- Paris, S. G., Lawton, T. A., Turner, J. C., & Roth, J. L. (1991). A developmental perspective on standardized achievement testing. *Educational Researcher*, 20, 12-20+40.
- Pedulla, J. J., Abrams, L. M., Madaus, G. F., Russel, M. K., Ramos, M. A., & Miao, J. (2003). Perceived effects of state-mandated testing programs on teaching and learning: findings from a national survey of teachers. *National Board of Educational Testing and Public Policy*, Chestnut Hill, MA.

- Pekrun, R. (1984). An expectancy-value model of anxiety. In H. M. Van der Ploeg, , R. Schwarzer, ,& C. D. Spielberg (Eds.). *Advances in Test Anxiety Research 3*, (pp. 53-72). Lisse,, Netherlands: Swets & Zeitlinger.
- Philips, B. N., Martin, R. P., & Meyers, J. (1972). Interventions in relations to anxiety in school. In C. D. Spielberger (Ed.), *Anxiety: Current trends in theory and research* (Vol. 2. pp. 410-464). New York, NY: Academic Press.
- Reis, J., Trockel, M., & Mulhall, P. (2007). Individual and school predictors of middle school aggression. *Youth Society*; 38, 322-347.
- Rhone, A.E. (2006). Preparing minority students for high-stakes tests: Who are we cheating? *Childhood Education*, 82(4), 233-235.
- Rogerson, P. A. (2001). *Statistical methods for geography*. London, England: Sage.
- Rubenzler, R. L. (2002). *Scoring best on all life's tests - by using your "whole brain"*. Cornelius, NC: Warren.
- Sarason, I. G. (1972).Experimental approaches to test anxiety: Attention and the uses of information. In C. D. Spielberger (Ed.), *Anxiety: Current trends in theory and research* (Vol. 2. pp. 386-403). New York, NY: Academic Press.
- Sarason, S. B., Davidson, K. S., Lighthall, F. F., Waite, R., & Ruebush, B. K. (1960). *Anxiety in elementary school children*. New York, NY: Wiley.
- Schwarzer, R. (1984). Worry and emotionality as separate components in test anxiety. *International Review of Applied Psychology*, 33, 205-220.
- Shakrani, S. (2008). *Teacher turnover*. Education Policy Center, Michigan State University.
- Shepard, L. (1991). Will national tests improve student learning? *Phi Delta Kappan*, 73, 232-238.
- Smith, M. L., & Rottenberg, C. (1991). Unintended consequences of external testing in elementary schools. *Educational Measurement: Issues and Practice*, 10(4), 7-11.
- Spielberger, C. D. & Vagg, P. R. (1987).The treatment of test anxiety: A transactional process model. In C. D. Spielberger, & P. R. Vagg, *Test anxiety: Theory, assessment, and research* (pp. 1-14). Washington, DC: Taylor & Francis.

- Steward R. J., Steward A. D, Blair, J., Jo, H., & Hill, M. F. (2008). School attendance revisited: A study of urban African American students' grade point averages and coping strategies. *Urban Education* 2008; 43, 579-536.
doi: 10.1177/0042085907311807
- Thom, R. (1975). *Structural stability and morphogenesis*. Trans. by D. H. Fowler. Reading, MA: Benjamin Press.
- U.S. Census Bureau. (2013). *School enrollment in the United States: 2011*. Retrieved from <http://www.census.gov/hhes/school/index.html>
- U.S. Department of Education, Office of Public Affairs. (2004). *A guide to education and no child left behind*, Washington, DC.
- U.S. Department of Education, National Center for Education Statistics, Common Core of Data (CCD). (2010). "Public Elementary/Secondary School Universe Survey," 2007-08; "Local Education Agency Universe Survey," 1990-91, 2000-01, and 2007-08; and "Local Education Agency-Level Public-Use Data File on Public School Dropouts: School Year 2005–06."
- U.S. Department of Education. (2002). *No child left behind: A desktop reference*. Washington, DC: U.S. Department of Education.
- Wasserman, E. A., & Miller, R. R. (1997). What's elementary about associative learning. In J. T. Spence, J. M Darley, & D.J .Foss (Eds.), *Annual review of psychology* (pp.573-607). Palo Alto, CA: Annual Reviews.
- Whitaker-Sena, J. D., Lowe, P. A., & Lee, S. W. (2007) Significant predictors of test anxiety among students with and without learning disabilities. *Journal of Learning Disabilities*, 40, 360-376.
- Wigfield, A., & Eccles, J. S. (1989). Test anxiety in elementary and secondary school students. *Educational Psychologists*, 24, 159-183.
- Wolk, R. (2001). Exam anxiety. *Teacher Magazine*, 13(1), 4.
- Woolfolk, A (2001). *Educational psychology* (8th ed.). Needham Heights, MA: Pearson.
- Yerkes, R. M., & Dodson, J. D. (1908).The relation of strength of stimulus to rapidity of habit formation. *Journal of Comparative and Neurological Psychology*, 18, 459-482.
- Zeeman, E. C. (1977). Catastrophe theory. *Scientific American*, 234(4), 65-83.

Zeidner, M. (1995). An introduction to the domain of test anxiety. In M. Zeidner (Ed.), *Test anxiety: The state of the art* (pp. 1-30). New York, NY: Plenum.

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