The effects of standardized testing on second grade students

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The Effects of Standardized Testing on Second Grade Students

Heather C. Goin

Thesis Submitted in Partial Fulfillment of
the Requirements for the Degree of Masters of Arts in Education

California State University Monterey Bay

May 2011

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Approved by the MAE Graduate Advisory Committee

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Acknowledgements

During the two years of working on this study, many people helped me through the journey. It was a long journey, filled with ups and downs, laughter and tears, and many tantrums! It is with utmost sincerity that I impart my deepest gratitude to the following people who have helped me to complete this thesis work.

First and foremost, I owe my biggest thanks to my husband and best friend, Josh Goin. Josh, thank you for being my rock and always standing next to me and encouraging me to continue every time I was “done” and wanted to quit! This accomplishment is as much mine, as it is yours.

Second, I would like to thank my thesis advisor, Dr. Carolina Serna, for all her help and patience, even when I was the most difficult advisee to work with! I know I was challenge, but thank you for never giving up on me and for agreeing to work me during those episodes of my tantrums and frustration!

A third thanks goes to my students. Without you this study would not have been possible. I am sorry that you experienced so much anxiety during your first STAR testing experience, but I thank you for keeping me distracted during the days of my writing. You are each special and unique in your way. Thank you for reminding me to laugh and be silly and for teaching me how to throw a tantrum

And of course, I am indebted to many of my colleagues for their support and encouragement. Thank you to my mentor, Nancy Gist. Every day I could go in her classroom and “bother” her with questions and asking for advice! I must thank Hilary Smith for her
comedic relief, wine and the “Power of Three”. And I can’t forget my favorite librarian, Juliana Arroyo, for her stress-release of bacon, doughnuts, and “Friday story hour”. What would I have done without those extra calories and stories!

Thank you to those who stood by me, encouraged me and believed in me.

~Heather C. Goin
Abstract

This study was conducted to evaluate the stress and anxiety of high-stakes, standardized testing on second grade students. Twenty second-grade students participated by giving their responses on an affect survey before and after STAR testing each day for two weeks. An analysis of the data revealed the students' different emotions towards taking the California STAR tests for the first time in their young academic career. The results from their responses showed that 85% of the participants experienced test anxiety or stress at least one day of testing. A majority of the students indicated feeling “nervous”, “scared”, “sad”, or “sick” before or after STAR testing. The results from the study are used to help parents, teachers and administrators understand what second-graders experience during STAR testing.
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Chapter I

Introduction

Background

Each spring the second grade students at this school are asked to take the California Standards Test (CST) in the Standardized Testing and Reporting (STAR) program. Current state law requires school districts to administer standardized tests to pupils in grades two through eleven. The STAR program is used to meet California’s assessment and accountability requirements to be in compliance with the No Child Left Behind Act (NCLB), which requires each state to administer a standards-aligned achievement test in reading and mathematics to all students in grades three through eight. Based on the NCLB 2001, testing second graders is not necessary to meet any federal requirements, (p. 26).

Due to California Education Code 60640, (California Department of Education, 2007), which says that second grade students must partake in the standards-based achievement tests (STAR tests) second graders are therefore given the STAR tests over a two-week period in the spring to assess what they know.

One reason for having second grade students participate in the STAR program is due to the fact that the scores on the CST’s are used to calculate the schools’ Academic Performance Index (API) and federal measure of Adequate Yearly Progress (AYP). Realtors, school districts and parents use the scores of the CST’s for multiple reasons. One reason why so many parents choose to have their children attend high-scoring districts. Schools with low scores are put on academic programs and are closely watched by the state. These schools then focus most of the
learning time on reading and math. While high-test score schools spend their academic hours teaching reading, math, science, social studies, art, technology, physical education and music.

Problem Statement

Each spring across California, second grade teachers observe some of their students start acting out and getting into trouble on the playground and in class. These teachers tend to call it “spring fever”. But when the students are asked to take the CST’s some became more emotional and may even experience crying each day after the test because of fears of failing. Watching seven-year old students change due to one test makes one question the benefits of the STAR program.

Goal and Purpose

The students in this study attend a Monterey County, California public elementary school. To get them ready for these tests, second grade students at this Monterey County school begin in August, learning how to fill in the bubbles on standardized tests. Some of these students can barely read, yet, they are asked to answer test questions with words beyond their current vocabulary. The purpose of this is to identify how young students respond to high-stakes testing. This study will also determine if second grade students experience test anxiety and stress due to STAR testing.

Research Question

Specifically, the following research question was addressed:

What are the effects of the STAR testing program on second grade students, relating to student affect?
Significance of the Study

The significance of this study is to better understand how STAR testing affects young students. The data shared from this study will allow an understanding of second graders’ affect relating to test anxiety and stress. The data will give a better understanding of how young students handle the STAR tests so that teachers, administrators and parents will be able to better guide their students.
Definition of Terms

**Academic Performance index (API).** A single number that reflects the scores of statewide testing. The score measures a school’s performance and growth.

**Adequate Yearly Progress (AYP).** A series of academic annual performance goals for a school.

**California Standards Test (CST).** A component of STAR testing. Assessments that measure students' progress toward achieving California's state-adopted academic content standards.

**High-Stakes Testing.** Assessments are considered high stakes when the consequences to individual students are evident (Ysseldyke, J. et al., 2004, p. 74).

**No Child Left Behind (NCLB).** Federal legislation signed into law on January 3, 2001 to help close the achievement gap with accountability, flexibility, and choice, so that no child is left behind (United States Department of Education, 2009).

**Standardized Testing.** Assessments that are consistent in the way they are administered and scored.

**Standardized Testing & Reporting (STAR) Program.** An assessment that tests progress towards achieving the content standards. STAR also measures the achievement of California students in comparison with students nationwide.

**Student Affect.** Attitudes, interests and values exhibited in school (Popham, 2009).

**Test Anxiety.** A combination of physiological over-arousal, worry and dread about test performance.
Chapter II

Research

Introduction

The purpose of this literature review is to analyze the effects of high-stakes testing. The literature first examines the link between high-cognitive assessments and anxiety. Then terminology of anxiety and stress are reviewed, followed by the effects that anxiety can play on test performance and results. Additional literature addressing the testing environment, the role of the teacher and the testing of second grade students are also discussed.

Search Procedures

A search through two computerized databases was conducted. The databases were Eric and Academic Search Elite. The following descriptors were used: (a) test anxiety, (b) standardized testing, (c) effects of, (d) affects of, (e) high-stakes testing, (f) testing second grade students, (g) testing grade school students, and (h) STAR testing. These descriptors were used individually and/or in groups to fully search through each of the databases.

Criteria for Selection

Studies were included in this review if: (a) the procedures and data-based results were published in the past 55 years, (b) the participants were all students, (c) testing and/or test anxiety was involved, and (c) the study included participants or case studies of students. Studies were excluded from this review if: (a) the participants were not students, (b) the participants were teachers, and (c) the study focused on the students' ethnicity or disabilities.
Literature Review

Research surrounding the effects of anxiety on school children has been ongoing for decades. There is agreement in the field that taking tests creates stress for many children (Cassady, 2004; Clovis, 2010; Engel, 2007; Graham, 1984; Papay, Costello, Hedl, & Spielberger, 1975; Putwain, 2007). The way in which high-stakes tests are administered, which includes stop-watched timed sections, complicated directions and inflexible rules, can make them stressful for students.

High-Cognitive Test Anxiety. A big factor of test anxiety is the ‘Fear of Evaluation’ that students have (Liebert & Morris, 1967). There are two components of ‘Fear the Evaluation’. One is the mental activity that a child experiences with the testing situation. A student worries about how they will perform compared to their peers, about their ability to perform on the test and about the negative consequences due to poor test scores. These thoughts of worry are displayed before, during and after a test (Prins & Hanewald, 1997; Zatz & Chassin, 1985). The other component is physiological. This component refers to ‘Emotionality’. Emotionality has to do with how the body reacts, such as nausea, sweating and shaking, increased heart rate and muscle tension (American Psychiatric Association, 1995). A student with test anxiety undergoes a wide range of mental and physical side effects.

If a student has test anxiety on more than one testing occasion, the student may be experiencing more than testing anxiety. The American Psychiatric Association’s Diagnostic and Statistical Manual – IV (1995) states that test anxiety is considered a ‘social phobia’, which is defined as a constant fear of embarrassment. For test anxiety to be diagnosed as a social phobia,
the student must show an immediate response when given a test, show extreme fear while performing the test, and show significant disruption to daily activities (American Psychiatric Association, 1995).

High-cognitive test anxiety has been researched in many countries and has shown students experience high stress no matter what country, gender or age. For example, a study on math test anxiety found that students showed more stress when it came to math testing than other areas and that girls had a higher test anxiety towards math than boys (Wigfield & Meece, 1988).

**Understanding Terminology.** One of the main challenges faced by researchers of academic stress and anxiety in school children is that of precision in terminology used, (Putwain 2007). McDonald (2001) defined test anxiety as excessive amounts of fear, worry and apprehension towards test taking and test results. Putwain (2007) adds that sometimes terminology of “anxiety” combines worry and other emotions that need to be individually examined. Putwain’s research found that schoolchildren of all ages find examinations a source of stress and worry. Putwain explored the general heading of “academic stress” versus “examination stress,” which indicated that sometimes these lines become confused as the day to day academic stress of class preparation, and curriculum are clumped with the stressors of examination. The areas of academic and examination stress are not clearly defined in the literature, the extent to which these two concepts might overlap is not clear. The measures to evaluate such variances between academic and examination stress is not a sufficient measure to effectively evaluate if the focus should be on academic stress or examination stress. ‘Anxieties’, ‘concerns’ and ‘worries’ are used interchangeably with ‘stress.’ This causes a challenge as it is a
matter of interpretation of the student’s perception or understanding of these defined terminologies. For example, a student might state that they are stressed, but in actuality their feelings should be termed as anxiety. Putwain’s works explored these definitions in terms of understanding their true meaning. There is much room for further exploration on this topic, however, in order to be effective in such research a clear understanding of terms such as “academic” or “examination,” is necessary and examining if the stress is in reference to cause or effect need, to be thoroughly defined.

Test Performance. Research shows that stress impairs ones information processing. Students spend so much time worrying about taking the test and the results afterwards that they have difficulty performing well. Test anxiety has a huge effect on test performance (Cassady, 2004; McDonald, 2001; Putwain, 2007 & Sarason et al., 1958). Would the students score higher if they did not experience test anxiety and stress? High test anxiety can actually increase the probability of a lower test score (Cassady, 2004). Therefore, if students are not performing to their full capability, are STAR tests and other high-stakes standardized tests showing a true representation of a student’s knowledge? And what does that mean for a school’s API scores? With so much pressure put on schools to perform well on tests and have high test scores, are schools actually doing a better job at teaching than they think?

Sarason and colleagues (1958) found that overall, the lower test-scoring students showed more anxiety during testing due to the student’s prior experiences of difficulty and failure. Students who experience test anxiety usually feel anxious due to the student’s knowledge of a previous test where either the student failed or they witnessed a peer who failed. The students
worry about failing and begin to mentally tell themselves that they will fail. Test anxiety and self blame are related in a situation that results in failure (Doris, 1959).

**The Testing Environment.** Students with a usually high-test anxiety may not show as high of anxiety on a low-stakes test as they would on a high-stakes test (Sarason & Sarason, 1990; Spielberger & Vagg, 1995). This is partly due to the stress that others put on high-stakes testing. Test anxiety is associated with test performance and not essays, homework or class work grades (Pintrich & De Groot, 1990). Students who experience test anxiety do not have the same worries about completing homework and other class work partly due to the stress that their parents and teachers place them. There is a lot of stress on students in schools to perform well on tests, whereas homework and class work are expressed as the practice for tests.

What makes standardized tests stressful is the actual method by which they are administered. They are rigidly timed, the instructions are complicated and the rules are not flexible, (Clovis, 2010). Teachers must cover up word walls, and periodic tables, and other teaching aides so that students cannot use them as aides, or “cheats” on the tests. Students are not allowed to have their water bottles on their desks during the tests and if they need to be excused to use the restroom, their teacher must call the office for an escort for the student. Hill and Eaton (1977) found that highly-anxious students performed worse under high-stakes testing environments than low-stakes testing, all due to the testing environment and procedures.

The change in classroom routine is another contributing factor. During standardized testing, students are required to conform to a new set of procedures that differ from the regular classroom routine. The change in routine may cause students to feel nervous.
There seems to be a direct link to skill-deficiency and students with a high-level of anxiety (Cassady, 2004). Test anxiety not only increases the probability for marginal success on formal assessments, but also damages the overall experience that students have of their educational process. Students who become too anxious and stressed about the math test after lunch, will spend all morning worrying about the test, rather than focus on the lessons that morning and then become further behind in class. High-cognitive test anxiety can develop reduced levels on performance and disengagement from learning all together (Cassady, 2004). Furthermore, individual students who are unable to address these concerns of test anxiety are less likely to develop strong study skills for test preparation.

Students in the United States take thousands of tests every school year. The importance that is placed upon standardized testing is immense. Scores are intensely analyzed and can directly influence specific schools’ funding and lead to possible penalties for not meeting their adequate yearly progress goals. Standardized testing will not go away soon, therefore strategies to work within the system are necessary and currently the only recourse to take at this point. Clovis (2010) recognizes these challenges and provides supportive information for teachers to work within the system of standardized testing, with such tips as creating a positive atmosphere were dread is replaced with anticipation. Educators that create a positive atmosphere, where tests are “just tests” and where the learning environment is a relaxed one, along with good practice of time management and the involvement of parents, help the students relax and enable them to learn in their classroom (Clovis, 2010).

Teacher Affect. While researchers agree that students experience test anxiety, showing low test performance (Cassady, 2004, McDonald, 2001; Putwain, 2007; & Sarason et al, 1958),
researchers also recognize that an educator should be aware that their students experience stress and that they should do everything they can to minimize situations that can produce stress.

Graham (1984) emphasizes the importance of teachers knowing their students. Graham examined how the teachers' affect influences failing students' perception of themselves. Graham found that sympathy and anger can influence student motivation.

Graham illustrates that based upon individual circumstance, sympathy towards a student can give that student support in determining their challenges and enable them to grow from their challenges; similarly, so can anger if it is manifested as disappointment in the student. The challenge is for the educator to know or have a strong understanding of the student they are communicating with to understand how anger or sympathy will impact the student. Not having a deep knowledge of their students' emotional attributes can lead to teachers, unknowingly, impairing their students' motivation and affect in the classroom. Such as sympathy or anger, these shared emotions can manifest themselves into guilt or personal anger.

Teachers need to be careful about their own affect in the classroom. While a teacher is unlikely to tell their student that they are low in ability, the information might be conveyed through the teachers gestures and attitude (Graham, 1984). If the teacher is stressed out in the classroom during the time of high-stakes testing, the students will be able to pick up on their teacher's stress and affect. The students will then internalize it and feel that they too need to be anxious and worried. Teachers are challenged to recognize their own feelings and emotions when administering such high-stakes examinations. Failure to do so, could result in even more anxiety and stress on the pupil.
Stress is a Part of Learning. Papay and colleagues (1975) argued that throughout the learning process, it may be necessary for stress to be endured, as learning is challenging and complex. Teachers should recognize that some stress is necessary in learning (Papay et al., 1975). Stress is essentially a part of the learning environment, even in elementary level classes. Students will forever be pushed to excel in grade school through college and even in the workplace. The world has become very competitive where everyone is trying to get ahead in life. When a student or adult stresses out it is because they wish to perform well and to the highest of their abilities. While Cassady (2004) recognized that an educator should do everything they can to minimize stressors in the classroom, Papay and colleagues (1975) argued that children need to experience stress and anxiety to prepare for life.

Testing of Second Grade Students. While research in the field illustrates that stress is essentially a part of the learning environment, (Cassady, 2004; Clovis, 2010; Engel, 2007; Graham, 1984; Putwain, 2007) declared that standardized tests are scary for second graders and bad for their morale and confidence and that test scores of children in second grade are considered to be unreliable.

The research surrounding the effects of anxiety on school children has been ongoing for decades. In 1975, a study was done to evaluate first and second grade children in individual multi-stage programs in both State anxiety (anxiety that manifests as an interruption of one’s emotional state) and Trait anxiety (anxiety that is part of an individual’s personality) (S-Anxiety & T-Anxiety) (Papay et al., 1975). Papay and colleagues found that children in the individualized-multiage program had lower S-Anxiety scores, their performance was influenced
by T-Anxiety and the complexity or difficulty of the learning task rather than S-Anxiety (Papay et al., 1975).

Engel (2007) stated that young students should not have to experience test stress and anxiety, which contradicts Papay and colleagues (1975) who feel that testing is necessary and stress is a side effect. Since students will continue to take tests, stress and anxiety with testing will continue to be an ongoing concern. Therefore Engel offered a different approach of integrating ongoing assessment with what the teacher is already doing, rather than the focus of a “standardized testing” process done in a period of a week or two.

With students taking more and more tests every year, resulting in more “teaching to the test”, teachers end up designing their curriculum to help the students do well on high-stakes exams. An issue with “teaching to the test” in second grade is that students are receiving less instruction in reading, writing and arithmetic. Curriculum in reading then becomes dull and perfunctory with little time given to rich reading and writing experiences (Engel, 2007). Basically, students and faculty are so focused on teaching to the assessment that the value of the education tends to be devalued.

Summary

As discussed, the common thread is that standardized testing in elementary school or in the K-12 school system in general, is challenging, as it causes much unneeded stress and anxiety. Though some researchers’ might feel that standardized testing is a necessary evil, the effects of testing as discussed by most researchers, illustrates that the negative implications are greater than the positive.
Discussion in research of the concern of second graders and testing (Engle, 2007; Papay et al., 1975) has been ongoing for 35 years. That focus continues as we see in the work of Engle (2007). This study contributes to this body of knowledge as it addresses the following research question: What are the effects of STAR testing on second grade students, relating to student affect?
CHAPTER III

Methodology

The purpose of this qualitative participant action research was to examine the effects of standardized testing on second grade students, relating to student affect. This research was conducted using surveys and teacher observation journals. Second grade students were asked to complete a survey twice a day regarding their test anxiety and stress, during the two weeks of STAR testing in spring 2011.

Setting

The study took place in a second grade classroom. The K-3rd elementary school where this study was conducted is located in an upper-middle class urban fringe of a mid-size city. The K-3 school is an inclusion school, with students with disabilities mainstreamed into the classroom.

At this school, only second and third graders participate in STAR testing. Based on the 2009-2010 data published through the Dataquest website, the school’s second and third grade demographics are made up of 77% Caucasian students, 9% Asian, 8% Hispanic or Latino, 5% Filipino, 1% African American and 1% Native American. Of the 2nd and 3rd graders who took the STAR tests 2% were English Learners and 7% were students with disabilities.

During the 2009-2010 school term, 185 students at this school took the STAR assessments. The school’s growth API score for 2010 was 903 and their AYP was met in nine out of nine AYP criteria (California Department of Education, 2010). This school is considered to have high test scores and parents move to the district so their children can attend this school.
Participants

A total of twenty students participated in this study. The student demographics of this class include two English language learners and one blind student who can read and write only in Braille. This student has a full-time aide to help him understand visuals in the room. The class is made up of five percent Hispanic, five percent Asian American and eighty percent European-American.

The students receive all instruction from the researcher during the day, except for when the students go to music, computers, library and science, which takes place outside of the classroom. All students take all tests within the classroom. Only the blind student has an Individual Education Program (IEP) requiring test accommodations, which include for the test to be in Braille and that he receives double the time on timed-tests. The students take weekly spelling tests, reading comprehension tests and biweekly math tests. They also take two thirty-page language arts theme tests each trimester.

Materials

Data was gathered qualitatively through a survey (see Appendix A) which each participant took prior to each STAR test and after completing each test. The purpose of this survey was to evaluate the students’ anxiety before and after a test. The survey, which the students refer to as “The I Feel…Chart”, consists of a half sheet of paper with six different “happy” faces on it. Each face represents a different feeling (“great”, “fine”, “nervous”, “scared”, “sad” and “sick”). The survey also included a question, “I feel ______ because I ________”, asking the students to give a written response of why they felt the way they did.
Data was also collected through the researcher’s observation journal. Each day of STAR testing, the researcher would write observational notes on the students’ behaviors and emotions in the classroom. The researcher looked for any discrepancies between the students’ usual behaviors and emotions. Data was also collected from students’ notes and drawings during testing.

Design and Procedures

This study was conducted over a five month period and consisted of four phases: (a) Phase One: Literature Review and Survey Development; (b) Phase Two: School Site Approval and Human Subjects Approval; (c) Phase Three: Data Collection; and (d) Data Analysis.

Phase One

*Literature Review.* Reviewing the literature served as an opportunity to evaluate various methods of assessing student affect in the classroom, along with examining the effect of high-stakes testing on students. Data from existing research were gathered in order to create a survey for younger students.

*Survey Development.* The survey, which the students refer to as "The I Feel…Chart", was created by the researcher with young children in mind. The survey was adapted from the “Faces Pain Scale” (Bieri, Reeve, Champion, Addicoat & Ziegler, 1990) that hospitals use to ask children what level of pain they are experiencing. It includes words and pictures of faces of different emotions that describe the words above each face. The pictures are helpful for those students who have difficulty with reading or understanding what the words mean. While there are other measurement tools available that assess student affect, Pekrun and colleagues
concluded that a smaller research instrument needed to be created for children and for practical application in the classroom (Pekrun, Goetz, Frenzel, Barchfield & Perry, 2011).

A pilot study was conducted a year in advanced with another class of second grade students. This was to ensure any errors were discovered and resolved. Preliminary trials must be conducted on any new survey being created to fix any discrepancies (Pekrun et al., 2011). The survey was then implemented in the classroom to ensure that the students would be comfortable with the survey by the time STAR testing took place.

The students had the option as to whether or not they wanted to participate in the survey each day without penalty. Participants were informed that information would be collected anonymously so as not to identify their thoughts and affect.

**Phase Two**

*School Site Approval.* Approval from the school site where the study would take place was required prior to the start of the study. Permission was obtained through a signed letter from the school site's principal.

*Human Subject Approval.* Human Subjects approval was required prior to the start of the study. Permission was obtained through the Committee for the Protection of Human Subjects of California State University, Monterey Bay. The researcher followed the procedures as required by this committee. An application to the review board was filed and included the waiver of signed consent, signed assent, signed school site approval and the survey.
Phase Three

*Data Collection.* Once STAR testing began, the students were asked to answer the survey each morning of STAR testing and again after they had finished each section. The surveys were administered by an outside teacher. The purpose of this is to evaluate whether STAR testing has any effects on the student’s test anxiety. When given “The I Feel...Chart” each day, students first wrote their name or student number, the date and the test they were about to take or just took. Then the participants were asked to circle how they were feeling about the STAR test they were going to take or just took. Underneath the face pictures is the word “because...” Here the students wrote why they were feeling the like the face they circled.

When given the survey before the test, the students were asked to “tell how you feel about taking test”. After the test, the students were asked to “tell how you feel about the test you just took”. The participants were familiar with taking the survey. It was something that the students used themselves to acknowledge their emotions and the way they felt. The class regularly worked on emotions and feelings and had weekly classroom meetings to discuss their feelings towards others where the students used “I feel...” statements to express their feelings towards another classmate or teacher. The participants were encouraged to explore their feelings, express how they feel and to understand that it is okay to feel what they were feeling and to acknowledge the way others felt.

Observations were also written in the researcher’s journal documenting the behavior, attitude and mood of the participants each day of testing. Observations were documented during the two weeks of STAR testing. Those observations were used to document information that
might have provided insight to the question of whether or not taking the CST’s has an effect on a student’s behavior and emotions.

**Phase Four**

**Table 1**

*Data Analysis Table*

<table>
<thead>
<tr>
<th>Research Question</th>
<th>Data Source</th>
<th>Data Analysis</th>
</tr>
</thead>
</table>
| Q: How does STAR testing effect second grade students? | • “The I Feel...Chart” Survey  
• Observations/Teacher’s Journal  
• Student writing/drawings | • Coding based on emerging themes  
• Data sources analyzed for similarities & differences |

*Data Analysis.* The data consisted of completed surveys and journal entries. Through the collection of the surveys and observation journal entries, prevalent themes were identified and analyzed. The surveys and journal observations were coded based on emerging themes relating to student affect. The coding scheme was structured to focus on the students’ emotions, behaviors, and attitudes. These themes were analyzed for similarities and differences regarding the students’ test anxiety.
Chapter IV

Findings

The purpose of this study was to address the following research question: What are the effects of the STAR testing program on second grade students, relating to student affect?

In California, second graders experience high-stakes testing for the first time in their academic career. During STAR testing, some teachers tend to observe abnormal behavior from some of their young pupils. The question is whether or not this behavior is a reflection of the students’ affect in relationship to testing.

Several research studies found that students of any age experience stress and anxiety when taking tests (Cassady, 2004; Clovis, 2010; Engel, 2007; Graham, 1984; Papay et al., 1975; Putwain, 2007). Testing second graders is a state law in California; however, it is not mandatory to meet any federal requirements. Engel (2007) stated that testing second grade students was less reliable than the testing of older students due to the fact that young students are focused on the mechanics of test taking, filling in bubbles and handling test booklets, than they are on the cognitive tasks asked in the test.

Results of the Data Analysis

In this chapter, the results of the analysis of the data sources, consisting of the student surveys and the researchers’ observation journal, are reviewed. Students were given a pre- and post-test survey (see Appendix A) to complete on each of the 7 days of testing (including the day before testing began when they took the STAR practice test). The survey asked the students to fill in their name or student number, the date, followed by the test they were about to take (pre-test survey) or the test they just took (post-test survey). The students then answered the question,
"I feel ______ because I ________." To answer how they felt, the students circled one of six faces showing different emotions, "great", "fine", "nervous", "scared", "sad", or "sick" (nauseous/sick to the stomach). Then they responded to the question with their own words as to why they felt the way they circled.

This analysis begins by discussing the general observations for the entire class based on an analysis of the surveys, followed by a discussion of possible factors influencing students' responses. Finally, this chapter will conclude by addressing the strong emotional responses observed among two students in the class.

After analyzing the surveys and observations from twenty second grade participants over seven days of testing, it appears that a number of students experienced negative affect every day of STAR testing. Student responses seemed to be influenced by academic performance, the test content and the testing procedures. Two students expressed a strong emotional response due to testing during the week, which was much different from their usual behavior.

**General Overview of Survey Results.** An analysis of the survey results indicated that the class appeared to have split responses. Half of the class experienced some form of negative affect every day of testing and the other half appeared to have experienced minimal to no anxiety daily. The data showed that an average of ten students responded "fine" or "great" for each survey and the other ten students responded "nervous", "scared", "sad", or "sick" for each survey. Only three of the students who marked "great" or "fine" did not report any negative affect on any day during testing. They responded "great" or "fine" every day of testing. Whereas the other seven students, who responded "great" / "fine", also responded that they had
experienced some form of negative affect during the week as well, even if on just one survey. This shows that seventeen out of twenty students (85%), (including the seven minimal negative responses with the ten students who showed anxiety daily), experienced some form of test anxiety or stress during STAR testing. It appears that a majority of the class had a negative affect towards testing during the week.

The class appeared to show the most negative affect on the first day of testing and on the last days of the language arts and the math sections. Twelve out of twenty students responded that they felt “nervous” or “scared” on the pre-test survey on the first day of testing. While ten students felt “nervous”, “scared” or “sad” on the post-test survey on the last day of the language arts section and thirteen students felt “nervous”, “scared” or “sad” on the post-test survey on the last day of the math section. Eleven of the twenty students said that they felt the same on the last day of the math section, whether positive or negative, as they did on the last day of the language arts section.

Students’ written responses to the question: “I feel “great”/ “fine”/ “nervous”/ “scared”/ “sad”/ “sick” because I _____________”, revealed their apparent concerns regarding their academic performance. Students, who felt a negative affect on the last day of the two test sections, explained in their written responses that they felt that way because they were afraid of their score. On the pre-test survey of the first day Student 2 responded, “I feel nervous because I think I will get a lot wrong.” Student 9 wrote on the post-test survey on the last day of the math section, “I feel nervous because I am worried about my score.” While Student 3 commented on the post-test survey on the last day of the language arts section, “I feel nervous because I didn’t
know the answers.” This evidence suggests that their worries were based on their fears of their academic performance.

When evaluating the survey responses between the language arts sections and the math sections of the STAR tests, the results for the students’ emotions were fairly consistent across the two subjects. The students seemed to be equally “nervous” in language arts as they were in math, as well as the students who responded that they felt “great”/ “fine”, “sad” and nauseous/“sick” to their stomach. These categories had similar responses from the students during both subject matter sections of the test.

However, twice as many of the students responded that they felt “scared” during the math section compared to the language arts section. Students who felt “scared” on the post-survey on the last day of the math section said that they were afraid of how they performed. Both Student 17 and Student 18 wrote identical responses, “I feel scared because I think that I did [badly].” Student 20 responded, “I feel I scared because I don’t think I got them all right.” Student 9 wrote, “I feel nervous because its math,” on the first day of the math section.

When comparing the boys’ responses to the girls’ responses, seven out of ten boys responded that they felt some sort of negative affect during the math section, while nine out of ten girls wrote that they felt a negative affect towards the math portion of the test.

With three days of testing for each subject matter, language arts and math, and two surveys a day per student, each student took six surveys in the three days of the math section. Therefore the twenty students took a total of 120 surveys during the math section of the STAR test. The boys took a combined sixty surveys during the three days of math and the girls’ also took a combined
sixty surveys. The seven boys, who gave a negative affect response during the three days of the math section, responded a combined twenty-two times, out of the possible sixty of the boys’ surveys, that they felt some sort of test anxiety. The nine girls, who responded with a negative affect during the three days of the math section, gave a combined thirty-seven negative responses, out of the possible sixty girls’ responses. This evidence suggests that the students may have been more anxious about their test performance in math than in language arts and that girls may have more test anxiety towards math than boys.

Factors Influencing Students’ Responses. Student responses seemed to have been influence by test performance and the test itself. Students who felt “great” or “fine” explained why they felt that way in their written responses. Those students responded that they had a positive affect towards the tests because they either felt positive about their performance on the test or because they said that after a few days of testing they felt used to it. Student 15 wrote on the pre- and post-test surveys for the last couple of days that “[she] felt “great” or “fine” because I am used to it now.” On the fourth day of testing, Student 15 wrote, “I feel great because I have been doing this for three days.”

Participants, who responded that they had negative affect towards the testing, explained that it was for the same reasons, test performance or their fears of the test itself. Over half of the students who responded that they felt “nervous”, “scared”, “sad”, or “sick” wrote in their written responses that it was due to a fear of failing. Students 4, 8, 17 and 19 gave identical responses on their pre- and post-test surveys, that they “felt nervous because they might not get 100%”. Student 8 had responded that she felt “great” on the first day of testing, which was only a
practice test to show students how the next six days would go; yet on the second day of testing, which was the first day of language arts, Student 8 shared that she was “nervous” and she drew a picture on her desk of herself crying and frowning (see Figure 1).

Upon noticing her drawing, “I asked her why she drew the picture, and she said that it was a picture of her, nervous, because of the tests” (researcher’s observation journal, May 3, 2011). A similar situation occurred with Student 7, who wrote she was “sad” on six out of seven of the post-test surveys. On day two of the tests she wrote “HELP” on her desk (see Figure 2).
This evidence implies that the students’ affect is greatly influenced by their self-perception of their academic ability. Those who felt confident about their answer choices and how well they would perform responded that they had a positive affect towards the STAR tests; while those who marked that they had a negative affect during STAR testing were afraid of how well they scored.

Other students who responded that they felt negative affect during STAR testing commented that it was due to taking the actual test. Student 7 responded on four different post-test surveys that she “felt sad and tired because it was long and I might have [gone] out of the bubbles.” While Students 4, 14, 15, 17 and 20 shared that they were “scared”, “nervous” or “sad” “because they have never [taken STAR] tests before” and “[they weren’t] sure what to [expect].” During the third day of testing, Student 2 wrote phrases that she had experienced during STAR testing. She wrote, “STAR testing, Stop, do not enter!” which was on the five
doors of our classroom. Underneath it, on the second day of the math section, she added,

“Repeat: 2 times” (see Figure 3).

\begin{figure}
\centering
\includegraphics[width=0.5\textwidth]{star-testing-stop.png}
\caption{Student 2 wrote, “STAR testing. Stop, do not enter!” on the third day of testing. “Repeat: 2 times” was added during the second day of the math section after hearing the test proctor repeat the math questions two times each.}
\end{figure}

It’s possible Student 2 wrote these final words during the math section because all math questions are repeated twice for the students. The second grade test booklets do not have the questions written in them, only the answer choices. This is frustrating for those students who are visual learners and need to see and read the questions themselves for understanding.

**Strong Emotional Response.** Student 5 and Student 14 had a different response than the rest of the participants as demonstrated by their strong emotional response towards the STAR testing. These two students experienced episodes of crying during a total of five different testing days. Student 14 was found crying during the first day of the language arts section and the first
day of the math section. On Student 14’s surveys, she responded that she felt “sick” (nauseous) seven out of the fourteen surveys. The first day she cried, she answered that “[she felt] “nervous” and “sad” because [she] had never [taken] this test” on the pre-test survey and that “[she felt] “sick” because she had a tummy ache,” on the post-test survey.

Later in the week, Student 14 cried again during the math section of the STAR test. The researcher observed, “three-fourths of the way through the test, I caught [Student 14] crying while taking the test. I had noticed she was struggling with taking the test; when I asked why she was crying, she said that she didn’t feel well and didn’t want to finish the test” (researcher’s observation journal, May 5, 2011). Student 14’s survey response for that day showed that she felt “great” before taking the test, and “sick to her stomach” after finishing.

Student 5 had a similar experience. Student 5 had a strong emotional reaction to the testing on the third, fifth and sixth day of testing. On the third day of testing, the researcher observed Student 5 with her head down during the test. “I went over to Student 5, and found that she was crying. When asked “what’s the matter?”, Student 5 commented that she was sad that she was the last one still taking her test and that everyone else was done already” (researcher’s observation journal, May 4, 2011). On Student 5’s surveys for that day, she responded that she felt “sad” on both her pre- and post-test surveys. Student 5 wrote, “I feel sad because I was sad a lot. I finished last.” Student 5 had repeated experiences on days five and six where she felt that she couldn’t do the math or she was the last one done.

It seems that these episodes of emotional reactions to the STAR tests demonstrate how a few students are not able to handle the stress and anxiety of taking high-stakes testing, like those
of the STAR tests. These two students, who have never shown strong emotional reactions in
school before, were drawn to tears and fearing that they were not doing as well as the rest of their
peers on the tests.

Conclusion

The results of the student surveys provided evidence that a majority of the students in the
class experienced stressful emotions before, during, and after taking the STAR tests. When
evaluating the responses from the participants' pre- and post-test surveys, along with the
observations of students who cried during the tests, it shows that more than half of the
participants, at least on one survey during testing, said that they felt a negative affect. Though
there were three students who said that they felt only positive affect during testing each day, the
majority of the group experienced a negative affect towards testing. The following chapter
discusses the findings further, along with implications of this study and presents
recommendations for further research.
Chapter V

Discussion

This study investigated the effects of standardized testing on second grade students. The findings from the twenty participants' affect surveys and drawings, along with the researcher's journal observations showed that 85% of the participants experienced negative affect every day during testing. Two students even had such strong emotional responses to the testing that they were drawn to tears during the actual testing. Others students responded that they had such a huge fear of failing the tests.

These results suggest that STAR testing in second grade is a stressful experience for the students. The participants showed the most test anxiety on the first day of testing, along with the last day of the language arts section and the last day of the mathematics test section. While the students were fairly consistent in their responses between the two different test subjects, (language arts and math), the students were equally "nervous" during the math section as they were during the language arts section. There were twice as many students who were "scared" during the mathematics portion, than there were during language arts. The students had so much pressure to perform well academically, that, as Engel explained (2007), the students do not perform as well as they should, to show their true academic knowledge, therefore the tests are irrelevant.

The majority of the students explained their affect, either negative or positive, in their written responses, by how well they thought they performed academically. This suggests that student’s may be basing their anxiety on their academic achievement in class. It’s possible that the participants felt this way because of what they had experienced in school already with having
to perform well on tests or the pressure that is put on them in their daily academic life to achieve high scores. It seems that students felt the way they did during STAR testing because of their prior knowledge of their academic ability.

It appears that the students have more anxiety over taking a math test, than they do a language arts test, especially the girls. The girls seemed to have shown the most anxiety and stress during the math portion than the boys did. This finding is similar to the work of Wigfield and Meece (1998), who found that there was more anxiety towards math assessments in general and that girls experienced more anxiety towards math assessments than boys did. It was obvious that both the boys and the girls had a greater negative affect towards math testing than language arts; the girls responded with a negative affect response more often than the boys.

These findings will be used to inform second grade parents, teachers and principals about how they can better help to relieve the stress and anxiety during STAR testing. It’s important for teachers, parents and administrators to do what they can to take the pressure off of these tests. Especially at this age, the students should not be worrying about how well they did, only that they tried their hardest and did the best they could. It’s a shame so much emphasis is placed on test scores, leading to the added pressure on the students. One solution that might make take the anxiety off of second grade students would be to shorten the test. If the test was only a few pages long, just to get a quick glimpse of what the students know, it may lighten the stress that the students experience. Then again, as Papay and colleagues (1975) expressed, testing of any sort may be too traumatic for some students.
Limitations of Research

Due to the researcher’s time and resources, the data used for this study came from only one classroom environment and therefore the findings cannot be generalized to a broader context. Time played a factor as a limitation because with STAR testing taking place only once a school term, the researcher was only able to collect data for one round of STAR testing. Having more than one group of participants to be able to analyze data for multiple STAR tests throughout the year(s) may have given an even deeper level of understanding.

Further Research

Repeating the study with the same group of participants during STAR testing in their third grade year would provide an opportunity to examine if the anxiety that second grade students undergo is only because it is their first encounter with STAR testing. Repeating the study with the same group of students through their entire academic career, would present an advanced understanding of whether or not the students experience less stress as they take the STAR exams year after year, or if their anxiety with testing stays the same over the years.

Another focus for further research could include an examination of the students’ test preparation process. Test anxiety has only been focused on the testing phase and not the test portion. It would be interesting to examine if students experience anxiety during the month of test preparation before testing begins.

Conclusion

Second grade students experience levels of anxiety and stress before, after and during high-stakes testing. Even though students of all ages experience test anxiety, it’s important to ask whether the testing of young children in their early academic career is really necessary. Should
we put our children under the pressure of high-stakes testing in second grade? Since the testing of grade two students is currently a California state law, parents and teachers should work to eliminate the stress and anxiety in the classroom during testing.
References


Appendix A

Name: Date:

Today's Test:

I feel...

Great!! Fine Nervous Scared Sad Sick

Because I...

Survey adapted from Faces Pain Scale (Boo, Reeve, Champion, Addicott, Zagier, 1993)