

Action Research Plan

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TE 861C
Summer 2010

Introduction

There is a reoccurring theme that I hear from students and parents alike when it comes to assessments; "I don't know why my child/I do so poorly on tests. I am just a poor test taker." I have so many students who perform well on informal assessments and content mastery in the classroom every single day. They are contentious students who are on task in class, do their homework, and they even go the extra mile when it comes to seeking after school help. Most show the desire to perform well.

Let's face it. Standardized tests and formal assessments play a big role in assessing student content knowledge on a school, district, county, and state level. The push for using data on common assessments is utilized heavily in my district. The American College Testing exam is now part of the Michigan Merit Exam given to our eleventh graders to assess schools on how they are fulfilling the No Child Left Behind Act of 2001. The score of this test is often a requirement to get into certain colleges and universities.

Regardless of opinions about standards-based assessments, it is clear that our students need the skills necessary to perform well on such assessments. I worry about my students who can communicate their content mastery in a non-assessment environment, but freeze up when it comes down to a test.

What is it that makes these students so anxious when they are testing? And what is it that I can do as their teacher to help them perform to the best of their abilities on formal assessments and ease their signs of anxiety?

Literature Review

There are many factors that contribute to test-taking abilities and can affect the performance on these summative assessments.

First, we can consider test anxiety. Before we can measure test anxiety in students we need a clear definition and something to be measured. Test anxiety is worry of suffering a reduction in one's self image and self-efficacy, particularly its reflection in the eye's of significant others, concurrently with obstruction of cognitive processes and outstanding physical and mental discomfort. (Friedman & Bendas-Jacob, 1997, 12) There are many facets and questions that will need to be included in the student survey about test anxiety including fear or worrying, emotional symptoms, concern for self-image or self-efficacy due to failure, and social status changes due to performance.

Research also indicates problems with assessment data as an indicator of student knowledge due to motivation. We make the assumption that all test takers want to perform to the best of their abilities and achieve high marks, when in reality, that is not the case. This foundational assumption rests on the notion of an *ideal test taker*, not a *real test taker*. (Ryan et. al, 2007, 11) Research also points to motivation and its effect on performance. This may be something to consider with students who are not making improvement with different techniques as the study progresses. Utility and interest can also play a role in performance on assessment. Does the student find value in taking the assessment? Do they find interest in mathematics at all? Do they see that mathematics skills are needed for something in their life?

Self-perception on math assessment grades show that there is generally a disconnect between perceived understanding and assessment grades. (Smith, 2002, 39) Students were not able to accurately judge their performance on a test that was just given. (Smith, 2002, 39) This information leads me to believe there is not a need for a student perception survey. The data would not prove helpful.

There is evidence suggesting exercises building test-taking confidence in the classroom may have a positive effect on test performance. (Smith, 2002, 37) Providing students with an opportunity to become familiar with test-like items in a non-threatening environment will in turn help their confidence on the actual exam. Confidence will help relieve some test anxiety as well. However it is important to note that false confidence can become an issue. Students can feel over confident and incorrectly answer problems. To help this issue, I would not provide students with similar problems, only similar formats of problems. If problems seem too similar,

a student may fall back on memorization of a numerical answer versus actually answering the problem by using the context given.

Methods

Why do students appear to underperform on final, summative assessments? More specifically, how does test anxiety play a role and how can I help those students find more success on such assessments?

Data Collection Methods and Purposes:

1. Compare the Michigan High School Content Expectations breakdown of my material taught to the breakdown of final assessment

Is my time weighted on the specific topics representative of what my assessment looks like? Is it representative compared to our power standards, which are the most likely to be on state testing?
2. Compare the perceived difficulty level of classroom work and final assessments (done with Geometry professional learning committee teachers)

In actually, we would analyze the difficulty and adjust the difficulty levels to be very similar. If the difficulty levels are different, I can not analyze the data I will be collecting accurately. Differences in difficulty could actually be the issue on their performance on such assessments. I have to ensure that will not be a factor.
3. Concept mastery in non-assessment form

Concept mastery will be collected as data in non-summative assessment formats (e.g. class work, activities, presentations, homework, etc) It will be represented by their grade as a percentage for that unit.
4. Concept mastery in summative assessment form

Concept mastery will be collected as data in a summative assessment format. This would be an average of the assessments for that unit.
5. Test Anxiety Survey

This tool will help me identify students who have test anxiety. They must show that they are “suffering a reduction in one’s self image and self-efficacy, particularly its reflection in the eye’s of significant others, concurrently with obstruction of cognitive processes and outstanding physical and mental discomfort. “ (Friedman & Bendas-Jacob, 12) The survey that Friedman and Bendas-Jacob provided will identify these issues by question. I adjusted some words to be better fitted for my students understanding. I also added in questions pertaining to the way they prepared for the assessment so that I can vary that to help find what methods will help the students.

6. Clipboard Notes

After my students with test anxiety are identified, I can take clipboard notes about their understanding of topics as we go along in class. This will identify specific topics that they have mastered. It will be a good resource to go back to and compare their assessment data to the specific concepts they have appeared to master in the classroom.

7. Journal

The journal will help me put together my thoughts as I go along. I may use that to help brainstorm ideas about how to help my students with test anxiety. It will be a cumulative and sequential log of what I am doing in the study.

Instrument	Timeline	Description
1. Compare the Michigan High School Content Expectations breakdown of my material taught to the breakdown of final assessment	Already Completed	Over the past two years, as a professional learning committee, we have aligned our assessments to the state standards and in turn edited our curriculum to match the material.
2. Compare the perceived difficulty level of classroom work and final assessments (done with Geometry professional learning committee teachers)	September and ongoing	Beginning with our first professional learning community meeting on September 15th, we will start with our first unit of material and edit our assessments and class materials to be of the same difficulty level. We will continue with the other units as we meet every other Wednesday throughout the school year.
3. Concept mastery in non-assessment form	September and ongoing after each unit of instruction	Each student's classroom grade will be collected and reported as a percentage per unit.
4. Concept mastery in summative assessment form	September and ongoing after each unit of instruction	Each student's assessment grade will be collected and reported as a percentage per unit.
5. Test Anxiety Survey	September and ongoing (post-assessment)	The survey will be given to ALL students after each assessment.
6. Clipboard Notes	Everyday after initial students are identified	I will document identified students' classroom mastery of concepts.
7. Journal	Everyday	I will reflect and document my process in the study as I go.

Data Analysis

Data is only worthwhile if I have done my job of trying to help eliminate other factors that could be affecting student performance on assessments.

Instrument	Purpose:
<p>1. Compare the Michigan High School Content Expectations breakdown of my material taught to the breakdown of final assessment</p>	<p>This data ensures that the material I am teaching is aligned with what we are assessing. The weight of topics that I teach will be as similar to the assessment weighting as much as possible. This is in effect, trying to take out the possibility of poor test scores to my alignment of curriculum. I want to keep the focus on test anxiety.</p>
<p>2. Compare the perceived difficulty level of classroom work and final assessments (done with Geometry professional learning committee teachers)</p>	<p>Again, if I want to study test anxiety I have to make sure that the difficulty of the formal assessments is the same as the materials I am using everyday in the classroom. Without addressing this issue, difficulty of the assessment could be a very likely reason students will not perform well on such assessments. The teachers in my professional learning group are perfect people to assess the difficulty levels of my classroom materials and assessment pieces. We would again edit material so that the difficulty levels coincide.</p>
<p>3. Concept mastery in non-assessment form</p>	<p>This data will represent a student's performance in a non-summative assessment environment. The average grade (without assessments) will represent the percentage of material mastered in the classroom setting. I will re-calculate this grade separately every unit.</p>
<p>4. Concept mastery in summative assessment form</p>	<p>This data will represent a student's performance in a non-summative assessment environment. The average grade of assessments each unit will represent the percentage of material mastered from a summative assessment point of view. I will re-calculate this grade separately every unit.</p>
<p>5. Test Anxiety Survey</p>	<p>The test anxiety survey (see appendices) will be given to all students to identify which students suffer from test anxiety and be a constant indicator of whether or not students are showing improvement with their test anxiety symptoms.</p>
<p>6. Clipboard Notes</p>	<p>The clipboard notes serve as a way to monitor and take notes of student success in the classroom. It will be more data to look back on to see when/if a student demonstrated concept mastery in the classroom, compared to specific performance on the assessments. Are students in fact performing differently on assessments than they do in the classroom or does it just appear to be that way? This will serve as data for each</p>

	individual student. It will also serve as reference to the different test preparation techniques that each student is using in the particular unit.
7. Journal	The journal will be a tool in which I can collect data and ideas for the following unit. As I teach it will be a place to write down my personal thoughts and reflections. It will also be updated each day so that it serves as a timeline of the study.

The most important factor when analyzing data will be to notice trends in students' improvement from classroom to assessment each unit. Is there a specific method that seems to mark improvement for most kids that suffer from test anxiety? Or does it vary from student to student? What helps eliminate the symptoms of test anxiety? Again, does it vary per student or is there a common trend?

References

- Friedman, I. A., & Bendas-Jacob, O. (1997). Measuring Perceived Test Anxiety in Adolescents: A Self-Report Scale. *Educational and Psychological Measurement, 57*(6), 1035-1046.
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- Ryan, K. E., Ryan, A. M., Arbuthnot, K., & Samuels, M. (2007). Students' Motivation for Standardized Math Exams. *Educational Researcher, 36*(1), 5-13.
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Appendices
SURVEY

Rate each of the following questions with a number 1-5 representing the following scale:

- 1- Strongly disagree
- 2- Disagree
- 3- Neutral
- 4- Agree
- 5- Strongly Agree

1. If I fail a test I am afraid I shall be rated as stupid by my friends. _____
2. If I fail a test I am afraid people will consider me worthless. _____
3. If I fail a test I am afraid my teachers will criticize me. _____
4. If I fail a test I am afraid my teachers will believe I am hopelessly dumb. _____
5. I am very worried about what my teacher will think or do if I fail his/her test. _____
6. I am worried that my friends will get high scores in the test and only I won't. _____
7. I am worried that failure in tests will embarrass me in front of others. _____
8. I am worried that if I fail a test my parents will not like it. _____
9. During a test my thoughts are clear and I neatly answer all questions. _____
10. During a test I feel I'm in good shape and that I'm organized. _____
11. I feel my chances are good to think and perform well in tests. _____
12. I usually function well in tests. _____
13. I feel I just can't do well on tests. _____
14. In a test I fell like my head is empty, as if I have forgotten all I have learned. _____
15. During a test it is hard for me to organize what's in my head in an orderly fashion. _____
16. I feel it is useless for me to sit for an exam; I will fail no matter what. _____
17. Before a test it is clear to me I will fail no matter how prepared I am. _____
18. I am very tense before a test, even if I am well prepared. _____
19. While I am sitting in a test, I feel my heart pounds strongly. _____
20. During a test my whole body is tense. _____
21. I am terribly scared of tests. _____
22. During a test I keep moving uneasily in my chair. _____
23. I arrive at a test with no serious tension or nervousness. _____
24. I feel I am always prepared for my tests. _____
25. I perform well in class and understand the material presented. _____

What did I do to prepare for this exam? (Include date and approximate time lengths.

Friedman, I. A., & Bendas-Jacob, O. (1997).

STUDENT NAME:	UNIT OF STUDY:	NON-ASSESSMENT GRADE:	ASSESSMENT GRADE:	METHODS USED FOR ASSESSMENT PREPARATION:
A				
B				
C				
D				
E				
F				
G				
H				
I				
J				
K				
L				
M				
N				
O				
P				
Q				
R				
S				