

TE 861C Action Research Project

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Introduction

I started this school year in a new district, Lincoln Park MI. This district is an urban school district with low-income families. Students historically have been low achieving and have many behavior issues. As the school year began I noticed many students who were struggling to maintain a passing grade. Students were completing homework and scoring decently on these assignments but were failing classroom assessments. As I am entering into my second semester with my students I am beginning to look for a strategy that will increase assessment proficiency.

Between the other 7th grade math teacher and myself, our current students have had three summative assessments. Our district measures our students with an 80% or higher proficiency with each summative assessment. In our first unit assessment we had 0% proficient, in the second assessment we had 15% proficient, and in our third semester assessment we had 23% proficient. We are choosing to stick with the 80% proficiency as our measure for data to ensure consistency with our district. With the data we have acquired so far this clearly raises the question, why are our students not showing proficiency on unit and semester assessments?

As a team, my partner teacher and I have sought out others in the mathematics department from sixth thru twelfth grade to get some ideas of why our data may be so low and what we can do to combat this. Since we are both new to the district we began asking questions about what is considered 'normal' for this district. With the help of our colleagues we collected some ideas and background information to consider when approaching these failure rates. Our colleagues have found that in their experience time is our biggest enemy. The longer students have between assessments the lower their ability to retain and perform on these assessments with passing grades. This project came in at the perfect time because the question that I am posing

directly correlates to what we hope to achieve within the next school year (2018-2019). That question is, what is the impact of standard based assessment rather than unit based assessment on 7th grade mathematics students' academic performance? Therefore to address the proposed question we are going to shorten the amount of time between assessments and the amount of information on each assessment (ie: one standard at a time rather than multiple). This approach will help us combat the struggles that have been identified by our colleagues and ourselves in our students of time between instruction and assessment. The students that will be partaking in this research are 300 7th grade students between the other 7th grade math teacher and myself.

Since we live in an urban school district where many students experience extreme trauma in the home, we have to understand how that affects them as academic students. I had never thought about this connection before until my colleagues had brought this to my attention. I needed to know more and find data that I could reference to know how some of these contributing factors may be affecting these students overall performance. In Eric Jensen's book *Engaging Students with Poverty in Mind*, he addresses that retention rate in low SES students is weaker than those who are not. Jensen suggests that poor diet and poor living conditions has an effect on the brain and cause these children to have a lower ability to obtain and retain information. Also Jensen talks about the stress of low-SES students specifically the stress they encounter at home. In his book it states, "Stress exerts a relentless, insidious influence on children's physical, psychological, emotional, and cognitive functioning – areas that affect brain development, academic success, and social competence" (Evans, Kim, Ting, Teshler, & Shannis, 2017). This information provides insight as to why my students may be failing, or performing at a lower than proficient state. This is not the excuse to allow them to continue in this pattern, but

rather it helps myself and other educators to better meet the needs of our students. Therefore by participating in this research project I am seeking to determine the effect of smaller assessments given more frequently.

Literature Review

The overarching theme of my action research project is to measure the effect of more frequent assessment based off of a single standard rather than large units with multiple standards. This topic of research is important to me because as a teacher in, what is considered an inner city school, there are relevant risk factors to students who are immersed in a lower income environment. One of the most common effects, which I will be discussing further, is retention rate. The trauma that many inner-city students are facing within their own home has an effect on their ability to retain information over long periods of time. Therefore I am suggesting that by more frequent assessments with less information, this will provide students to opportunity to show better performance on material they have been taught.

Retention, Standard Based Grading, and Frequency of Assessment

Eric Jensen focuses on students ability to retain and use information that they have been taught in his book *Engaging Students' with Poverty in Mind*. Jensen says there are a handful of exposures that students are facing in their home and these exposures have an effect on them stating, "Each of these health-related factors has a significant effect on cognition and behavior" (Jensen 2013). There are two exposures that Jensen talks about that have impact on the development of the brain. One of the two is how lead exposure correlates with poor working

memory and a weaker ability to link cause and effect. This is relevant in about 50% of our community. Many of the homes are old and decapitated and parents are unable to maintain or improve the living environment. Jensen states that due to these exposures “..although your students may know the behavior rules, they won't necessarily understand when and how those rules apply.” The second major exposure that has an affect is “Poor nutrition at breakfast” lack of a balanced meal, “affects gray-matter mass in kids' brains” (Taki, 2010). Students who are in low SES environments are being exposed to factors that are not necessarily present in students who are in higher SES environments. Since they are facing these different exposures the research is showing the effect that it is having on their brains and their mental capacity. Therefore while they are fully functioning and capable beings the factors that are within their everyday experiences are actually inhibiting them from thinking and acting how they are expected.

Retention and assessment is an important topic for teacher in a low SES setting to be looking at. Students who are living in a low SES setting are also dealing with what is considered “trauma” within their home. This could be anything from improper nutrition intake (either little to none), abuse, drugs, being left home alone, or working to help pay the bills. It is important that we as educators take the factors that these students are facing at home into account when we are seeing them at school. An important part of understanding the trauma students face is to understand what parts of a typical classroom that may not work for students in a low SES setting. That is not to say we lower the expectation or give the student less opportunity but rather to create a more realistic and attainable approach for our students to keep them engaged and returning everyday. A study by Douglas B Reeves explains what he experienced in a lower income school when it came to how they assessed their students. “..student performance that is

less than proficient is followed by multiple opportunities to improve performance. Most of these schools conducted weekly assessments of student progress.” (Reeves, D. 2003) By allowing students multiple opportunities to reach proficiency allows them to not be discouraged and lost when they do not meet the proficiency standard but allows them to work towards proficiency so that they feel accomplished and ready to move forward. Also, the main point I want to show is that this teacher gave frequent weekly assessments. This is key to measuring true proficiency. This localizes what the student is struggling with, in my case it would be the standard strand they are not meeting proficiency in, giving the teacher a more direct understanding of how to help the student more intentionally.

“Standard Based Assessment and Grading provides students and teachers with descriptive information on skill development within the required curriculum.” (Reeves, D. 2003) Students are measured more effectively through SBAG. This also provides the teacher with more opportunity for differentiated instruction. In my experience of having 35 students in a classroom where 12 are special ed, 3 are high achieving, and the rest are somewhere in the middle it can be difficult to ensure each student is getting the most out of the lesson. Whereas with SBAG I can localize where my students are struggling and better meet them where they are at so that we are staying on pace and each student is being challenged in the way that best fits them. “A standards-based approach empowers teachers with information to guide instruction, it reduces meaningless assignments and paperwork, and, “it teaches what quality looks like” (Scriffiny, 2008, p. 73).

As a mathematics teacher my goal is to help students to understand and grasp mathematical principles in that align with the 7th grade standards. One of the downfalls of

middle school math is most of students grades are based on homework, extra credit, and makeup work. This does not necessarily provide a true picture of mathematical understanding. This is where SBAG is a valid measure of mathematical comprehension because the students grade is largely reliant on the SBA. As it is said in a research study done in Illinois, “Teacher bias is minimized in a standards-based approach.” (Marzano, 2010) This allows the grade for the student to reflect what they truly understand therefore we can better localize what the student is struggling with and help them more proactively. This grading scale minimizes student passing rate based on formative assessments rather than summative.

Description of Research Context

The research study that I will be performing will take place at Lincoln Park Middle school, just outside of Detroit. Lincoln Park is considered an inner city school that consists of about 900 students in grades 6-8. Students are primarily Hispanic and African American. There are 70% students that are on the free and reduced lunch program as well. Lincoln Park is a low performing school and many students are between 1-3 years behind grade level. The curriculum that we are using is Eureka Math as well as the online counterpart Tenmarks to supplement the material. Students have access to chromebooks in each of their classes. Therefore they have access to online programs and tools that could be used in the classroom to supplement curriculum. Math teachers have also been given a classroom set of TI-inspires for students to use as well. This can be challenging if material online is not completed in class because most students only have access to internet through their phone. Therefore students need ample amount

of time in class or they have to find alternative time during lunch to complete assignments, which proves to be difficult to get them to come.

The data for the study will consist of 300 7th grade mathematics students shared between my partner teacher and myself. The ratio of boys to girls is about a 60:40 percent split. The study will be measured throughout the entire school year. Class size ranges from 12-35 students, depending on the class period. Each class period lasts 48-minutes and consist of students at different academic levels. All students in the 7th grade class will be going through this study regardless of if they are with my partner teacher or myself. I hold no prior relationship to the students that are placed in my classes other than the relationship that is built throughout the year. No consent forms should be needed for my students since this study will be implemented through the curriculum we use throughout the year. I will ensure students will feel safe within my classroom by building relationships with them throughout the year and ensuring that I address any questions or needs they may require.

Some background information on my students is that many of them have jobs outside of school working for their parent's store, or babysitting their younger siblings. Many also have little to no parent involvement academically and socially; therefore there is a lack in homework completion and little to no studying for assessments. Also, student behavior is a large issue in our school. Students are provided advocates that will help them calm down and re-enter the classroom peacefully rather than get an immediate referral to the office. Advocates are adults who mediate between the teacher, student, and administration in hopes of altering student behavior before it gets worse. This has shown to lower write-ups and referrals to the office and keep the students in the classroom rather than sending them out as often. Therefore in the

position that I am in there is a multitude of things happening that are influencing my decision to run this particular study. My student's deal with trauma outside of the school hours, and when they come to me the following day they do not necessarily care what I am trying to teach them. Therefore I am trying to meet my students where they are and take into consideration what they are experiencing outside of school and how I can help aid them while they are in my care.

Research Methods

For my research data collection I have chosen to take a quantitative approach to my project. While I do have a touch of qualitative data within my project I will primarily be focusing on the quantitative data of my project. I chose this approach for my project because I am looking at the effect of standard based grading on the overall improvement of my students grade average as well as improvement in state testing. By comparing the amount of students that have reached proficiency, at Lincoln Park's standard of 80% with different mathematical standards this school year 2017-2018, compared to next school year 2018-2019, I will be able to see if there was improvement, no change, or a decrease in student ability. To have a consistent measure, as the pacing of testing will be different in the following year (2018-2019), I will be giving a pre-test and post-test for each unit. Therefore I will still have a standard baseline of data to compare and get a true reading on the data being collected. I will do the same with NWEA testing by looking at the percentage of students who have shown growth this year compared to next year.

I will also be distributing a survey to my students at 3 different points throughout the year (2018-2019), the beginning, the end of semester 1, and the end of the year. The survey will consist of different questions asking students how they feel about more frequent assessment

throughout the course and more focused instruction on each specific standard. I will take these surveys and compare them to the test data to see if how they feel aligns with how they are doing.

Analysis

Since our math program is divided into units I plan on taking the post-test data for each standard after the completion of a unit and comparing the data to the unit tests from this year (2017-2018). Our testing is taken on Tenmarks, our online program; therefore the data will be consistent from year to year making it a good analysis. On Tenmarks the data is collected into groupings by standard and you are given individual scores of students in each class as well as an overall class average. I will take whole grade data comparing at the proficiency standard of 80% from this year (2017-2018) and the following year (2018-2019). I will also be taking the NWEA scores and comparing the amount of growth from one year to the next. I will take the percentage of students from this year that had growth, based off of state standards, and compare it to the amount of students that grew in the following year. I will show this comparison through an excel document by graphing the data into a bar graph for easy comparison between each unit and standard.

For the qualitative data I will be giving each survey throughout the year (2018-2019) and collecting the data into groupings of how students feel about the more frequent assessment and pacing of the course. The groups will consist of Excellent, Good, and Bad reports. Each survey given will then be compared to the student test data thus far. Therefore if students are feeling “bad” about the frequent testing then I will look at the data of the student and see if they are failing or excelling with the more frequent assessment. This data may provide insight as to what

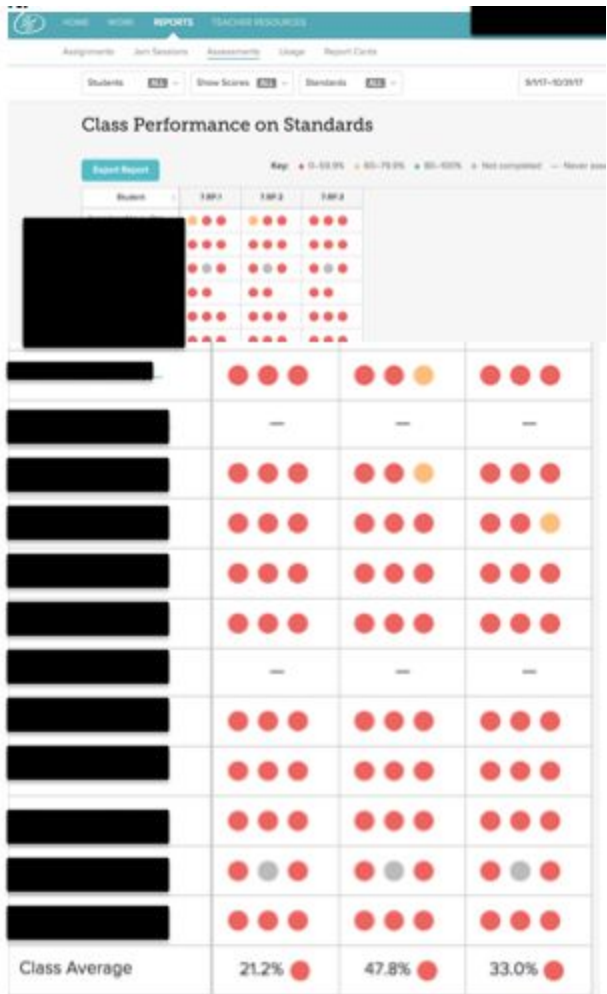
may or may not be working with this new approach as well as allow the student to feel as though they have a voice and can share their concerns or what they like with the new change.

References

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Appendix: Data Collection and Tools

A.



I will be using the program Tenmarks (Appendix A) to help me gather data. Tenmarks is an online program that corresponds with my district's curriculum, Eureka Math. Tenmarks has the capability to test students on one standard at a time or multiple standards. Using this program I am able to see how students performed on each standard given throughout this school year (2017-2018) and compare them to the test scores for the following year (2018-2019). This is incredibly helpful because it is all done for me and it is easy to compare scores from year to year. Each dot represents how many times the student was

tested on the standard. Therefore in this example this student was tested three times on each standard. One was the pre-test, two was the post-test, and the third time was a retake.

B.

Mathematics

				Achievement Status						
				Fall 2017		Spring 2018				
ID	Name	SP18 Grade	SP18 Date	RIT Range (+/- SEM)	Percentile Range (+/- SE)	RIT Range (+/- SEM)	Percentile Range (+/- SE)	Projected RIT	Projected Growth	Observed Growth
		***	***	221-224-227	46-53-60	***	***	230	6	
		***	***	207-210-213	17-22-28	***	***	216	6	
		***	***	192-195-198	3-5-7	***	***	201	6	
		***	***	218-221-224	39-46-53	***	***	227	6	
		***	***	208-211-214	19-24-30	***	***	217	6	
		***	***	202-205-208	11-14-19	***	***	211	6	
		***	***	213-216-219	28-34-41	***	***	222	6	
		***	***	202-205-208	11-14-19	***	***	211	6	
		***	***	205-208-211	14-19-24	***	***	214	6	
		***	***	220-223-226	44-51-58	***	***	229	6	
		***	***	208-211-214	19-24-30	***	***	217	6	
		***	***	211-214-217	24-30-36	***	***	220	6	
		***	***	200-203-206	9-12-16	***	***	209	6	
		***	***	188-191-194	2-3-4	***	***	197	6	
		***	***	197-200-203	6-9-12	***	***	206	6	
		***	***	188-191-194	2-3-4	***	***	197	6	
		***	***	210-213-216	22-28-34	***	***	219	6	
		***	***	201-204-207	10-13-17	***	***	210	6	
		***	***	218-221-224	39-46-53	***	***	227	6	

I will also be looking at NWEA scores (Appendix B) for my students. This is state testing that occurs in the fall, winter, and spring. Students are given measures of growth to meet each testing period. Then we are given their data to see if they met their growth goal or not. Therefore we are going to compare growth scores from Fall to Winter, Winter to Spring, and then an overall comparison for the year

from Fall to Spring. With this data we are looking to see if there were more students that grew from the current year to the previous year.

C.

Student Survey

How satisfied are you with your current learning in my class?

Circle one number

0 = completely dissatisfied; 10 = completely satisfied

1 2 3 4 5 6 7 8 9 10

Do you feel that the pacing of this class is appropriate?

Choose one

Too fast

Just Right

Too slow

Do you think that there is an adequate amount of homework to help you practice the material?

Choose one

Too much

Just Enough

Too little

Do you like the frequency of testing in math class? Why or why not?

Do you feel that the more frequent assessment helps your understanding of the material? Why or why not?

Do you prefer the more frequent assessments or do you prefer to go back to larger unit assessments?

Lastly my partner teacher and I will be giving an informal survey (Appendix C) to our students to seek how they are adjusting to standard based assessment more often. This survey will be given at four different points over the year. We are really just looking to see how students are adjusting to the more frequent assessments. We would like to take what they are communicating to us and see how their scores compare and also to see if it changes as the year progresses.