BYRAM HILLS CENTRAL SCHOOL DISTRICT
ARMONK, NEW YORK

Author: Kimberly Karoglanian

Title of Project: *Mastering Basic Math Skills*

Year: 2013-2014

School/Grade: H.C.Crittenden Middle School/ Grade 7

SUMMARY OF *INVESTIGATORS OF PRACTICE* ACTION RESEARCH PROJECT

Context:

I am a Special Education Teacher for students who are associated with "seventh grade" this year. I teach special class math in a small group setting. As far as state assessments, 75% of my class takes the New York state Alternate Assessment (NYSAA) while 25% of my class take the regular state exams. The issue that I focused on this year was in the area of basic math skills. "What are best practices for helping students with special needs master basic math skills?" I have found over the years that my students have struggled to retain the basic facts as we move on with more complex math facts. I am looking for a balance to help them maintain their basic facts and apply them to more complex math problems.

Action Plan:

My research question was: "What are best practices for helping students with special needs master basic math skills?" I chose this because as described above I find that my students struggle to maintain their basic facts as we move forward with more complex math problems. I chose this topic because I feel that their yearly standardized scores do not show much growth in the areas of basic math skills, nor do state assessments. I have researched many topics surrounding the Common Core Standards (CCSS) in my "Teaching Exceptional Children" magazine. It is important to note that the literature has recognized the need for "changing instruction to increase achievement for students with moderate to severe intellectual disabilities" and it stresses using visuals and breaking each task into parts and steps and have the student practice mastering each step. It also talks about varying response modes for students. It was extremely difficult for me to stop teaching what I deemed important according to their IEP goals and functional skills in general, and start teaching what the NYSAA and CCSS deemed was important for them to know. The NYSAA this year required that my students were able to identify a linear graph, recognize transformations, reflections and rotations, and solve algebraic expressions. I also needed to figure out how to get them to meet these rigorous goals individually. I collected student work as data this year. I pre and post tested them using the NYSAA and my

own basic math skill assessment. The students did my basic skill assessment in the four basic math skill areas addition, subtraction, multiplication, and division. The students met my standards for addition 80-100% but all other areas subtraction, multiplication and division did not meet my standards as they scored below 80%. Having this data early in the year helped me structure my lessons. Then, I was faced with the NYSAA which runs from the end of September to early February. I had to make the decision to start teaching the skills related to the NYSAA and CCSS in order to get them to try to achieve on the state assessments. After the administration of the NYSAA I immediately went back to work on achieving basic math skills for students with special needs. I worked on using best practices that came up in my research such as manipulatives, breaking skills into smaller steps, and using technology.

Results:

I collected my own data in September with a pre-test and I will post test using the same assessment at the end of the year. My results showed my students met my standards in the area of addition but not in subtraction, multiplication and division. I also had to pre-test for the NYSAA and collect 3 more data points for each of the 5 math skills deemed appropriate by the CCSS and NYSAA. The collection of data for the NYSAA showed that my students achieved accuracy for all of the math skills assessed by NYSAA. The students taking the NYSAA achieved 100% accuracy based on each math skill on their post test results. I will have to wait to for the actual results of the NYSAA.

I learned that my students seemed to be more relaxed and confident about assessments. The students have been using self talk strategies such as “give it a try” and “take a risk”.

Implications:

- There needs to be more research done on how to assess students with Intellectual Impairments at the state and national level. I recommend that the state includes special education teachers in the in their research.

- Students with special needs need concrete experiences and visuals to be more successful. This helps them transfer skills to concepts.

- Students need ongoing practice with basic math facts. Teachers need to constantly assess students basic math facts.

- Continue to explore best practices in teaching math to students with special needs and collaborate with other special education teachers to share strategies and learn from one another.