

Proposal for Action Research
Prospect Mill E.S. P.D.S
101 Prospect Mill Rd.
Bel Air, MD 21015
Mr. G. Cloyce Beehler, Principal
Louanne Calvin and Marvin Anderson, Mentor Teachers
Amy Schulze, PDS Supervisor

After School Math Rockets Club

Purpose: To facilitate the SIP goal to provide high quality instruction for all students by improving the math achievement on math unit assessments and the MSA scores of 4th and 5th grade students. With positive, ongoing intervention we improved students' self-perception as capable and successful math students.

Problem or Issue: Gaps in students' understanding of the various Everyday Math curriculum concepts, basic math fact recall and application of computational skills and strategies, as well as an inability to construct brief written responses to math questions appear to have had a negative impact on student achievement on formative and summative unit assessments, MSA number sense and computational strand, as well as student affect.

Guiding Question(s): 1. Did an additional two hours of weekly small group math intervention, designed and developed by pre-service teachers, with the support of the PDS PLC help improve student achievement on formative and summative unit assessments, the MSA math assessment as well as student affect? The answer is yes! 2. Did an intervention program with an intentional collaboration component, lead to an increased level of knowledge about intervention math instruction, student motivation, and performance for participating classroom teachers and Towson University Interns as evidenced by interview notes, email correspondences, and an exit interview? The answer is yes!

Context: Prospect Mill Elementary School (PMES)
101 Prospect Mill Rd.
Bel Air, MD 2015

Currently 1008 students attend PMES with ~172 5th graders being housed at Southampton Middle School to relieve overcrowding. The student population as of 2006 is comprised of:

5.8% African American
2.6% Hispanic
6.6% Asian
1.0% American Indian
84% White

and receive the following services:

10% Farms
2.9% ELL
10.4% Spec Ed.

Participants:

Approximately 32 third, fourth, and fifth grade students who have been identified as performing at the "basic" level on the 2007 MSA and by the classroom teacher as needing additional support were selected to participate in the intervention. These students evidenced gaps in understanding of the various Everyday Math curriculum concepts, basic math fact recall, and application of computational skills and strategies, as well as an inability to construct brief written responses to math questions, which demonstrated their ability to apply mathematical knowledge in a problem-solving context.

Towson PDS Interns (7) from grades 1-5 PMES and Magnolia PDS
PDS Supervisor
Mentor Teachers (2)

Process/timeline:

Intervention will take place in designated classroom and computer lab spaces after school at Prospect Mill and at Prospect Mill's off-site location at Southampton Middle School. One day per week during **the Spring semester 2008. The intervention consisted of small group instruction in NCTM math concepts as identified by the classroom teacher and the MSA assessment results from 2007. Emphasis was placed on motivation and student facilitated self-evaluation and goal setting. Students received an after school snack, completed a series of pre-determined activities in small group, independently, debriefed, and then ended the session with a celebration of success.**

Evidence/sources of data that answer the study's guiding question(s):

Informal assessments: Select Everyday Math Boxes, student math journaling, Everyday Mental Math and Reflexes activities, group discussions and observation of individual student work.
Change in individual student MSA results from 2007 to 2008 from "basic" to "proficient"
Everyday Math curriculum formative and summative assessments
Improved rubric scores on written short answer math questions
Feedback from teacher via notes, email, and face- to -face interactions
Pre and post intervention student, teacher, and Intern attitudes surveys

Evaluation/Results:

- *Improved performance on formative and summative unit assessment scores
- *Improved recall of math fact scores based on pre, ongoing, and posttest scores
- * Evidence via a standard rubric of independent application of appropriate math computation skills and strategies on written math responses.
- *Evidence of independent application of math computation skills and strategies on unit formative and summative assessments and class work, MSA cut scores, teacher report.
- * Improved student affect about math based on a pre and post program survey

Resources/expertise needed to conduct the study:

Math affect assessment to assess student attitudes about math
Mrs. Sarah Morris HCPS Supervisor of Math Curriculum
Mrs. Sharon Kacher HCPS Assistant Supervisor Math Curriculum
Mrs. Cheryl Monk, Instructional Facilitator
Mrs. Rose Martino, Teacher Mentor

Additional information:

Program ran at 2 sites: PMES for grades 3 and 4, and the PMES @ SMS site which houses grade 5.