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Research Question:

How can take-home, skills-based assignments that emphasize daily practice support student academic success and increase parent involvement in school? How can math facts learned at home support problem-based learning in the classroom?

Context for Research:

Every year the third, fourth and fifth grade teachers complain that the lack of math fact automaticity impedes problem solving math work in the classroom. Although we all recognize that problem solving is a higher order thinking skill, it is imperative for students to know their math facts so that they can focus on their cognitive math skills. Knowing the math facts is equivalent to being able to decode in reading. My work attempts to use parents to teach the math facts for five minutes a day at home so that teachers can be freed up to focus on all the other important math concepts. I also wanted parents to feel more directly involved with their child's education.

Findings:

Research shows that there is a misconception on the part of teachers that parents do not want to be involved or that teachers do not know how to involve parents. Even though parents of low-income families may be helping students at home, but their strategies are unclear. Studies show that to effectively increase parent involvement teachers need to meet with parents and communicate explicitly what they need the parents to do with their child.

Keeping in mind that different communities may have different needs and abilities, I chose math facts because I knew that all the parents in my class understood them and would feel comfortable with the material. First I sent home a letter asking the parents to study with their child and a chart where they could record how frequently the activity took place. I assessed student progress with daily two-minute quizzes. Later, during parent conferences in the spring, I modeled how the parents should do the activity and gave them time to practice the activity with their child as I watched. I continued to assess students. Finally, I made

frequent phone calls to the families of those students who still had not memorized their multiplication facts. I reminded them that it should only take five minutes per day. Again, I assessed students' progress.

Findings:

- Families who recorded when they studied progressed much faster than those who did not.
- Modeling explicitly for the parents how to do the activity was much more effective than a note sent home with instructions.
- Students who did well on the multiplication quizzes felt they were better at math overall.
- Although not all parents participated fully, it was wonderful to get to speak to parents frequently about their child's academic progress instead of focusing on their behavior.

Policy Implications:

My recommendations are that the district should provide schools the time to determine what specific activities they would like parents to work on at home. This will provide a focus at parent conferences and build the academic home-school connection. Parents will also feel that they are a direct part of their child's learning. In addition, parents who help their child and document the help should be rewarded with a certificate to appreciate their time and efforts.

Next steps:

- To speak with other teachers at Bryant Elementary to see if they would like to implement the program on a school-wide level for math facts and reading fluency rates.
- To create specific lessons and gather materials to make the activities as simple as possible.
- To find community resources so that students can have advocates outside of the classroom that can teach basic skills when parents are not able to.
- To look into math resources for teachers that will provide support for problem solving in the classroom.
- To compare parent involvement in the public schools to that of private schools. What is different? What can we learn from each other?