Chapter 3
Math Intervention Strategies

ABSTRACT

Like with literacy skills, many students will enter middle or high school lacking the fundamental math skills needed to be successful, and they will need to learn them before moving forward. This chapter focuses on describing proven research-based math interventions that can assist with this instruction. In addition, current research on these interventions is presented.

RESEARCH-BASED INTERVENTIONS

Tier 1

Following is a comprehensive list of specific Tier 1 interventions for math at the secondary level:

1. **PALS Math**: Developed by Drs. Doug and Lynn Fuchs (n.d.), this program is designed to pair a student who is struggling with a concept with another student who understands it. The premise behind this research-based Tier 1 intervention is that the teacher teaches the lesson through direct instruction, and then students are paired with a peer to gain practice on the skill taught. Peer tutors and tutees are changed constantly depending on the skills of the students and their understanding of the concept being taught. More information about *PALS Math* can be obtained at http://kc.vanderbilt.edu/pals/about.html.

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2. **Core-Plus Mathematics**: This research-based math intervention program starts in ninth grade and continues through twelfth. The program starts with lessons on broad mathematical topics and ends with the last course focusing on preparing students for math classes on the collegiate level. Teachers who decide to use this intervention must be willing to embrace the use of small collaborative groups in order to teach the lessons and then follow up with a whole group summary of the concepts learned (Institute of Education Sciences, 2010). More information about Core-Plus Mathematics can be obtained at http://ies.ed.gov/ncee/wwc/Docs/InterventionReports/wwc_coreplus_092110.pdf.

3. **Mnemonic Devices**: One intervention that is used frequently in math is mnemonic devices. These can be a word, song, or anything that will assist the student in remembering the various steps that must be taken to work out the problem correctly. Probably the one that most people remember is Please Excuse My Dear Aunt Sally (PEMDAS), used when one is trying to remember the order of operations when multiplying. Many mnemonic devices can assist students with remembering how to solve a math problem. One such mnemonic, RIDE (R = remember the problem correctly; I = identify the important information; D = determine the operation and the unit for the answer; E = enter the correct number, calculate your answer, and check work), is used to assist students in solving any type of math word problem. Online Math Learning (2015) has established many mnemonics that can be used for math, or the students can make their own if it will better assist them in remembering how to solve a math problem. For more information about this strategy, see http://www.onlinemathlearning.com/math-mnemonics.html.

4. **Draw to Clarify Understanding**: This intervention helps struggling students visualize what a math problem is asking by creating a drawing of the problem. Teachers need to model this intervention and have students practice it prior to doing it on their own. The picture need not be elaborate; it can be something simple like stick figures or even dots and hash marks. The point is to get students to visualize the word problems so that they can figure out how to solve them (Van Essen & Hamaker, 1990; Van Garderen, 2006). More information about this strategy can be found at http://www.jimwrightonline.com/php/interventionista/interventionista_random.php?intv_ID=321.
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