English Language Learners and Mathematics Instruction

Citation: Practical Guidelines for the Education of English Language Learners: Research-Based Recommendations for Instruction and Academic Interventions [K-12] Center on Instruction  Math  Recommendations (pp 40-1)

Conclusions

In this section, we identify three considerations when planning and implementing any instructional approach or academic intervention to promote ELLs’ mathematics ability:

1. ELLs need early explicit and intensive instruction and intervention in basic mathematics concepts and skill.

2. Academic language is as central to mathematics as it is to other academic areas. It is a significant source of difficulty for many ELLs who struggle with mathematics.

3. ELLs need academic language support to understand and solve the word problems that are often used for mathematics assessment and instruction.

The instruction of mathematical concepts and skills and the difficulties experienced by many ELLs highlight the role of academic language in mathematics. In all content areas, including mathematics, as it is to all other academic domains, the role of academic language is a primary source of difficulty for ELLs who struggle with mathematics.

As a result, ELLs need early explicit, intensive instruction and intervention in basic mathematics concepts and skills and the language of mathematics. In turn, those who are at risk for math difficulties must be identified as early as possible, even as early as kindergarten. In addition to early instruction in mathematics, some ELLs may need this support through the 12th grade, particularly given the pervasive use of word problems for mathematics assessment and instruction, and the possibility that newcomers may arrive at U.S. high schools in all grades. This practice of frequently relying on word problems to teach and assess math knowledge requires that ELLs receive academic language support to better understand and approach word problems and to succeed in mathematics.
**Reaction Questions:**

1. From your viewpoint, what are the unique instructional needs of ELLs in the area of mathematics and the unique circumstances of your school/district/state compatible?

2. In your opinion, why is early explicit and intensive instruction in basic mathematics concepts and skills important for English Language Learners?

3. Why are research-based recommendations for mathematics instruction and academic interventions important to your stakeholders? What do you see as the intended outcome of these recommendations?

4. What message is conveyed about the importance of language as central to instruction in basic mathematics concepts and skills?

5. In your opinion, is difficulty with mathematics due to language issues/barriers? Please give examples from your experience.

**Application Questions:**

1. What processes/procedures can we put into place to enhance understanding of academic language and its importance to the success of ELL students in the area of mathematics?

2. This research indicates that students who are English Language Learners need early explicit and intensive instruction in mathematics. What can we put into place to support student skill development kindergarten through grade 12?

3. Who are the school personnel that need to be involved in planning and implementing instructional approaches and/or academic interventions to promote increased mathematics skills of ELLs? How can educators work together to plan appropriate class-wide instructional approaches and small group interventions?

4. In what ways can the school/district provide the necessary professional development supports in order for educators and families to improve basic mathematics concepts and skills of ELL students?

5. What resources/opportunities might be helpful at the classroom, building/district/state/community levels to ensure proper implementation of the research-based recommendations for K-12 instruction and academic interventions in mathematics skill development of students who are ELL?

6. What assessments do educators need in order to plan appropriate instructional
approaches or academic interventions to promote the mathematics skill development of ELL students?

These questions were developed by the following stakeholders working together within the IDEA Partnership:

Role: Family Member
Location: California

Role: Teacher
Location: California

Role: Consultant
Location: North Carolina

Role: General Education Administrator
Location: Pennsylvania

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