***Developing Connections Between Word Problems and Mathematical Equations to Promote Word-Problem Performance Among Students with Mathematics Difficulty***

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[***www.meadowscenter.org/projects/detail/developing-connections-between-word-problems-and-mathematical-equations***](https://www.meadowscenter.org/projects/detail/developing-connections-between-word-problems-and-mathematical-equations)

**Problem:** Competence with math is often defined by performance on math word problems. For students with learning disabilities or learning difficulties, word problems are especially challenging. Data from the math portion of National Assessment of Educational Progress, which contains many math word problems, demonstrates that only 40% of 4th-grade students score at or above proficient levels. The math scores for students with disabilities are significantly lower.

*The word-problem project is important because word problems are an area where I see students struggle the most.* – Jackie, teacher at Hart Elementary, TX

**How We Use Research to Address the Problem:** We recruit third-grade students with mathematics difficulty and randomly assign two-thirds of students to receive one of two word-problem tutoring programs. Within the tutoring, we investigate how to help students use equations (e.g., 4 + \_\_ = 9) to set up and solve word problems. We provide tutoring 3 times a week for 16 weeks. We pre- and posttest all students to determine whether the word-problem tutoring improves word-problem knowledge.

**Outcome of the Research:** We collect data over a 4-year period. In the first year, results indicated that students who participated in the word-problem tutoring gained 21 points on word-problem measures whereas students not receiving tutoring only gained 8 points.

*I have noticed the students use different, but effective, strategies when correctly answering word problems. These students have gained critical thinking skills and have improved in analyzing a word problem in order to answer it.* – Kristal, teacher at Wooldridge Elementary, TX

*You can use what you learn here in school and doing homework*. – Dayanara, third-grade student

*I learned that I have to read the problem and ask myself what the problem is asking about.* – Brenda, third-grade student

**Concluding Statement:** When this research project is finished, we will create training modules for teachers and provide the word-problem materials free-of-charge. We want to provide teachers with effective strategies for increasing the word-problem knowledge of students with learning difficulties.

*Students are definitely more confident in solving word problems. They are less confused about what the problems are asking for. They also followed through steps. And they have made huge progress since September*. – Mirna, teacher at Walnut Creek Elementary, TX

*This project is important because it has given the students access to the world, to mathematics, and to believing in how the mind can grow.* – Barbara, teacher at Gullet Elementary, TX