



## Abstract

Mathematical word problems have taken a major part of textbooks and assessments in the local, state, and national level. In order to solve a mathematical word problem one first needs to comprehend the information, then be able to interpret it into arithmetical operations expressed in mathematical language. The gaps in solving mathematical word problems stems from the failure of connecting the cognitive processes between reading and mathematics. (Vula, Avdyli, Berisha, Saqipi, & Elezi)

## Introduction & Research Question

Often times students are able to answer mathematical number problems. However, when words are added to the problem, they start to not make sense of the question being asked. The issues surrounding this include not knowing what the problem says, not understanding what the problem means, and not recognizing how to do the problem. When this happens teachers ask students to look for key words, work with a partner or in a group, or reread the problem. If comprehension isn't the issue and instead students do not know how to solve the problem, teachers then model with a similar problem, explain to the students what the problem is asking the students to do, or ask a student who has solved the problem to show his/her work for the other students to see. (Ponce & Garrison) But what happens when none of these strategies work.

**“What other strategies can be implemented in order for students to comprehend mathematical word problems?”**

If teachers focus on the literature part of mathematical word problems, then students will most likely comprehend what is being ask of them to solve.

## Data Collection

In order to support my research question, research was conducted through peer reviewed journals found on the University of Hawai'i – West O'ahu library database. Research was also conducted through the National Council of Teachers and Mathematics. The articles helped support the research question by explaining how literature has a positive impact on students' comprehending mathematical word problems.

## Data Collection

In one third grade classroom, 70% of a teacher's students did not pass the fourth chapter test in mathematics, which surrounded the topic of mathematical word problems. As a result, with their experience in using Daily Oral Language (DOL) and Cognitively Guided Instruction (CGI) they had their students rewrite each mathematical word problem sentence correctly in their journal. Then, students are to prepare and share their corrections one by one discussing whether to make the correction. After the sentence is corrected, the students are then asked to solve the mathematical word problem. Lastly, when students finish solving the problem, the teacher ask students to share their strategies amongst the class. This strategy continued throughout the rest of the school year.

### Problem Sentence:

mat have four stack of cards there are ate card in each stack how much cards are there in all

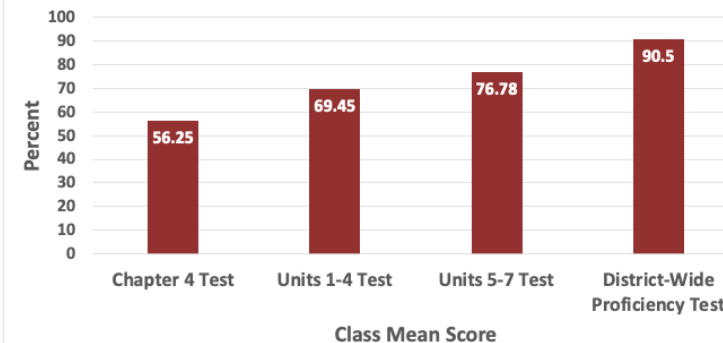
$$\_\_\_ \times \_\_\_ = \_\_\_$$

### Corrected Sentence:

Matt has four stacks of cards. There are eight cards in each stack. How many cards are there in all?

$$\_\_\_ \times \_\_\_ = \_\_\_$$

Chart of Student's Test Scores



Based on the chart, the students' test scores were improving too. The biggest surprise came from the results of the district-wide mathematics proficiency test.

## Results

Based on the strategy implemented, students began to comment that mathematics was fun and they enjoyed it. When doing word problems, fewer students would raise their hands immediately after starting the assignment. There was also less frustration and more excitement about solving mathematics problems.

## Conclusions

- DOL's helped students with their English and mathematical word problems; focused on language by reading the problem carefully and making needed corrections.
- Helped create a habit of reading mathematic problems carefully before giving up.
- Made the time to make sense of the problem and share their language mistakes and sol9n strategies when solving the problem.

## References

1. Kingsdorf, S., & Krawec, J. (2016). A Broad Look at the Literature on Math Word Problem-Solving Interventions for Third Graders. *Cogent Education*, 3(1).
2. Ponce, G. A., & Garrison, L. Overcoming the "walls" surrounding word problems. *Teaching Children Mathematics*.
3. Vula, E., Avdyli, R., Berisha, V., Saqipi, B., & Elezi, S. (2017). The Impact of metacognitive strategies and self-regulating processes of solving math word problems. *International Electronic Journal of Elementary Education*, 10(1), 49–59.

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