

## ABSTRACT

An Investigation of the Effect of Language Variables  
On Problem Solving in Mathematics  
At the Standard Three Level

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The study investigated the effect of syntactic and semantic elements of language on problem solving in STD Three mathematics by manipulating verbal problems related to abstract, mathematical statements. These statements classified as static or transformation problems represented different levels of language complexity. Tests of mechanical computation and word problem solving measured mathematics performance. A Gates-MacGinitie Test of Reading Comprehension Level C Form 1 was used to measure reading comprehension ability.

The sample of five hundred and forty-two (542) students was found to be more competent with the mechanical than the word problems. Additionally, when the static and transformation problems were compared, students were significantly less successful with the latter which involved more complex language structures. While reading comprehension was seen as affecting problem solving competence, the variation in the scores was not as high as expected suggesting that there may be additional factors that need to be studied. Performance based on sex

differentiation was not significant. These results suggest that the effect of other variables related to both cognitive processing and language competence needs to be explored.

Overall, the findings support the thesis that language is an important factor in problem solving in mathematics. Recommendations for curriculum development and research are made.

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