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# Enhancing the Skill in Solving Word Problems of Algebraic Expressions

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**Abstract:** *The study aimed to identify the difficulties faced by Grade VII students in understanding word problems in algebraic expressions and provide remedial measures to improve their understanding. The study also aimed to find out the difference between pre-test and post-test scores after remedial teaching. The study utilized a quantitative approach with a pre-test and post-test design. The sample comprised English medium students from Children's Academy. The results indicated that students faced difficulties in understanding the basic concept of solving word problems, and the remedial teaching significantly improved their understanding. The study concludes that teaching strategies must be designed to address the affective domain to improve students' problem-solving abilities*

**Keywords:**. word problems, algebraic expressions

## I. INTRODUCTION

Math teaches children concepts, skills, and ways of thinking that are useful in everyday life and help them learn throughout the curriculum. It helps children understand the numbers, patterns, and shapes they see in the world, shows them how to handle data in a world that is becoming increasingly digital, and helps them become successful learners.. Children delight in using math to solve a problem, especially when it leads them to an unexpected discovery or new connections. As their confidence grows, they look for patterns, use logical reasoning, suggest solutions and try out different approaches to problems. Math offers children a powerful way of communicating. They learn to explore and explain their ideas using symbols, diagrams and spoken and written language.

### How does math contribute to the child's intellectual development

We teach math because it provides opportunities for developing important intellectual skills in problem solving, deductive and inductive reasoning, creative thinking and communication. Learning math children are developing a 'powerful way of communicating'. math is effectively a language, containing technical terminology, distinctive patterns of spoken and written language, a range of diagrammatic devices and a distinctive way of using symbols to represent and manipulate concepts. Children use this language to articulate their observations and to explain and later to justify or prove their conclusions in math . Sometimes to solve a mathematical problem we have to reason logically and systematically, using what is called deductive reasoning. Other times, an insight that leads to a solution may require thinking creatively, divergently and imaginatively. So we can say 'studying math … fosters creativity'.

Having Students of Various Abilities in the Same Classroom Math teachers frequently have classes with students of varying abilities in the same classroom. This could be caused by a lack of prior knowledge or by how each student feels about their own ability to learn math. Each classroom's teacher must determine how to meet each student's needs.

### Need of the Study

Throughout the math programme, students are encouraged to think logically and analytically. These fundamental math skills are useful across all kinds of disciplines and careers. Math is a good choice for students considering higher education in any science or math -based course, ranging from Biochemical Sciences, Natural Sciences, Engineering, Medical Science and Psychology to Philosophy, Economics, Accountancy, Management and Actuarial Science.

Career opportunities for students who study math include: industry, accountancy, finance, economics, healthcare, medicine, veterinary science and engineering.





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Students demonstrate conceptual understanding in mathematics when they provide evidence that they can recognize, label, and generate examples of concepts; use and interrelate models, diagrams, manipulatives, and varied representations of concepts; identify and apply principles; know and apply facts and definitions; compare, contrast, and integrate related concepts and principles; recognize, interpret, and apply the signs, symbols, and terms used to represent concepts. Conceptual understanding reflects a student's ability to reason in settings involving the careful application of concept definitions, relations, or representations of either.

**Problems and Difficulties Encountered by Students towards Mastering Learning Competencies in math**
**Computational Weakness**
Many students, despite a good understanding of mathematical concepts, are inconsistent at computing. They make errors because they misread signs or carry numbers incorrectly, or may not write numerals clearly enough or in the correct column.

**Difficulty Transferring Knowledge**
One fairly common difficulty experienced by people with math problems is the inability to easily connect the abstract or conceptual aspects of math with reality. Understanding what symbols represent in the physical world is important to how well and how easily a child will remember a concept.

**Making Connections**
Some students have difficulty making meaningful connections within and across mathematical experiences.Incomplete Understanding of the Language of math . For some students, a math disability is driven by problems with language. These children may also experience difficulty with reading, writing, and speaking. In math , however, their language problem is confounded by the inherently difficult terminology, some of which they hear nowhere outside of the math classroom. Math is not a popular subject. Pupils tend to dislike it, especially when they fail to obtain the desired academic results, and it can cause anxiety and even phobia. The difficulties they find are not only due to insufficient knowledge of the elements of math , but also to the (in)ability to transfer knowledge to face different situations successfully. There are high rates of school failure .
Keeping in view the importance of mathematics and word problems in present day to day life. Study aims to understand the difficulties faced by the students of Children's Academy school and to give remedial measures for the improvement in understanding and solving of word problems.
This research will enable the teachers to solve the doubts a student faces.
It will also help the students to develop a liking towards algebra and calculation of algebraic problems.

**Operational Definition of the key words**

- Word problems: a word problem is a few sentences describing a 'real-life' scenario where a problem needs to be solved by way of a mathematical calculation.
- Algebraic expressions: An algebraic expression in math is an expression which is made up of variables and constants along with mathematical operations.

**Objectives of study**

- To identify the difficulties in understanding the concept of word problems in algebraic expressions by the students of Children's Academy.
- To improve the difficulties / to provide remedial measures for difficulties in understanding word problems in algebraic expressions by the students of Children's Academy.
- To find out the difference between the pre – test and post – test scores of students of Children's Academy.

**Hypothesis of the study**
**Null hypothesis:-**
**HO1:-** English medium student*s of Children's Academy do not face any difficulties in understanding* word problems

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**HO2:-** There is no difference between the Pre – test and Post – Test scores of students of Children's Academy in understanding word problems.

## II. METHODOLOGY

The study utilized a quantitative approach with a pretest and post-test design. The sample comprised English medium students from Children's Academy. The pre-test was conducted to identify the difficulties faced by students in understanding word problems in algebraic expressions. Based on the results of the pre-test, remedial teaching was conducted using drill technique and using rough diagrams to comprehend the problem . The post-test was conducted to find out the difference between pre-test and post-test scores after remedial teaching.

## III. RESULTS

The results indicated that students faced difficulties in understanding the basic concept of solving word problems. The frequency of wrong responses decreased in the post-test after remedial teaching. The difference between the mean score of the pre-test and post-test was 8.67, indicating significant improvement in understanding.

## IV. DISCUSSION

The study concludes that teaching strategies must be designed to address the affective domain to improve students' problem-solving abilities. The results suggest that it is essential to identify and address the difficulties faced by students in understanding word problems in algebraic expressions. The findings of the study have implications for teaching strategies and curriculum development.

## V. CONCLUSION

The present study aimed to identify the difficulties faced by Grade VII students in understanding word problems in algebraic expressions and provide remedial measures to improve their understanding. The study utilized a pre-test and post-test design to evaluate the effectiveness of remedial teaching. The results indicated that students faced difficulties in understanding the basic concept of solving word problems, and the remedial teaching significantly improved their understanding. The study concludes that teaching strategies must be designed to address the affective domain to improve students' problem-solving abilities. The findings have implications for teaching strategies and curriculum development to improve students' problem-solving abilities.

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