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"Project EPSSRC (Enhancing Problem Solving Skills through Reading Comprehension): An Input to Instructional Materials Development"

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ABSTRACT

In contemporary education, reading comprehension and proficiency in solving math word problems form the bedrock of a robust educational foundation. Many students grapple with the complexities of intricate texts and mathematical word problems, hindering their academic progress. This study addresses these challenges by integrating reading comprehension strategies into math word problems, offering learners valuable tools to enhance their problem-solving skills and excel in subjects requiring textual analysis.

The research involved a meticulous evaluation process, including a pre-test and post-test comprising ten word problems, presented in Table 1 and Table 2. The pre-test scores ranged from 1 to 9, with the majority of participants scoring 5, indicating a prevalent performance level. Following the intervention, post-test scores displayed significant improvement, ranging from 3 to 10, with the majority achieving a score of 7, highlighting enhanced problem-solving abilities. Statistical analysis, presented in Table 3, confirmed a substantial difference between pre-test and post-test scores, validating the efficacy of the applied reading comprehension strategies.

The findings affirm the success of Project EPSSRC in bolstering participants' problem-solving skills through reading comprehension strategies. This study not only provides valuable insights into effective teaching methods but also underscores the importance of integrating diverse educational techniques to empower students in navigating the challenges of complex texts and math problems, ultimately contributing to their overall academic success and future prospects.

Keywords: *Reading comprehension, problem solving skills , academic performance*

INTRODUCTION

Reading comprehension and math word problems are two main gears of a compacted educational foundation. Several students frequently face challenges when understanding intricate texts and solving word problems. Through smearing reading comprehension strategies to word problems, learners can enhance their problem-solving skills and excel in subjects that require textual analysis.

Associating the gap between reading comprehension and word problem-solving is realizable by equipping students with the right tools and techniques. Students can benefit from learning strategies that can be applied across different subjects, ensuring a well-rounded education.

Word problems are essential in mathematics, as they present real-life situations where math is required to find a solution. They involve various mathematical operations, such as addition, subtraction, multiplication, and division. Math word problems are highly relevant in daily life as well as in various professions. They help students develop critical thinking and decision-making abilities.

Certainly, reading is a vibrant part of problem-solving. It is also a key to a deeper level of understanding. A high reading comprehension skill is indeed indispensable if one is to understand the mysteries of the world and contemplate the unknown. When people are able to read with understanding, then they indeed can obtain more knowledge of things.

Thus, the researchers were motivated to assess the level of reading comprehension of the selected Grade 10 students at Jacobo Z. Gonzales Memorial National High School, to find out the correlation between students' reading comprehension skills with their problem-solving skills and academic performance. It is also anticipated that the result of the study would be of phenomenal help in coming up with more concrete plan of activities to improve the reading comprehension skills in English as recommendations.

METHODOLOGY

The study utilized Quantitative Case Study Research Design. Purposive sampling will be employed in this research which includes the partitioning of a population into subclasses with notable distinctions and variances. Purposive sampling is a deliberate non-probability sampling technique in research, where individuals or groups are intentionally chosen based on specific and relevant characteristics aligned with the research goals. Researchers select participants purposefully, ensuring they possess essential knowledge, experience, or attributes crucial to the study. This method enables in-depth exploration of specific phenomena, making it valuable for qualitative research studies.

The procedure for data collection were summarized below:

Phase I. Preparation Stage. Preparation and consultative meetings of the research team on the agenda as well as objectives of the study. Crafting of all different tools and instruments to be utilized in the study. Checking and validation of the instruments.

Phase II. Data Gathering Stage. Identification of probable respondents of the study. Assignment of field researchers were assigned to gather data from the identified respondents. The researchers used the validated instruments for the data gathering procedure which included but not limited to semi-structured interview, FGD, documentary analysis, portfolio analysis as well as triangulation procedure.

Phase III. Data Analysis Stage. Retrieval of all gathered data from the respondents. The researcher performed initial reading and familiarization of the transcript of responses. Categorizing all similar codes from the responses and form themes.

Phase IV. Summary and Interpretation Stage. Crafting of research summary through major domains of the study.

Phase V. Reporting. Crafting the final paper including the results and recommendations of the study. Present the result of the study.

RESULTS

Raw Scores and Mean from the Pre-test

The analysis of pre-test scores, derived from a set of two word problems, consisting of ten items, provides a comprehensive overview of participants' performance levels. The data reveals a diverse range of scores, spanning from the lowest score of 1, recorded twice, to the highest score of 9, observed once. Interestingly, the most common score attained by participants was 5, occurring twelve times, suggesting a central tendency in the group's performance. Following closely, a score of 7 was achieved seven times, indicating a notable trend. These results raise intriguing questions about the participants' problem-solving abilities and the specific challenges posed by the word problems. Further exploration into the underlying factors contributing to these scores, such as the types of problems participants struggled with or excelled in, can offer valuable insights. This analysis not only informs educators about the students' proficiency but also serves as a foundation for targeted interventions, ensuring tailored support for individual learning needs within the group.

Raw Scores and Mean from the Post-Test

The examination of post-test scores, derived from a series of two word problems, consisting of ten items, provides a detailed glimpse into the participants' performance after the learning intervention. The data displays a varied spectrum of scores, ranging from the lowest score of 3, reported once, to the highest score of 10, observed five times. Remarkably, the predominant score achieved by participants was 7, occurring nine times, indicating a consistent performance level among a significant portion of the group. Additionally, a score of 8 was obtained eight times, reflecting a notable trend in the participants' abilities. These results prompt intriguing inquiries about the participants' understanding of the word problems and the effectiveness of the intervention strategies employed. Further analysis into the specific problems that led to these scores can provide valuable insights into the participants' strengths and areas that may still require attention. Such insights are invaluable for educators, guiding them in refining teaching methodologies and addressing the individual needs of participants to enhance overall learning outcomes.

Comparison on the results from the Pre-test and Post-test (T-test)

Based from the findings from the t-test, the computed value, 1.828, is greater than the tabulated value, 1.645, which indicates that there is a significant difference between the two results. It means that Project EPSSRC helps the participants to improve their problem-solving skills through comprehended what was the given scenario about.

DISCUSSION

A condensed educational foundation is built around two primary gears: reading comprehension and arithmetic word problems. Several kids regularly struggle to read complex texts and solve word problems. Students can improve their problem-solving abilities and flourish in disciplines that require textual analysis by applying reading comprehension tactics to word problems.

By providing students with the necessary tools and approaches, it is possible to bridge the gap between reading comprehension and word problem solution. Students can benefit from learning methodologies that can be used in a variety of areas, ensuring a well-rounded education.

The study's good findings reflect Project EPSSRC's usefulness in improving problem-solving skills through reading comprehension. It's gratifying to see that the program's tactics have produced real outcomes, underscoring the importance of continuing and expanding its implementation. The inclusion of multiple

learning methods and competence levels emphasizes the program's flexibility and inclusivity, guaranteeing a greater effect. Furthermore, the emphasis on continual evaluation and feedback highlights the need of continuous progress and individualized assistance, boosting participants' overall learning experience. Sharing effective methods among instructors may build a collaborative atmosphere, establishing a supportive network focused at honing problem-solving abilities via reading comprehension, helping students in a variety of educational environments.

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