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MISCONCEPTIONS OF EDUCATION STUDENTS IN
TRANSLATING EXPRESSIONS FOR VERBAL PROBLEMS
IN MULTIPLICATION AND DIVISION OF
DECIMAL NUMBERS

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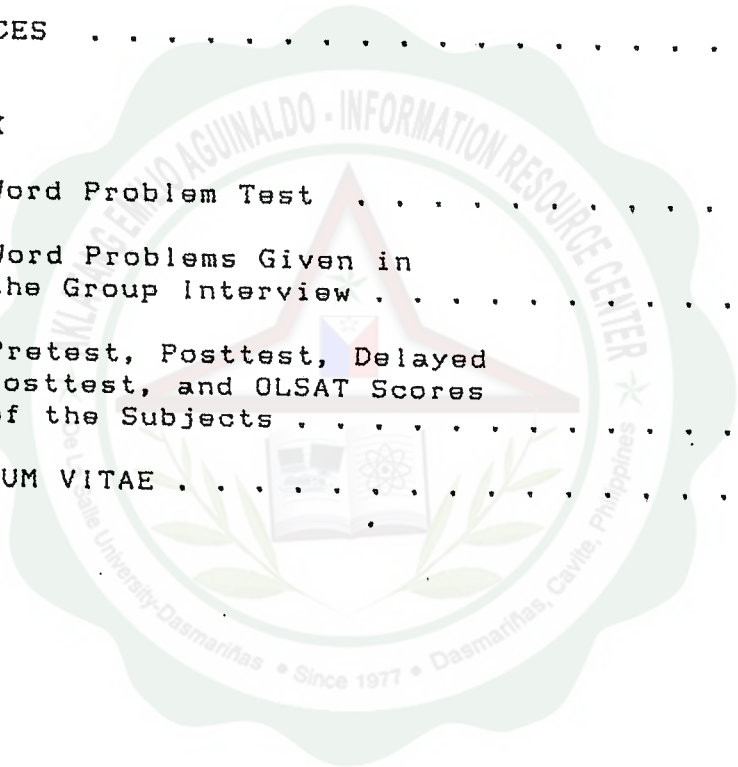
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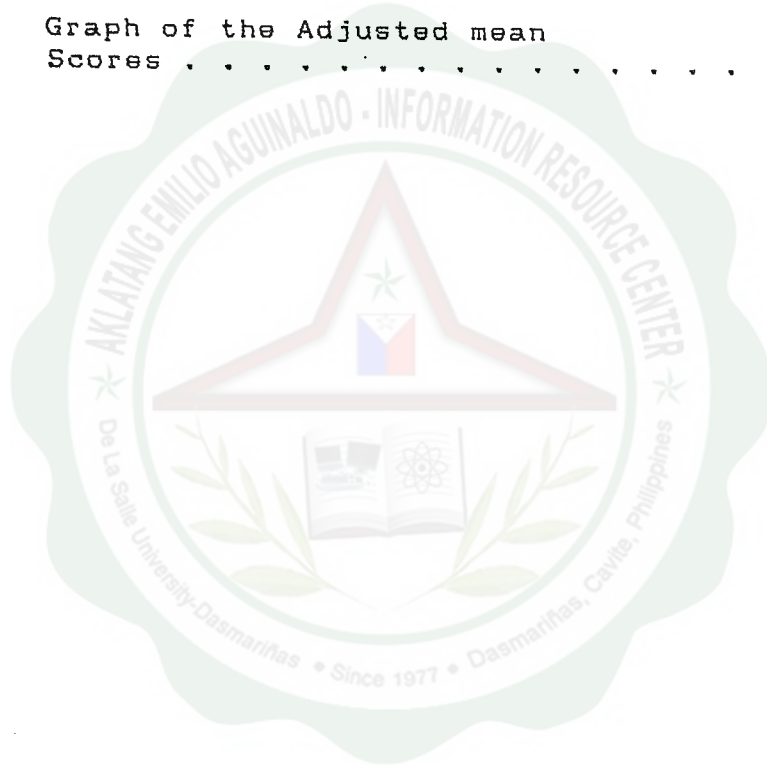
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ABSTRACT

This experimental research determined some misconceptions in writing expressions for verbal problems in multiplication and division of decimal numbers of education students under different year levels. It further investigated whether significant differences between fields of specialization and among year levels in terms of students' performance in the word problem test exist. Finally, the effects of the interviews on the students' performance were also investigated.

One hundred twenty students, 15 math minors and 15, math majors from each year level, from the Pangasinan State University-Bayambang Campus, served as subjects of this study.

Using a word problem test it was found that the subjects' errors were basically caused by their misconceptions in translating verbal problems in multiplication and division of decimal numbers and such misconceptions were in turn caused by inadequate and limited conceptions of the operations.

In an attempt to improve students' performance interviews aimed to clarify and modify misconceptions were conducted and these proved beneficial to them. This



was indicated by significant differences in mean scores before and after the said interviews.

Using the pretest and the OLSAT raw scores as covariates, the ANCOVA revealed that classification of students into minor and major groups resulted to a significant difference in students' performance in translating verbal problems in favor of the latter. On the other hand, year level was not a significant source of variation to explain the difference in their performance. The interaction of the two factors, field of specialization and year level, was not significant. The major students scored significantly higher than their minor counterparts in all year levels.

The subjects continue to face difficulties when they have to write appropriate expressions for verbal problems in multiplication and division with numerical data that lead to conflict between the correct operation and the constraints of the corresponding model. It seems that the behavioral models of these operations become so deeply rooted in the students' mind that they continue to exert an unconscious control over mental behavior even after the students had acquired formal mathematical notions that are solid and correct. In fact, there was no progress in students' performance in the word problem



test with age. In view of this, there is a need to provide students with efficient and effective mental strategies that would enable them to control the impact of these models. Because today's education students are tomorrow's teachers, the teaching-learning cycle may perpetuate misconceptions and misunderstanding of the operations if the impact of these models is not controlled.

