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ACHIEVEMENT OF STUDENTS AT BUCAL NATIONAL SCHOOL IN VARIOUS LEVELS OF MATHEMATICAL LEARNING TASKS IN MATHEMATICS IV AS INFLUENCED BY THE USE OF GRAPHICS CALCULATOR

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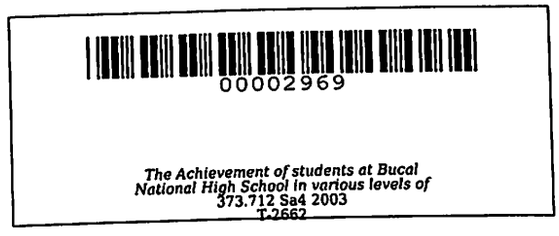
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ABSTRACT

SAMSON, FLORENCIA AVIZOLA, Cavite State University, Indang, Cavite, April 2002. The Achievement of Students at Bucal National High School. in Various Levels of Mathematical Learning Tasks in Mathematics IV as Influenced by the Use of Graphics Calculators. Adviser: Dr. Cecilia B. Banaag.

This study was conducted to determine the relative effects of using the graphics calculator on students' achievement in various levels of mathematical learning tasks in Mathematics IV of Bucal National High School Special Science Curriculum (SSC) and New Secondary Education Curriculum (NSEC) for the school year 2001-2002. Specifically, it aimed to determine the: 1) SSC 1.1) control group's pretest and experimental group's pretest in knowledge, comprehension, application and higher level of cognition; 1.2) control group's posttest and experimental group's posttest in knowledge, comprehension, application and higher level of cognition; 1.3) control group's pretest and posttest in knowledge, comprehension, application and higher level of cognition; 1.4) experimental group's pretest and posttest in knowledge, comprehension, application and higher level of cognition; and 1.5) control and experimental groups gain in scores; and 2) NSEC 2.1) control and experimental groups in knowledge, comprehension, application and higher level of cognition 2.2) control and experimental groups posttest in knowledge, comprehension, application and higher level of cognition; 2.3) control group's pretest and posttest in knowledge, comprehension, application and higher level of cognition; 2.4) experimental group's pretest and posttest in knowledge, comprehension, application and higher level of cognition; and 2.5) control and experimental groups.

The Randomized Pretest-Posttest Experimental Design was employed as the research research method of the study. Both the control and experimental groups were given a pretest and a post test in between the actual experiment. To obtain the desired data. Likewise, the students mental abilities were used to establish comparability between the control and experimental groups in either program. The respondents involved 78 SSC students and 100 NSEC pupils in Mathematics IV Bucal National High School. The statistical tests employed were the t – test for both independent and dependent sample means.

After analyzing and interpreting the data, the following findings were revealed:

The control and experimental groups were initially comparable in the various levels of learning task comprehension, application and higher level of cognition for both the SSC and NSEC.

In either program, the control and experimental groups made no marked differences in their posttest achievement tests as proven by their overall performances.

The SSC control group showed significant differences between their pretest and posttest achievement that results in all levels of learning tasks The result od which were similar to that of the NSEC control group.

When the pretest, posttest achievement test result were compared, the SSC and NSEC experimental groups differed significantly in all levels of learning tasks.

The students' achievement in either program revealed no significant differences between the control and experimental groups. This indicates that the students taught using the graphics calculator performed just as well as those taught using the traditional pencil-paper method using scientific calculators.

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INTRODUCTION

Philippine education, mathematics education in particular, is committed to develop the individual's capabilities and skills in higher intellectual operations and more complex comprehension and expression activities, and in thinking intelligently and creatively in life situations. Thus, time and again, revisions, innovations, and new programs are introduced to suit the various needs of the people and the community. And, in response to the demand of upgrading the quality of education, it recognizes the use of technology in mathematics classrooms in the teaching and learning of secondary school mathematics.

Mathematics plays a vital role in the lives of modern people who must cope with fast-paced technological advancements. In the country's highly technical society, people who occupy the most prestigious and good-paying jobs are those who are experts in business and industry, medicine, engineering, science and technology. All these require skills in mathematics which explains why the present educational system places so much emphasis on science and technology. However, the success of the science and technology programs depends to a great extent on the development of the mathematics curriculum.

The 1980's marked the start of the use of computers in Philippine secondary schools. Selected public and private schools have been equipped with computers for mathematics or computer programming subjects. However, the use of computers to teach mathematics was practically minimal and in most cases, non-existent. This can be attributed to the lack of funds in acquiring the necessary hardwares and softwares. As a result, computers have not had much impact on mathematics education as revealed by recent studies (Onstein, 1992).