

Needs assessment essay



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Students desire more than paper and pencil lessons. According to the National Council of Teachers of Mathematics (NCTM), “ Technology is driving change in the content of mathematics programs, in methods for mathematics instruction, and in the ways that mathematics is learned and assessed” (as cited in Van de Walle, 2004, p. 103). In this study, I want to investigate whether any differences occur in the overall effectiveness of student learning of fraction lessons when the information is presented using different types of visual media, in this case, computer versus overhead. The purpose of this study is to describe the impact of presenting fraction math lessons using computer based instruction versus overhead projection presentations. Eighth-grade math students will feel more engaged while receiving computer-based instruction versus eighth-grade students who receive overhead projection instruction.

The participants are 12 math students at a Middle School. All of the students have basic computer skills. The twelve students are all eighth graders but their scores vary on the math section of the Michigan Educational Assessment Program (MEAP) standardized test. However, the test scores in class show that students struggle with fraction problems. Twelve students will be randomly divided into groups; one group of six students will have computer-based instructions on solving problems involving fractions and percentages, compounded percentages and multiple discounts and the other group of six students will have lecture based instruction using the overhead and paper worksheets. “ The logic of needs assessment can be summarized as a simple equation: desired status – actual status = need” (Dick, Carey, & Carey, 2005). Currently, the desired status is for the math students to score

80% on in-class fraction test. The actual status is that students are scoring between 69 - 70 %.

The need is to improve the scores about ten points. Students become bored taking notes and looking at the overhead information. Students using the computer are forced to be actively engaged. Using student's interest in present day technology gives both sides an advantage in obtaining educational success. The question that still remains is does it give students an edge over paper and pencil taught lessons? A high school in Texas, San Marcos High, put the questions to the test. Teachers were initially impressed with on-line lessons. However, during the assessment phase, it was hard to determine if students were guessing the answers to the multiple choice questions or answering the questions correctly.

When questioned why the school chose to use the on-line based lessons, Mr. Darnall, the math department head, states " Both of us really thought it was a way to capture the students' attention" (Trotter, 2007). According to Gagne's Nine Events of Instruction, " in order for any learning to take place, you must first capture the attention of the student" (Kruse, n.

d.). Computer based lessons will satisfy this event. The students will be studied in their own groups.

Data collection method included pre-test and posttest, interviewing, and observing students. Data will be collected in the form of daily worksheets and graded test. Also, students will completed a questionnaire about how involved they felt in each lesson.

Answers from the questionnaire provided insight into the level of comfort student's felt in using visual media to learn fractions. Students were observed during each presentation to look for a degree of understanding or misunderstanding. Triangulation is essential to cross-check information and presents an accurate view of the results. Three types of data to allow for triangulation are observing, interviewing, and examining records. These instruments were appropriate because these factors support the action of ensuring that the students have the prerequisite knowledge to begin instruction and supports informing the students what they will learn (Dick, et al, 2005). Data will be analyzed through the use of descriptive statistics for measures of central tendency (mean, mode, median) and variability (standard deviation) (Gay, Mills, & Airasian, 2006).

Interviews will be analyzed by grouping similar responses into clusters that address the same issue and develop total scores across an item cluster (Gay et al, 2006). References Dick, W. , Carey, L. , & Carey, J. O. (2005).

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