

## Students' Performance in Mathematics Using Multi-Mouse Mischief Technology

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### Abstract

*Multi-Mouse Mischief Technology is a learning tool that helps in personalizing lesson plans, engaging students, and turning presentations into two-way conversations. This study sought to answer the following objectives: 1) Find out the significant difference on the pretest scores in Mathematics of the students when grouped to Multi-Mouse Mischief Technology and Lecture Method; 2.)Find out the significant difference on the posttest scores in Mathematics of the students when exposed using Multi-Mouse Mischief Technology and Lecture Method;3.)Find out the significant difference on the pretest and posttest scores in Mathematics of the students when exposed using Multi-Mouse Mischief Technology and Lecture Method. The study used the true experimental research design, the randomized pretest-posttest control group design. Result revealed a significant difference on the students' pretest and posttest scores in Mathematics when exposed using Multi-Mouse Mischief Technology and Lecture Method. This study concluded that Multi-Mouse Mischief Technology can improve the students' performance in Mathematics.*

**Keywords:** Multi-Mouse Mischief Technology, performance, experimental group, control group, lecture method

### 1. Introduction

Math anxiety defined as a feeling of tension, apprehension, or fear that interferes with math performances (Sinn-Braswell, 2002). Most of the students do not like Mathematics much, the reason is that they find it difficult to understand and as they grow up they start hating Mathematics. Technology will help students acquire the skills they need to survive in a complex, highly technological knowledge-based economy (Butalid and Haim, 2014). This evolution has led to a challenging culture and how people function day by day. One of the hardest parts of being an educator is on how to collaborate technology to enhance students' learning. In a traditional Mathematics classroom, the teacher leads a large group demonstration of skills followed by individual practice. The students will simply watch the teacher as he/she demonstrates the procedure in solving Mathematics and followed by exercises to test whether the students fully understood the topic. For this reason, Mathematics teachers tried to make use of Microsoft the Multi-Mouse Mischief to assess students' understanding. The Multi- Mouse Mischief Technology is an add-in to Microsoft Office PowerPoint 2010 and 2007. It runs on the Microsoft Windows operating systems the Windows XP SP3, Windows Vista and Windows 7. The program enables teachers to create and insert questions, polls, and draws activity slides into the Office PowerPoint lessons. When the lessons are played, students can actively respond to these slides, individually or in teams, by using their own mice to click, circle, cross out, color in, or draw answers on the screen. Microsoft sites three compelling reasons to use Multi-Mouse Mischief Technology in the classroom: 1.) it actively engages students and supports collaborative learning; 2.) it improves classroom management and overall student participation; and 3.) it is familiar to use and easy on the classroom budget.

Wash (2012) defines Multi-Mouse Mischief Technology as a relatively new, less expensive student response system alternative for the classroom that can be used for informal assessment and classroom participation. Student Response Systems (SRS) or clickers have become the norm in K-12 classrooms as an assessment tool as well as a means to increase class participation. This technology had helped to actively reach out to the students in their Mathematics subject especially on Sets. By using this technology, sets can be fun and inspirational.

It is the teachers' power to cleverly use technology to stimulate student curiosity about Mathematics and maximize their performance (Nguyen, 2010).

## 2. Methodology

The participants of this study were the seventy-eight (78) grade 9 students of Libertad National High School, Libertad, Misamis Oriental, Philippines. The study utilized the true experimental research design, the randomized pretest-posttest control group design. Two (2) groups are involved in the study, thirty-nine (39) students were exposed using Multi-Mouse Mischief Technology and the thirty-nine (39) students exposed using lecture method respectively. The performance of the students was measured through pretest and posttest. The pretest and posttest questionnaires were composed of thirty (30) items multiple choices.

## 3. Results and Discussion

Table 1 shows the t-test result showing the pretest scores of the two groups. It reveals no significant difference on the students' pretest scores in Mathematics when grouped to Multi-Mouse Mischief Technology and Lecture Method since their mean difference is 0.846154 with t-value of 1.78 and p-value of 0.0791 which is greater than the p-value of 0.05 and that leads to the non-rejection of the null hypothesis. This signifies that the pretest scores of both groups do not differ with each other. It means that the prior knowledge of both groups is equal. Performance assessment is the process of measuring the terminal behaviors of the students at the end of instruction. It is the job of the teacher to measure whether the students have acquired the component concepts, as on achievement, before proceeding with the instruction which arranges these concepts in proper relationship for the learning of the principles (Sharma and Neetu, 2011).

**Table 1. T-test result showing the difference on the pretest scores of the two groups**

Variable	Mean score	Mean difference	t-value	p-value	Remarks
<b>Pretest</b>					
<b>Multi-Mouse Mischief Technology</b>	7.38				
		0.846154	1.78	.0791	Not Significant
<b>Lecture Method</b>	6.54				

*With 0.05 level of significance*

Table 2 presents the t-test result showing the posttest scores of the two groups. The analysis reveals a significant difference on the students' posttest scores when exposed using Multi-Mouse Mischief Technology and Lecture Method since their mean difference is 6.564103 with t-value of 7.74 and p-value of  $1.23 \times 10^{-10}$  which is lesser than the p-value of 0.0 and that leads to the rejection of the null hypothesis. Through the Multi-Mouse Mischief Technology as the base of interactive media application, expected the participation in learning Mathematics, students' ability to solve problems, and the results of student learning achievement are expected to be increased (Wash, 2012). This means that the group exposed using Multi-Mouse Mischief Technology is significantly increased their understanding and provided a life-long learning. Omrod (2004) believes that students' self-determination and self-regulation are more likely intrinsically motivated when they have a sense of self-determination, when they believe that they have some choice and control regarding the things they do and the directions their lives take.

**Table 2. T-test result showing the difference on the posttest scores of the two groups**

Variable	Mean score	Mean difference	t-value	p-value	Remarks
<b>Posttest</b>					
<b>Multi-Mouse Mischief Technology</b>	20.33				
		6.564103	7.74	$1.23 \times 10^{-10}$	Significant
<b>Lecture Method</b>	13.77				

*With 0.05 level of significance\**

Table 3 displays the paired t-test result showing the pretest and posttest scores of the two groups. It reveals a significant difference on the students' pretest and posttest scores when exposed using Multi-Mouse Mischief Technology and Lecture Method since their t-values are -26.88 and -10.37 and p-values of  $2.48 \times 10^{-26}$  and  $1.24 \times 10^{-12}$  and that leads to the rejection of the null hypothesis. Multi-Mouse Mischief Technology has fostered a greater interaction among the students, encourages participation and teamwork, while adding fun to the activities. It increases motivation and at the same time teacher enjoys a greater control over the management of the class.

With Multi-Mouse Mischief Technology students manage to make enjoy themselves and learn naturally through play, without them realizing it (Barcelo, 2010). This technology has helped a lot to actively reach out to students in their Mathematics courses. Using Multi-Mouse Mischief technology, sets can be fun and inspirational. It is the teachers' power to cleverly use technology to stimulate student curiosity about Mathematics and maximize their performance (Nguyen, 2010).

**Table 3. Paired t-test result showing the difference on the pretest and posttest scores of the two groups**

Group	Mean score	Mean difference	t-value	p-value	Remarks
<b>Multi-Mouse Mischief Technology</b>					
<b>Pretest</b>	7.385				
		-12.9487	-26.88	$2.48 \times 10^{-26}$	Significant
<b>Posttest</b>	20.333				
<b>Lecture Method</b>					
<b>Pretest</b>	6.538				
		-7.231	-10.37	$1.24 \times 10^{-12}$	Significant
<b>Posttest</b>	13.769				

With 0.05 level of significance\*

#### 4. Conclusion

Based on the findings of the study, it was concluded that the experimental and control groups were comparable in terms of their performances before the start of the experiment. T-test result showed a significant difference on the posttest scores of the students when exposed using Multi-Mouse Mischief Technology and lecture method. Paired t-test result revealed a significant difference on the pretest and posttest scores of the students when exposed using Multi-Mouse Mischief Technology and lecture method. This study concluded that Multi-Mouse Mischief Technology can improve the students' performance in Mathematics.

#### 5. Recommendations

Based on the findings and conclusion of the study, the researchers would like to recommend that Multi-Mouse Mischief Technology can improve the students' performance in Mathematics. This can enhance students' performance when it is used appropriately. Similar study should be conducted using Multi-Mouse Mischief Technology to other disciplines too.

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