

# The Effects of Using MS Powerpoint as E-Learning Material to the Academic Performance of the Senior High School Students

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**ABSTRACT** -- MS Powerpoint is the most commonly used program in the academe in terms of lesson delivery inside the classroom. Based from different surveys who used MS Powerpoint as their tool in deploying their lessons. It is noted that with the use of the software, students were able to better understand the lessons compared to the traditional ways of delivering the lessons. This assumption enthused the researchers to conduct a study to prove that MS Powerpoint has a relationship and affects the academic performance of students in the Senior High School of Paranaque National High School-Main. True Experimental Design were used by the researchers that selection of participants and assignment of the participants to groups in the study were randomly executed. The purpose of using true experimental research is to determine the significant difference between the Post-test score and the academic performance of two different groups that will expose to the two different teaching environment. The used of MS PowerPoint as teaching material and the used of traditional teaching materials. The general findings revealed that there is a significant difference of point -6.516, -17.820 and -12.831 in the pre-test and post-test scores in terms of their subject in Math, English and Science. Interpreting the mean, the study revealed that MS PowerPoint shows an improvement of the experimental group according to Analytic Skills, Evaluative Skills and Attitude are all in "agreed" with a general weighted mean of 3.96, 4.24 and 4.02, respectively. The experimental group has shown an improvement in their academic performance in terms of all three subjects. It is recommended that the principal of the school should encourage the teacher to use MS PowerPoint for their teaching, government should provide tools appropriate technology like PowerPoint to enhance quality of education and the teacher must undergo seminars and workshops for re-training to enable them to use the software properly.

**Keywords**-- MS Powerpoint, E-learning, Senior High School

## I. INTRODUCTION

MS PowerPoint program is a Presentation software that can be used to effectively deliver lessons in a classroom. It controls 97% of the presentation market rating as the most dominant type of technology used in the classroom for learning and teaching. According to Amare (2006), there are 30,000,000 presentations made worldwide in one day and that PowerPoint software was on 250,000,000 computers respectively. This program

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enables teachers and students like to prepare effective presentation. It allows teacher to be more dynamic in presenting lessons than simply lecturing and writing in the blackboard. It provides structure to a presentation that aids in the order and spacing of the lecture (Hlyka& Masson, 1998) and make it easier for teacher to present clear summary (Lowry, 1999) that affects students learning (Miller & McCown, 1986).

Based from the tremendous usage of using MS PowerPoint that 67% of the 384 students surveyed informed that most of the instructors used PowerPoint, 23% said that at least half of their teachers deal with it and 95% said that their teachers who used PowerPoint presentations in most class sessions, Maryellen (2012). It means that the MS PowerPoint is an effective tool not only in office presentations but also for teaching and learning purposes. It was observed that using software like this as teaching material, helped students to present their presentations or reports creatively without exerting too much effort. During class reports especially in college students, this software contributed a lot in embracing their skills in making impressive presentation that they can also use for the near future.

In some countries, especially in some states in the USA like New Jersey and South Alabama, PowerPoint features, perspectives and effects are empirically documented (Bartsch & Cobern, 2003; Nouri & Shahid, 2008; Amare, 2006). However here in the Philippines, use of PowerPoint as an alternative teaching tool is not commonly used in classroom based on observations had in public high school. Some teachers in secondary high school encounter problems like lack of teaching resources especially on technology that they may use as teaching tool. Due to the lack of tools, teachers provide their own teaching materials like projector buying from their own pockets. Some of them prefer using traditional teaching methods than PowerPoint as their teaching tool because of lack of knowledge and familiarity on how to use it. This problem may affect the learning of the student in terms of their academic performance and information absorption.

Thus, the researchers pursue this study to prove that MS PowerPoint has a relationship and affects academic performance of students in the Senior High School.

## **II. METHODOLOGY**

### ***Research Design***

The researchers used True Experimental Design. It is characterized by a random selection of participants and the random assignment of the respondents to groups. According to Heffner, it is often thought that the only research method that can adequately measure the cause and effect relationship. With this method, it will determine if there is a significant difference between the post-test score and the academic performance of the two different groups that will be exposed to the two different teaching environment. The used of MS PowerPoint as teaching material and the used of traditional teaching materials.

### ***Population and Sample Size***

The population and sample size that the researchers chose for the study are the 74 students ages 16-18 years old who are currently enrolled under STEM Strand Grade11 of Parañaque National High School- Main, Metro Manila, Philippines who are currently enrolled in the School Year 2017-2018.

The STEM Strand Grade 11 section 2 is composed of 14 females and 17 males with the total of 37 students while section 3 is composed of 16 females and 21 males with the total of 37 students also.

The respondents were divided into two sections who were taught by the same subject including the Mathematics, Science and English subject and same teacher in the same lesson. Both sections took the similar set of pre-test to access their background knowledge on the topic. The first group (STEM 2) was exposed to traditional lecture while the researcher was observing during the lecture. The second group was taught using the MS PowerPoint with the same observant. Each section was taught for 2 weeks; they took to prepare a Post-test to evaluate what they learned.

### ***Research Instruments***

The research instrument used in the study is the result of pre-test and post-test for the same lesson taught for the two groups. Respondents used the researcher- made- questionnaire. The questionnaire is composed of II parts. The part I is how does MS PowerPoint affect in the academic performance of the students, and it is composing of three categories the Analytic Skills, Evaluative Skills and the Attitude. The part II is the significant difference of MS PowerPoint between the academic performances of the students.

The researchers also used the Level of Agreeableness of the Likert's Scale with following description to measure the response of the respondents: Strongly Agree – 5, Agree – 4, Neither – 3, Disagree – 2, and Strongly Disagree – 1.

In the beginning of the study, the researchers requested permission to the principal of Paranaque National High School-Main to conduct an experimental research to its classes. The researchers conducted a pre-experimental test before the lesson starts for the both group. Group A will be using a traditional teaching materials or strategy while the group B will be exposed in the use of MS PowerPoint presentation for teaching materials. The post-experimental test was conducted at the end of the experimental period (two weeks) for the both group. The post- experimental test was served as a basis if there is a significant improvement for the learning of both students with the use of two different teaching environment or strategy.

### ***Statistical Treatment of Data***

Paired sample t-test was used to know if there is a difference to the Analytic Skills, Evaluative Skills, and Attitude of the students. If there is improvement to their learnings between the two sample group if there are engaging in the different teaching environment or strategy.

## **III. RESULTS AND DISCUSSION**

Upon checking the pre-test and post-test scores of the both groups, the following findings are revealed.

### A. Analytic Skills

**Table 1:** Respondents Assessment as to Analytic Skills

Analytic Skills	Weighted Mean	Verbal Interpretation
1. I find it easy to solve mathematical problems whenever my teacher uses PowerPoint.	3.69	Agree
2. PowerPoint helped me emphasize main point.	3.89	Agree
3. I find it easy to determine the relative importance of terms in the topic when my teacher uses PowerPoint.	3.95	Agree
4. I find it easy to make project, test or assignment that required original or creative thinking.	3.92	Agree
5. I find it easy to make project, test or assignment that required critical thinking or problem solving.	3.77	Agree
6. I find it easy to use technology to search, present information or solve problems.	4.08	Agree
7 I find it easy to summarized material in a way that aided retention.	4.08	Agree
8. MS PowerPoint makes the topic easy to understand.	4.31	Agree
<b>General Weighted Mean</b>	3.96	Agree

As shown in Table 2, the respondents were STEM Strand Grade 11 Section 2 and 3 in terms of Analytic Skills the General Weighted Mean is 3.96 with the Verbal Interpretation of Agree

### ***B. Evaluative Skills***

**Table 2:** Respondents Assessment as to Evaluative Skills

<b>Evaluative</b>	<b>Weighted Mean</b>	<b>Verbal Interpretation</b>
1. I can clearly stated the objectives of the topic when my teacher is using MS PowerPoint.	4.26	Agree
2. PowerPoint made it easier to understand the lecture.	4.30	Agree
3. I find it helpful to understand the topic when my teacher uses animated slides.	4.39	Agree
4. I find it interesting in the topic when my teacher uses MS PowerPoint.	4.27	Agree
5. I find it easy to understand the topic whenever my teacher uses visual elements.	4.18	Agree
6. I find it easy to present the materials in a clear and organized way using MS Powerpoint.	4.38	Agree
7. MS Powerpoint helps me to make topics clear fit to the course.	4.14	Agree

8. MS Powerpoint provides me an opportunity to practice or apply skills through exercise and project.	4.00	Agree
<b>General Weighted Mean</b>	4.24	Agree

As shown in Table 3, whose respondents were STEM Strand Grade 11 Section 2 and 3 in terms of Evaluative Skills got General Weighted Mean of 4.24 with a Verbal Interpretation of Agree.

### ***C. Attitude***

As shown in Table 3, in terms of Attitude the General Weighted Mean is 4.02 with the Verbal Interpretation of Agree.

**Table 3:** Respondents Assessment as to Attitude Skills

<b>Attitude</b>	<b>Weighted Mean</b>	<b>Verbal Interpretation</b>
1. It helps me improve my notes taking and become organized.	4.09	Agree
2. It helps me to become active in class when my teacher uses MS PowerPoint.	4.05	Agree
3. It challenges me to think about the topic.	4.08	Agree
4. It helps me to easy follow instruction	4.03	Agree
5. I was more motivated to attend class.	4.05	Agree
6. It helps me to become participative in the class.	3.86	Agree
7. It helps me to be more confident for the exam.	3.81	Agree
8. It was easy for me personally to stay focused on the topic.	4.18	Agree
<b>General Weighted Mean</b>	4.02	Agree

The researchers found out that the use of MS PowerPoint has effect to the learning skills of the students especially to their Analytic skills, Evaluative skills and Attitude.

#### ***D. Significant difference between the uses of MS PowerPoint to the students***

When Pre-test and Post-test scores were treated per subject of the both group. It shows that there is a significant difference for the mean score of the students per subject. As shown in Table 4. Mathematics subject the mean score in Pre-test is 16.66 while in the Post-test is 21.97. There is significant effect with the point of -7.377 in terms in Mathematic subject.

**Table 4:** Mean Scores of the Student in Math

Math	Mean Score s	t-value	p-value	Decision	Remarks
Pre-Test	16.66	-7.377	.000	Reject Ho	Significant
Post-Test	21.97				

**Table 5:** Mean Scores of

the Student in Science

Stem 3					
Science	Mean Score s	t-value	p-value	Decision	Remarks
Pre-Test	18.35	-8.654	.000	Reject Ho	Significant
Post-Test	22.81				

In the Science subject the mean score in the Pre-test is 18.35 while in the Post-test is 22.81. There is significant effect with point of -8.654 in terms in Science subject.

**Table 6:** Mean Scores of the Student in English

Stem 3					
English	Mean Score s	t-value	p-value	Decision	Remarks
Pre-Test	13.19	-7.576	.000	Reject Ho	Significant
Post-Test	20.46				

In the English Subject the mean score in Pre-test is 13.19 while in the Post-test is 20.46. There is significant effect with point of -7.576 in terms in English Subject.

When Pre-test and Post-test scores treated separately per section. In terms of the Post-test score in the following subject including Mathematics, English and Science.

The researchers found out that there has a significant effect in the learning of the students in three subjects- Mathematics, English and Science.



**Table 7:** Mean Scores of the Student per Section

Stem 2					
Math	Mean Scores	t-value	p-value	Decision	Remarks
Pre-Test	18.95	-4.636	.000	Reject Ho	Significant
Post-Test	21.89				

As shown in Table 7, The Post-test of Stem 2 has a mean score of 21.89 while in their Pre-test has mean score of 18.95. There has significant effect with the t-value of -4.636 in terms of their Mathematics subject.

**Table 8:** Mean Scores of the Student per Section

Stem 2					
English	Mean Scores	t-value	p-value	Decision	Remarks
Pre-Test	11.16	-1.213	.233	Accept Ho	Not Significant
Post-Test	12.51				

The Post-test of Stem 2 has a mean score of 12.51 while in their Pre-test has mean score of 11.16. There has significant effect with the t-value of -1.213 in terms of their English subject.

**Table 9:** Mean Scores of the Student per Section

Stem 2					
Science	Mean Scores	t-value	p-value	Decision	Remarks
Pre-Test	14.86	-3.146	.003	Reject Ho	Significant
Post-Test	17.27				

The Post-test of Stem 2 has a mean score of 17.27 while in their Pre-test has mean score of 14.86. There has significant effect with the t-value of -3.146 in terms of their Science subject.

**Table 10:** Mean Scores of the Student per Section

Stem 3					
Math	Mean Scores	t-value	p-value	Decision	Remarks
Pre-Test	14.38	-6.516	.000	Reject Ho	Significant
Post-Test	22.05		.000		

The Post-test of Stem 3 has a mean score of 22.05 while in their Pre-test has mean score of 14.38. There has significant effect with the t-value of -6.516 in terms of their Science subject.

**Table 11:** Mean Scores of the Student per Section

Stem 3					
English	Mean Scores	t-value	p-value	Decision	Remarks
Pre-Test	15.22	-17.820	.000	Reject Ho	Significant
Post-Test	28.41				

The Post-test of Stem 3 has a mean score of 28.41 while in their Pre-test has mean score of 15.22. There has significant effect with the t-value of -17.820 in terms of their English subject.

**Table 12:** Mean Scores of the Student per Section

Stem 3					
Science	Mean Scores	t-value	p-value	Decision	Remarks
Pre-Test	21.84	-12.831	.000	Reject Ho	Significant
Post-Test	28.35				

Test					
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The Post-test of Stem 3 has a mean score of 28.35 while in their Pre-test has mean score of 21.84. There has significant effect with the t-value of -12.831 in terms of their Science subject.

The Stem 3 students obviously showed an improvement in terms of their academic performance by the use of MS PowerPoint as E-Learning Materials.

## IV. CONCLUSION AND RECOMMENDATION

### *Conclusions*

Based on the data gathered and findings presented, the researchers were able to come up the following conclusion:

The study concludes that there was significant difference between the Pre-test and Post-test of the experimental group in terms to the three subjects which are Math, English and Science.

MS PowerPoint can affect positively and in improving the Analytic Skills, Evaluative Skills and Attitude of the Senior High School in Paranaque National High School. The student can actively participating and stay focus to the lecture and will be motivated to attend class discussion

The PowerPoint should be used in all three subjects.

### *Recommendations*

In reference to the conclusion of this study, recommendations for practice are included but are not limited to the following;

The administrator should encourage the teacher to use MS PowerPoint for their teaching.

Government should provide tools appropriate technology like PowerPoint to enhance quality of education

The teacher must undergo seminars and workshops for re-training to enable them to use the software properly.

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