

PEERKADA: KEY TO INCREASE THE STATISTICS AND PROBABILITY PERFORMANCE OF THE SENIOR HIGH SCHOOL STUDENTS

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ABSTRACT

This study investigated the effect of peer tutoring strategy to the academic performance of Grade 11 students in Statistics and Probability during the 2nd semester of School Year 2018 – 2019 at the Isabela School of Arts and Trades – Main. Specifically, it attempted to determine and compare the performance of the students before and after their exposure to the intervention. This research used experimental method. The semestral grades were the main data used in this study. The results revealed that the performance of the respondents after the intervention were significantly higher than before their exposure to the intervention. Based on the findings, there was an increase in the performance of Grade 11 students in using Peer Tutorial. It is recommended that teachers teaching mathematics should use Peer Tutorial when teaching lessons in Statistics and Probability. Furthermore, a similar study should be conducted to further test the effectiveness of Peer Tutorial.

Keywords:

Peer; Tutorial;
Statistic;
Performance;
Experimental

INTRODUCTION

Statistics and Probability is a core subject in the senior high school curriculum; and is compulsory in any track in grade 11. It is the foundation of scientific and technological knowledge that is vital in the socioeconomic development of the nation. Teachers have always been concerned with their teaching strategies to improve the level of performances of their students. Many educational approaches are being utilized to make the teaching of mathematics interesting because typical practice in teaching mathematics tends to be uninteresting if it does not require inquiry or higher thought process and does not encourage cooperative learning and brain storming. One of the recognized effective methods of instruction to help students increase their academic performance compared to a group of traditional classroom environments is the use of peer tutoring. Peer tutoring consists of students teaching other students of the same or different age, on one-on-one basis or one tutor working with two or three students simultaneously. Likewise, peer tutoring environment as a —safe and non-threatening interactive learning situation. Peer tutoring has been broadly used across academic subjects and has been found to result in academic achievement for a diversity of learners within a wide range of content areas just like academic and cognitive gain. The researcher found out that most of the students have difficulty in understanding lessons in Statistics and Probability. Thus, there are 30 students for SY 2017 – 2018 who failed in the said subject. To address this problem, the researcher came up with this intervention.

Statement of the Problem

This study aimed to determine the effectiveness of peer teaching among students on their performance in statistics and probability of Grade 11 students of Isabela School of Arts and Trades.

Specifically, it aimed to answer the following questions:

1. What is the academic performance of the respondents before their exposure to the intervention?
2. What is the academic performance of the respondents after their exposure to the intervention?
3. Is there a significant difference on the academic performance of the respondents before and after their exposure of the intervention?
4. What is the effect size of the intervention?

Scope and Delimitation of the Study

This intervention Peerkada aimed to assist the Grade 11 students of Isabela School of Arts and Trades – Main most especially those enrolled in Statistics and Probability as one of the core subjects in the K – 12 Curriculum. Further, the results of this study were utilized to determine the effectiveness of peer tutorial as the intervention used as the subject of this research.

How was the intervention adopted in the classroom?

The chosen peer tutors were given materials. The tutorial was done during the vacant time of the respondents. To assure that learning is attained 1 hour per day was allotted for the tutorial sessions and to come up with a good intervention a ratio of 1:3 was adopted. The students who got the top 10 highest final grades in 3rd quarter were assigned as peer tutors.

METHODS AND MATERIALS

This research used experimental design in this study. The respondents were the 3 sections of Grade 11 HUMSS Strand for School Year 2018-2019 enrolled in Statistics and Probability, specifically the 31 students whose grades are lower than 85 which falls under satisfactory level and fairly satisfactory. The teacher assessed the students' 3rd quarter performance and determined the learners who needed assistance and those who had the potentials to be peer tutors. The top 10 highest grades for 3rd quarter were considered as the peer tutors per section. The teacher provided materials to be used in peer tutorial session. The teacher monitored the peer tutorial per section during the implementation of the intervention. Finally, the teacher compared the grades of tutees during the 3rd quarter and 4th quarter and assessed whether there was an increase in the academic performance of the students.

Statistical Treatment of Data

The researcher used the following to analyze the data collection: Frequency count and percentage was used to assess the grades of the respondents before and after the intervention. Paired T-test utilized to determine the difference between the 3rd and 4th quarter grades of the respondents after the intervention is employed and ETA squared used to compare the effect size at the intervention. The data will be tabulated and analyzed using the Cohen's guidelines.

RESULTS AND DISCUSSION

There were thirty-one students consented to participate in the study. The respondents were the 3 sections of Grade 11 HUMSS Strand for School Year 2018-2019 enrolled in Statistics and Probability, specifically the 31 students whose grades are lower than 85 which falls under satisfactory level and fairly satisfactory. *The statistical treatment used in the study is* Frequency count and percentage, Paired T-

test, ETA squared and analyzed using the Cohen’s guidelines. *As the results*, the respondents’ performance in their 4th quarter grades or after the intervention was implemented out of 31 respondents, 21 obtained very satisfactory grade with a percentage of 67.7%. This means that the respondents’ performance improved compared from their 3rd quarter grades before the intervention. 29 out of 31 falls under satisfactory with a percentage of 93.5%. The difference is significant since the t-value computed is less than 0.05 at 5% level of significance. This means that the performance of the respondents has improved after the intervention and the effect size of the intervention and a Cohen’s D value of 0.232 was calculated. This means that the intervention has a small effect size.

This part of the research paper presents what transpire in the study, its findings as well as analysis and interpretation of data. Tables are shown and interpreted to answer the research questions of this research.

Table 1. Frequency and Percentage Distribution of the Respondent’s Performance before the Intervention

Descriptors	Frequency	Percent
Fairly Satisfactory	2	6.5%
Satisfactory	29	93.5%
Total	31	100%

Table presents the performance of the respondents in their 3rd quarter for school year 2018 – 2019. This further shows that there are 29 respondents under Satisfactory with a percentage of 93.5% and 2 Fairly Satisfactory with a percentage of 6.5%.

This means that most of the respondent’s grades in Statistics and Probability before the intervention fall under 80 – 84.

Table 2. Frequency and Percentage Distribution of the Respondent’s Performance After the Intervention

Descriptors	Frequency	Percent
Fairly Satisfactory	4	12.9%
Satisfactory	6	19.4%
Very Satisfactory	21	67.7%
Total	31	100%

The table implies that there are 21 respondents that fall under very satisfactory with a percentage of 67.7%. There are 6 respondents whose performance falls under satisfactory with a percentage of 19.4% and 4 out of 31 falls under fairly satisfactory with a percentage of 12.9%.

This shows that most of the respondents performed Very Satisfactory in their 4th quarter in Statistics and Probability subject.

Table 3. Paired Samples T-test of the Performance of the Respondents Before and After the Intervention

Paired Samples Test					
Paired Differences	t	df		Decision	Interpretation

	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference			Sig(2-tailed)...	Reject Ho	Significant
				Lower	Upper				
Var 01 – Var 02	-2.96774	4.21492	0.74702	-4.51379	-1.42170	-3.920	30	.000	

The table above shows the significant difference between the performance of the respondents before and after the implementation of the intervention.

The results show that the computed t – value is less than 0.05. Hence, the null hypothesis is rejected at 5% percent level of significance. Thus, there is significant difference in the performance of the respondents before and after the intervention. It implies that the performance after the intervention of the respondents in Statistics and Probability is better than that of their performance before the intervention.

Peer tutoring has been researched as an effective strategy to engage students and promote academic success. It improves mathematics performance for students at risk or experiencing mathematics disabilities (Lazarus, 2014).

Table 4. Test of the Level of Significant Effect on the Performance of the Respondents before and after their Exposure to the Intervention

Performance	Mean Scores	Difference Between Means	Eta Squared	Description Effect
Before	82.1613	2.9677	0.232	Small
After	85.1290			

The table shows the results of the performance of the respondents before and after their exposure to the intervention with a mean difference of 2.9677 in favor of the performance after the intervention. To determine the effectiveness of Peer tutorial, eta squared was used. The Cohen’s D value 0.232 indicating that the use of Peerkada has improved the performance level of grade 11 students in Statistics and Probability.

CONCLUSION

In summary, Peerkada is effective method of instruction to help Students increase their Statistics and Probability performance, this leads students to be equip with basic knowledge in Statistics and Probability and can perform better that those who don’t have peer buddy. Based on the results and findings of the study, there was an increase in the performance of Grade 11 students in using Peerkada. There is a significant difference in the performance of the Grade 11 students in their 3rd and 4th quarter and there is a small effect on the level of significance of Peerkada with a significant result, the researcher recommends Teachers teaching Statistics and Probability in Isabela School of Arts and Trades Main to use Peerkada when teaching lesson in Mathematics and that Peerkada is recommended to be used by other subject teachers and a similar study be conducted to further test the effectiveness of Peerkada.

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