

The Impact of Personal Computer on Students' Academic Performance

Sadat G. Blah

Mindanao State University-Maguindanao

Datu Odin Sinsuat, Maguindanao

ABSTRACT

This study aimed to determine the effects of Personal Computer on students' academic performance of the Grade 11 Senior High School students at MSU-Maguindanao. Specifically, this study identified the uses of Personal Computers as rated by the students in their studies, the academic performance of respondents with Personal Computer, the academic performance of respondents without Personal Computer, and the significant difference in academic performance of respondents with and without Personal Computer. Survey questionnaire was used as an instrument in gathering data. The questionnaire contains ten (10) related to the uses of computer in the students' studies. The 10 questions are measured in terms of a 4- point scale such as: 1 for always, 2 for often, 3 for seldom and 4 for never. The statistical tools used in the analysis of data are the frequency count and the mean to describe the effects of personal computer on Senior High School students' academic performance. The data gathered were consolidated and tabulated. The computations were done manually with the aid of scientific calculator. Findings show that the academic performance of the students with personal computer is generally higher than those without personal computer. Therefore, personal computer has effects in improving the students' academic performance.

Keywords: Impact, Personal Computer, Students' Academic Performance

INTRODUCTION

Personal computers have become an important part of society with people depending on them for activities from business to entertainment or education. Access to technology, especially to personal computers (PCs), has shifted from privilege to necessity in many parts of the world. Is in this context residential PC ownership has increased dramatically in recent years both in developed and developing countries. This technology adoption trend in developing countries opens the market not only for new PCs but also for used machines. Globally the main supply of used PCs is developed countries [1].

The use of technology in school learning and teaching has been a priority in the United States and most European countries during the last decade. The National Association for the Education of Young Children's (NAEYC) Position Statement on Technology and Young Children acknowledged that technology can enhance children's cognitive and social abilities if used appropriately [2]. NAEYC also recommended that technology be integrated into the learning environment as one of several support options. The wide adoption of internet and computers in classrooms had changed learning and instruction in all subject areas [3]. As part of the No

Child Left Behind Act of 2001, the Enhancing Education Through Technology program seeks to improve student academic achievement in elementary and secondary schools through the use of technology. In recent years, there has been an increasing interest in investigating the impact of home and school computer usage on student achievement outcomes. Evidence on this topic shows mixed results. Research on the influence of classroom computer use on student achievement has reported no influence or negative influence of using computers for instructional purpose on learning outcomes of math and reading [4; 5].

Other studies about the effectiveness of computer use for instruction had found positive relationships between computers use and students' academic achievements [6;7] These results supported the argument that instructional activities that involve the use of technology capture the interest of students, which facilitates their understanding of the content and provides different way of expressing knowledge and therefore have a positive influence on performance. Thus, in this context the study is conducted to determine the effects of Personal Computer on students' academic performance of the selected thirty (30) Grade 11 Senior High School students at MSU-Maguindanao. Specifically, this study seeks answers the following questions: What are the uses of Personal Computers as rated by the students in their studies? What is the academic performance of respondents with Personal Computer? What is the academic performance of respondents without Personal Computer? Is there a significant difference in academic performance of respondents with and without Personal Computer?

METHODOLOGY

This study made use of descriptive-correlational survey method. The instrument used in gathering data was a survey questionnaire. The questionnaire contained ten (10) related to the uses of computer in the students' studies. The 10 questions are measured in terms of a 4- point scale such as: 1 for always, 2 for often, 3 for seldom and 4 for never. The statistical tools used in the analysis of data are the frequency count and the mean to describe the effects of personal computer on Senior High School students' academic performance. The data gathered were consolidated and tabulated. The computations were done manually with the aid of scientific calculator.

RESULTS AND DISCUSSION

A. Uses of Personal Computer (PC)

The weighted mean and description distribution of the uses of personal computer is shown in Table 1.

Table 1. Weighted Mean and Description Distribution of the Uses of Personal Computer

Uses of PC	Weighted Mean	Description
1. Researching	1.77	Often
2. Note taking	2.53	Seldom
3. Lecture presentation	2.30	Often
4. Video presentation	2.57	Seldom
5. Making requirements	1.33	Always
6. Improving Grammar skills	1.93	Often
7. Doing communications	2.20	Often
8. Improving listening skills	2.37	Often
9. Gaining more information	1.47	Always
10. Improving video presentation	1.47	Always
Overall Weighted Mean	2.0	Often

Legend:	Weighted Mean	Description
	3.50 - 4.00	Never
	2.50 - 3.39	Seldom
	2.49 - 1.50	Often
	1.00 - 1.49	Always

Table 1 shows the how the students use their Personal Computers in relation to their studies. The data revealed an overall weighted mean of 2.0 which is described as often. This means that the student's oftenly used the PC in their studies. Specifically, PC's usage in researching, lecture presentation, improving grammar skills, doing communications, and improving listening skills are described as often. This means the PC's is oftenly used in those mentioned skills and purposes. Furthermore, PC's usage in number 5, 9 and 10 are described as always. This means the PC is very useful in these three skills. The students always use their PC's to do such skills. Lastly PC's usage in number 2 and 4 is described as seldom. This means that PC's is not so useful in these skills.

B. The Students' Academic Performance with Personal Computer and Without Personal Computer

Table 2A and 2B presents the frequency and percentage distribution of the students' with and without personal computer in their academic performance. This also indicates the total mean and its description.

Table 2A. Frequency and Percentage Distribution of Academic Performance of Students' with PC

Range of Grade	Frequency	Percentage	Description
1.25 - 1.00	0	0	Excellent
1.75 - 1.50	8	26.67	Very Good
2.25 - 2.00	18	60.00	Good
2.75 - 2.50	4	13.33	Satisfactory
3.00	0	0	Passing
Total	30	160.0	
Mean = 2.06 (Good)			

It shown in the Table that most (18 or 60.0%6) of the students' obtained a grade ranges from 2.25 to 2.0 general point average, which falls on the description level of good.

The table also reveals that several (8 or 26.67%) of the students obtained a grade ranges from 1.75 to 1.50 general point average, which was described as very good on the description level. On the other hand, few students' 4 or 13.33% had gotten a grade ranges from 2.75 to 2.50 general point average which described as satisfactory in the description level. Meanwhile, there is no student obtained the highest and lowest grade.

In totality, the mean grade of the students' is 2.06. And this result indicates that the mean of the respondents with PC is described as good in their academic performance. This implies that personal computer helps them in making requirements and has a good effect in their studies.

Students Without Personal Computer (PC)

Table 2B. Frequency and Percentage Distribution of Academic Performance of Students Without PC

Range of Grade	Frequency	Percentage	Description
1.25 - 1.00	0	0	Excellent
1.75 - 1.50	2	6.67	Very Good
2.25 - 2.00	21	70.0	Good
2.75 - 2.50	6	20.0	Satisfactory
3.00	1	3.33	Passing
Total	30	160.0	
Mean = 2.06 (Good)			

The data in table 2B shows that zero (0) of the students have obtained a grade within the range of 1.25 to 1.00. Table 4 also shows that there are two (2) or 6.67% of the students whose range of grade from 1.75-1.50 which falls on the description level of very good. This means that the students without PC respond very well in academic performance. This implies that 6.67% of the students performed very well in academic without using personal computer.

Twenty one or 70.0% of the students did well in academic performance although they are not using Personal Computer in their studies. This implies that without Personal Computer the students good in Academic performance. On the other hand, there six (6) or 20.00% of the students obtained range of grade between 2.75-2.5 which is described as average on the given scale. This means that the students satisfactorily provide responses in academic performance without using Personal Computer. This implies that the students still need Personal Computer to perform well in studies.

Meanwhile, there is one (1) or 3.33% of the student obtained range of grade of 3.00 which fall on the description level passing. This means that this student have not performed well in studies and failed to present the requirements in academic. This implies that this student needs to use Personal Computer to address their difficulty.

These findings reveal that without using PC of the respondent has a mean of 2.22 which fall on the description level of good.

C. The Significant Differences in Academic Performance of Respondents With and Without Personal Computer (PC)

The comparison of the students' academic performance between with and without PC is displayed in Table 3.

Table 3. Comparison of Students' Academic Performance between with and without PC

Group	N	Mean	SD	Computed t-value	Description
With PC	30	2.06	0.31	2.10	Significant
Without	30	2.22	0.29		

Comparing the two means, there is significant difference between them. This is indicated by a higher computed t - value of 2.10, which is greater than the critical t-value of 2.00 at 0.05 level of significance. Hence, the data revealed that with PC, the students performed better in their academic performance as compared to those students without PC. Therefore, the hypothesis claiming that there is no significant difference in the students' academic performance with and without PC is rejected.

CONCLUSION

The academic performance of the students with personal computer is generally higher than those without personal computer. Therefore, personal computer has effects in improving the students' academic performance.

References

- [1]. Kahhat, F. R and Williams, E. D. (2009). The importance of personal computers in developing countries: Case study of Peru. In *Proceedings of the 2009 IEEE International Symposium on Sustainable Systems and Technology (ISSST 09)*. IEEE Computer Society, USA, 1. <https://doi.org/10/1109/ISSST.2009.5156779>.
- [2]. National Association for the Education of Young Children. (1996). NAEYC position statement on technology and young children: Ages three through eight. *Young Children*. 51(6), 11- 16.
- [3]. James, R., & Lamb, C. (2000). Integrating science, mathematics and technology in middle school technology-rich environments: A study of implementation and change. *School Science and Mathematics*, 100, 27-36. doi: 10.1111/j.1949-8594.2000.tb17317.
- [4]. Angrist, J., & Lavy, V. (2002). New evidence on classroom computers and pupil learning. *The Economic Journal*, 112, 735-765. doi: 10.1111/1468-0297.00068
- [5]. Rouse, C., & Krueger, A. (2004). Putting computerized instruction to the test: A randomized evaluation of a "scientifically-based" reading program. *Economics of Education Review*, 23, 323-338. doi:10.1016/j.econedurev.2003.10.005
- [6]. Fuchs, T., & Wöessmann, L. (2004). Computers and student learning: Bivariate and multivariate evidence on the availability and use of computers at home and at school. CESifo Working Paper Series (No.1321). Munich, Germany: Ifo Institute for Economic Research.
- [7]. Salerno, C. (1995). The effect of time on computer-assisted instruction for at-risk students. *Journal of Research on Computing in Education*, 28, 85-97.