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Integration of Technology in the Classroom Instruction in Relation to Academic Performance

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Abstract: ***The main purpose of this study is to identify the different technologies used by the teacher and how often they are used in the teaching-learning process. It also determined the significant effect of the technology in the academic performance, as perceived by the respondents. The study used a Descriptive Research Design and utilized a survey questionnaire as a research instrument in gathering data. In addition, the grade five pupils of Punta Central Elementary School served as the respondents of this study.***
The study found that DVD player was the most common technology used by the teacher in the classroom instruction. Further, it was also found that the teacher seldomly used technology in the classroom. On the other hand, it was perceived by the respondents that the use of technology in the classroom instruction improved their academic performance.

Keywords: Technology Integration, Technology, 21st Century, Academic Performance.

1. INTRODUCTION

Technology is defined as any device that helps human being accomplish some tasks and difficulties. Technology plays a significant role in shaping the 21st century challenges and addressing the demand for quality life. It serves as one of the major foundations to improve better services such as communication, transportation, medicine, business, engineering, production and industry. Even the advancement of education can be attributed to technology because it is an effective tool in improving instruction and learning.

The use of technology in teaching-learning process and its inclusion in the curriculum help students, teachers and educators acquire more quality learning experience than before. It became more accessible and easier to use whatever available technology to enhance learning and make instruction more relevant to the learners. Students are encouraged to use technology

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in preparing their reports, projects, assignments and outputs. Teachers are also integrating technology in their lesson to arouse the interest of the students and acquire the skills for maximum use of technology through application, manipulation and discovery.
In spite of what technology can contribute for the development of knowledge, skills and abilities in the school, still there are learning institutions, especially in the rural and remote areas, that are not using technology as part of the instructional materials. This might be the reason why some students are not fully knowledgeable of using technology in the acquisition of knowledge and skills. Standardized tests such as national achievement and national college entrance show relatively low compare to the national standard.

There are reasons why this situation happens; some schools do not have computer units to use for classroom instruction, no source of electricity and internet connection, teachers are not train to use computers and even computers were stolen due to unsafe classroom or laboratory where computer units were installed.
Considering what technology can bring to improve quality instruction in the classroom, the researchers expressed their interest to conduct a research study to validate and measure to what extend technology enhanced the learning instruction and learning outcomes.

Theoretical Review
This study is anchored on both theory of behaviorism (Watson, 1959) and cognitive theory of learning (Thompson et al., 1992). Behaviorism is a theory that explains the use of feedbacks and reinforcements in directing one's behavior towards desirable actions. It expounds how the environment can affect the behavior of a person. Cognitivism, on the other hand, explains how the reinforcements can be used to guide and support mental connections. It examines how to design instruction suited for the learners. These theories support the use of effective learning environment and methodologies, such as using technology, in enhancing learning. In line with this, teachers are responsible in providing the necessary actions and tools to achieve quality learning. The integration of technology and the adoption of e-learning system are some of the effective strategies used in the classroom instruction nowadays. More and more studies show that technology integration improves students' learning processes and outcomes. Teachers who recognize computers as problem-solving tools change the way they teach. They move from a behavioral approach to a more constructivist approach. Students are more engaged in their learning using powerful technology tools, and become creators and critics instead of just consumers of information (Edutopia, n.d.).

2. METHODOLOGY

This study used a descriptive research design. Richards (2011) described this as a purposive process of gathering, analyzing, classifying, and tabulating data about prevailing conditions, practices, beliefs, and processes and then making adequate and accurate interpretation about such data which was suitable to the current study since it aimed to gather, analyze, and tabulate data in identifying the different technologies used by the teacher, how often they are used in the teaching-learning process and its significant effect of the technology in the academic performance. The study was conducted within the parameters of Punta Central Elementary

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School located in the Municipality of Parang. The respondents were the grade five pupils of the said institution. Total enumeration was used resulted to 46 respondents. Furthermore, survey questionnaire was used as research instrument in gathering data needed for the study.

For the data gathering procedure, letters were sent to the school head of the institution to ask permission to conduct the survey to the respondents. After the request letter was approved, the survey questionnaires were reproduced and distributed to the respondents personally. After the questionnaires were answered and retrieved from the respondents, the data were collated, tallied, tabulated. In addition, Frequency Counts and Percentage Distribution were used as statistical tools for analysis and interpretation.

3. DISCUSSION

Table 1 Distribution of different technologies used by the teacher in classroom instruction.

Technology	Frequency	Percentage
Television	3	5%
Laptop	21	33%
Slide show presentation	2	3%
Lapel	1	2%
Computer	5	8%
DVD player	31	49%
Total	63	100%

Table 1 shows that DVD player was the most common technology used by the teachers in the classroom instruction with 49% or thirty-one (31) respondents agreed, laptop followed with 33% or twenty-one (21) respondents agreed, then computer with 8% or five (5) respondents agreed, television with 5% or three (3) respondents agreed, slide show presentation with 3% or two (2) respondents agreed and lapel with 2% or one (1) respondent agreed. This indicates that different technologies were integrated in the classroom instruction to promote effective learning. By integrating technologies, they can extend learning in powerful ways. They can provide students and teachers with access to different up-to-date primary source material, methods of collecting or recording data, ways to collaborate with students, teachers, and experts around the world, opportunities for expressing understanding via multimedia, learning that is relevant and assessment that is authentic, and training for publishing and presenting their new knowledge (Edutopia, 2007).

Table 2 Distribution of the responses with regards to the frequency of using Technology

Technology	Daily	Seldom	Never
How often do you use technology in the classroom?	40%	60%	0

Table 2 shows how often teacher use technology for classroom instruction. It shows that teacher seldomly used technology in classroom instruction with 60% responded. This only signifies

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that there are some challenges when it comes to using technology in the classroom instruction. Problems such as availability of equipment, access to resources, training and support, attitudes and beliefs about technology use, and the skills and knowledge may affect the way teachers utilize technology in their classroom teaching (Winter et. al, 2021).

Table 3. Distribution of responses with regards to the use of technology in classroom instruction.

Indicator	YES	NO
Do you favor to use technology in the classroom as part of your learning process?	40	6
Are you using technology at home as part of your learning?	37	9
Do you believe that the use of technology in the classroom instruction improved your academic performance?	40	6

Table 3 shows the perception of the respondents on the significant effect of technology in their learning. As presented, majority of them favored the use of technology as part of their learning process. In addition, majority of them also believed that the use of technology in the classroom instruction improved their academic performance. This indicates that technology integration could be a factor in student academic achievement and motivation (Harris, 2016). Further, D'Angelo (2018) also explained that technology integration has positive impacts on learner satisfaction, promotes engagement and facilitates academic success.

4. CONCLUSIONS AND RECOMMENDATIONS

The study found out that DVD player was the most common technology used by the teacher in the classroom instruction. Further, it was also found that the teacher seldomly used technology in classroom instruction. With regards to their effect in the academic performance, it was perceived by the respondents that the use of technology in the classroom instruction improved their academic performance. Based on the findings, the following recommendations are presented: (1) school administrators and teachers may promote the use of technology in the classroom in order to enhance the teaching- learning process through partnership and donation from the stakeholders; (2) teachers should be knowledgeable and computer literate in order to help the pupils use the different technologies available to improve their knowledge, abilities and skills; and (3) parents should understand that technology is part of the learning process in the 21st century skills, thus, providing their children with this technology will develop better learning experience.

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