

THE EFFECTIVENESS OF "Click Click" TEACHING STRATEGY IN THE ACADEMIC PERFORMANCE OF GRADE SIX LEARNERS IN MATHEMATICS

Shallimar A. Bayucca

Department of Education, Schools Division of City of Meycauayan, Meycauayan City, Bulacan, Philippines

*Corresponding Author: shallimar.bayucca@deped.gov.ph

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ABSTRACT

This study aimed to determine the effect of "Click Click" strategy in the academic performance of Grade six pupils in Mathematics. The study used an experimental method using posttest only design with a 20-item test questionnaire as an instrument to gather data from ninety-six (96) respondents using convenience sampling technique. This study used Microsoft Excel data analysis to treat the data with the use of the following statistical tools: weighted mean, standard deviation, and t-test. Result shows that the control group's mean score was interpreted as having "Average Mastery" of the lesson upon receiving traditional way of teaching. While the mean score of the experimental group showed "Closely Approximating Mastery" of the lessons after receiving the "Click Click" strategy. The mean score of the experimental group is higher than the mean score of the control group. In addition, since the computed T-value is greater than the tabular value/ critical value, it rejects the null hypothesis which further means that there is a significant difference in the mean score on the posttest between the control and experimental groups. With the foregoing results, the researcher recommended using PowerPoint presentations with interactive slides to involve them in the teaching-learning process since pupils learn, play, and is entertained all in one. The result encourages school Administrators to provide the teachers opportunities to update themselves on the use of technology for them to be adept with the demands of their work in the present generation.

Keywords: Interactive Slides, Academic Performance, Mathematics, Teaching Strategy, Grade 6 Learners

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1. Introduction

Mathematics is the most useful subject as it applies to any age at any circumstances in the day-to-day encounters. Its use does not stop when a child steps out of the classroom but goes beyond the school to the community and far more into adult life. Thus, teachers encourage the learners to engage in rich and exciting learning environment and equipped them with lifelong learning. All of which are vital in meeting and surviving the challenges of the 21st century world (Ragma, 2019).

Mathematics elicits negative reaction from the learners as it confined them in dealing numbers. Learners should not be blamed with their responses as this may have rooted from previous learning experiences or they have a unique way of learning. According to a study, improving problem-solving abilities remains a challenge to teachers and to students (Jimenez, 2020). A study elicited that problem-based learning can help improve the critical thinking skills of students (Lapuz and Fulgencio, 2020).

The same strategy in the day to day encounter with the learners makes learning to bore. Learners rely on the instructional tools used by the teacher in the teaching-learning process. Thus, teachers must be creative and resourceful by using different techniques and tools for learning to take place. On a survey, it stated that those teachers were very

much prepared with their original teaching strategies and classroom management techniques for their students (Claud, 2020).

One change in the educational system is the use of technology in the teaching-learning process. A research stated that teaching is a developing field of profession and it comprises skills, talent, and dedication (Asio and Riego de Dios, 2019). It has proven its effect in improving education in the earlier years. These technologies have shown their potential in assisting teachers in preparing instructional materials. A researcher also enumerated ten motivating factors that help teachers develop supplementary learning materials (Jimenez, 2020). Today, it is one of the most valuable tools available for classroom instructions as the use of technology in teaching Mathematics is highly effective and recommended and that integrating technology as an intervention in teaching Mathematics will lead to improved performance (Ragma, 2019). Using technology as a teaching tool to increase students' desire to learn and understand, Mathematics feeds off their desire to be engrained of technology which can cause better learning and improved performance on standardized tests (Burkhart, 2011).

Instructional media refers to media technology, learning technology, or technology. It plays a crucial role in delivering instruction to learners because it arouses the interest of the learners and affects the outcome/performance of an activity. Educational technology refers to integrating electronic learning (e-learning) or computer-related activities. It is the role of the teacher to promote effective and meaningful teaching and to motivate the learners to learn, enjoy and love Mathematics. According to a study, the 21st century education expects educators to have professional qualities and skills (Asio and Riego de Dios, 2018). We expect the teachers to facilitate learning for their students by showing their acumen and versatility in delivering the lessons (Nessipbayeva, n.d.). The teacher's versatility in using different teaching strategies and instructional materials that will address the needs, interests and motivation of the students is very crucial to fulfill the said responsibility (Ragma, 2019).

The use of power point presentations with interactive slides is the focus of "Click Click Strategy. It also involves hyperlinks that link the slides in a variety of ways in the teaching-learning process. Strategic Intervention Materials will be used in the study as the learners are motivated by the slides and will be able to manipulate the laptop for them to click their answers. This caters to the three basic learning styles which are visual learning (learn by seeing), auditory learning (learn by hearing) and kinesthetic learning (learn by doing) and other multiple intelligences defined by Dr. Howard Gardner including verbal-linguistic, logical-mathematical, visual-spatial, bodily-kinesthetic and may also include interpersonal intelligence since it will involve group activities (Mead, n.d.; Lunenburg and Lunenburg, 2014).

2. Literature Review

In the educative process, it is the learners are at the center stage. They are the most significant factors in the learning environment. Each one of them is an exceptional individual. They come from different sectors of society with a different cultural background, socio-economic profile, orientation, and varied experiences. The domain of diversity among learners allows an individual learner to develop his multiple intelligences. Hence their needs should be addressed and be met, that's why teachers are to provide learning opportunities and varied experiences to cater to their individual needs and providing them quality education.

Researchers show that there is no best strategy that could work in a million of different student background and characteristics. However, for teachers to impart, they must use suitable approaches, methods, and schemes "topped with a kindhearted and winsome nature". Selecting the best teaching methods, learning activities and instructional materials or resources for learners which align to the objectives of the lesson begets teachers. Encouraging situations for learners to use higher order thinking skills is a must. Applying innovative teaching and learning methods is precarious if we are to inspire and engender a spirit of learning and enthusiasm among the learners (Naga and Iyappan, 2018).

The advantages of visual aids in the learning process have several advantages. Visual aids can get attention of learners. The students get interested in things and pictures than words. This makes them roused, during unholy hours. The visual aids can give a variety of perspectives. Students' span of interest is limited, and they are wandering off at irregular intervals. Visual aids help students memorize. According to psychologists, the best way of experiencing facts is by seeing the actual objects or events, pictures or by being told or reading them. And visual aids save precious time. The things we see are faster and surer than what we hear or feel. Graphic presentations like pie graphs and charts are easier to grasp than verbal descriptions.

For the delivery of a more efficient and humanizing teaching and learning, the technology affects education for change. There are three trends that could carry on to education. The first trend is the paradigm modification from a teacher-centered to a student-centered approach. The second is the widening of comprehension that education is not a delivery of information but an educative process of cultivating the three domains of learning. And the third trend is the upsurge in using recent information and communication technology or ICT. ICT-based learning environment has been

the demand in practice learning to build a more effective approach to the learning process of students (Muhtadi et al., 2017).

Using information and communication technology (ICT) enables teachers to save time and resources as it provides a vast array of information, aids in the preparation of reports and learning materials to be used in the teaching-learning process (Nwigbo and K, 2016). Teachers are expected to display awareness of technology's potential to enhance learnings by integrating technology into their instruction to maximize student learning (Nessipbayeva, n.d.). As the findings of a particular study revealed that there exists a relationship between ICT and academic performance and ICT positively affects students' retention (Hussain et al., 2017; Basri et al., 2018).

As stated by a study, Mathematics is the very basis of all sciences and technology (Fasasi and Yahya, 2016). Therefore, development of functional technological policies should be in place through equipping the teachers first thereby benefitting the learners as the product of such technology. This was supported another study claiming that ICT improves the way Mathematics should be taught and enhances student understanding of basic concepts and promotes greater collaboration among the students (Keong et al., 2005). Using technological tools can help students develop an understanding of Mathematics (Muhtadi et al., 2017).

3. Methodology

Design

The study used an experimental method using posttest only design. Experimental matching was done based on the scores of the students in the second quarter examination. Matched samples are paired up so that the participants share every characteristic except the one under investigation. An experimental and control group was assigned randomly when ensured that they are matched in terms of important characteristics including gender, age, and intelligence (McLeod, 2017). The "Click Click" strategy was applied to the experimental group while traditional teaching was applied to the control group. A posttest was carried out on both groups after implementing the strategy to assess the effect of the manipulation.

Respondents

The respondents of the study were 96 Grade Six students from heterogeneous classes composed of 48 respondents in each group. Heterogeneous grouping distributes students among various classrooms of a certain grade within a school (Bainbridge, 2020). Both groups are of the same age, abilities and educational needs so their intelligence is of the same level based on the matching performed before assigning control and experimental group.

Instrument of the study

The researcher used Strategic Intervention Materials (SIMs) in Mathematics 6 as the tool in the experimentation. A self-devised questionnaire composed of 20 items was also used to gather the needed data. A Table of Specification was planned to construct the content of the test questions based on the K to 12 curriculums in the grade level. The test construction was done with the supervision of the institution's master teachers and Mathematics experts. The reliability and validity of the questionnaire was tested by administering it to the section not included in the study. The lesson plans used were patterned to the lesson guides given by the curriculum planners of the Department of Education and were checked by the school head.

Data Analysis

The following statistical tools were used with the help of data analysis program of Microsoft Excel: Average Mean was used to measure the central value/score which stand the entire group; Standard Deviation was used to measure the variability of the scores; and T-test was used to test if there is a significant difference on the academic performance of the respondents in Mathematics after the intervention.

To categorize the academic performance of the pupils in the posttest as revealed by their correct response, it used the following scale. The descriptive scales are as follows.

Table 1. Scale for Mastery Level of Pupils.

SCORES	PERCENTAGE OF CORRECT RESPONSES	MASTERY LEVEL DESCRIPTION
18-20	96% - 100%	Mastered
15-17	86% - 95%	Closely Approximating Mastery
12-14	66% - 85%	Moving Towards Mastery
7-11	35% - 65%	Average Mastery
4-6	15% - 34%	Low Mastery
1-3	5% - 14%	Very Low Mastery
0	0% - 4%	Absolutely No Mastery

4. Results and Discussion

The study determines the effectiveness of “Click Click” teaching strategy in the academic performance of Grade six pupils in Mathematics. The following tables present the results of the study.

Table 1. Mean and Standard Deviation of Posttest Scores of Grade VI Pupils.

GROUP	N	MEAN	SD	DESCRIPTION
CONTROL GROUP	48	10.85	1.34	Average Mastery
EXPERIMENTAL GROUP	48	15.02	2.56	Closely Approximating Mastery

Table 1 displays the means scores of the control and experimental group. The control group has a mean score of 10.85 with a corresponding mastery description of “Average Mastery” in the Likert scale. While the experimental group has a mean score of 15.02 that comprise the “Closely Approximating Mastery” description in the Likert scale. The result also shows a mean difference of 4.17 in the scores of the two groups in which the experimental group has a higher mean score than the control group. This means that the experimental group has a better performance in the Mathematics subject than the control group.

Table 2. *T*-test for Significant Difference in the Academic Performance of Students.

GROUP	Mean	Difference	Df	Tabular Value	Computed Value
CONTROL GROUP	10.85	4.17	47	4.70	-9.98*
EXPERIMENTAL GROUP	15.02				

* $p < .05$

Table 2 shows the *t*-test for a significant difference in the academic performance of students. As seen, the computed *t*-value was -9.98 which is higher than the tabular value of 4.70. This means that the result is significant at Alpha significance of .05 levels. Thus, it is safe to assume that there is a significant difference in the scores between the two groups. The result further reiterates that the difference on the mean scores between the control group and the experimental group after implementing the “Click Click” teaching strategy has a significant effect on improving of the students’ performance. This means that the teaching strategy is effective. The abovementioned result coincides with a study that showed positive benefits from interactive use of clickers at the college and K-12 levels (Espey and Brindle, 2010). Another study had shown that students yielded a high level of support for the course instruction emphasizing critical thinking (Stedman and Adams, 2014).

5. Conclusion

Based on the findings, it can be deduced that the control group’s mean score was interpreted as having “Average Mastery” of the lesson upon receiving traditional way of teaching while the mean score of the experimental group showed “Closely Approximating Mastery” of the lessons after receiving the “Click Click” strategy. The mean score of the experimental group is higher than the mean score of the control group. The computed *T*-value is greater than the tabular value/ critical value, the null hypothesis is rejected so there is a significant difference in the mean score on the posttest between the control and experimental groups and that the intervention implemented is effective. Likewise, it is recommended that administrators should provide opportunities for teachers to be equipped with

technological skills needed for them to deliver their lessons effectively according to the demand of the present generation.

This study has proven that the strategy implemented was effective in the learner-respondents. However, it also possesses a significant area of limitation since the study used a posttest only design; a pre-test and posttest design be used for a more valid result.

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