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Dynamic Learning Program for Millennial Learners

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ABSTRACT

This research determined the effectiveness of Dynamic Learning Program for the six science process skills of our Grade 9 millennial learners of Soom Integrated School, Trinidad, Bohol, Philippines. These six science process skills are observing, communicating, classifying, inferring, measuring and predicting. Fifty three students were the respondents of the study and quasi-experimental method was used. To determine the significant mean difference, z-test was used. The target topics of the experiment were the three modules of the third grading period - Volcanoes, Climate and Constellation. Findings revealed that Dynamic Learning Program helped students obtain higher academic performance in science, thus the six science process skills were enhanced and developed. Post-test data rejected the null hypothesis; there was a significant difference between the pre-test and post-test scores of the student. An enriched Dynamic Learning Program was designed to address the issue on low performance in science subject.

KEYWORDS: *Science Teaching; Dynamic Learning Program for Millennial Learners; Quasi-Experimental Method; Trinidad, Bohol, Philippines*

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INTRODUCTION

Science is an exciting world. A world without science is a world without all the conveniences and the comforts of today. Based on the K-12 Curriculum Guide for Science, the main goal of Science teaching is scientific literacy and one of the most important and pervasive goals of schooling is to teach students to think (Corpuz et.al 2014).

Education aims at giving the necessary skills and tools to the individual. The student uses these skills and tools in his interaction with the constantly changing environment. The goals of education are taken up from day today. And any interest and activity of the student should contribute to the realization of the aims of education of each particular student. Such goals of education are not set in advance.

The major goal of parents and teachers is to produce educated and concerned citizens, and scientific literacy is a critical component of this endeavour. Scientific literacy is more than just knowledge of scientific concepts; it is the ability to apply scientific knowledge to everyday problem-solving situations that impact health, safety, and the environment. During the past quarter-century, education research has provided a deeper understanding of how students learn science and of the knowledge and skills required for academic achievement. This knowledge is invaluable to teachers in guiding instructional decisions, and has implications for science education at all levels (Bentz et al. 2014). The gap between how students learn out of school and how they learn in school can lead to boredom, passivity, and, ultimately, a decreased amount of learning (Roehl, Reddy & Shannon, 2013).

A sense of urgency to adapt to millennial learning preferences is heightened as educators increasingly struggle to capture the attention of today's students. With a classroom full of millennial learners, it is essential that teacher educators adjust their pedagogy to meet their students' needs (Vaughan, 2014). Unlike previous generations, millennial reared on rapidly evolving technologies demonstrate decreased tolerance for lecture-style dissemination of course information (Prensky, 2001). Similarly, Suson et al. (2020) stated that teaching should accompany with technology to cater the needs of new generation learners. it is not enough that Incorporation of active learning strategies into the classroom is critical in order to reach millennial students. Millennial learners drive change in learning environments around the world. The technology, which digital natives grow up with, has induced today's students to "think and process information fundamentally differently from their predecessors". Although educators bemoan this generations' inability to focus, millennial expert Marc Prensky (2010) pointed out that "it is not our students' attention capabilities that have changed, but rather their tolerance and needs" (p. 2). This characteristic actually validates the urgency to adopt alternative methods of instruction, and many teachers are incorporating active learning strategies as a better way to engage these students.

Literature Review

This study is anchored on the Theory of Progressivism by John Dewey (1976). This theory stresses the liberation of the child from rote learning and focuses on the child as learner, emphasizing activities and experiences rather than verbal

and literary skills. Moreover, progressivism claims that the child's growth and development as an individual depend on his experiences and self-activity. Education should be active and related to the needs and interests of the learners. The interest of the child is the chief guide in the educative process and traditional practices are discarded in favor of modern practices (de Catalena 2007).

Studies of Bernido (1990) are well documented, it was stated that independent learning is inevetable and in order to meet the aims and objectives of the school, dynamic learning program (DLP) should be taken into consideration in dealing with new generation students.

Dynamic Learning Program

Bernido and Rances (2011) have stated that Dynamic Learning Program (DLP) is a program centered on activity based multi-domain learning that requires students to work independently, and to discover and understand the lesson on their own by reading the concept notes and by doing the exercises before the lesson is discussed and explained. After about forty-minute exercises, the teacher starts discussing the lesson. It is only during this time that the students are encouraged to ask questions to help them further understand the lesson. The idea is that, students learn more by doing rather than by merely listening. The students are not given any assignment for them to work at home giving them ample time to rest and to spend time with their family members especially on a weekend. All activities are done in school, facilitated and supervised by the teacher who ensures that all activities are done by the students themselves. Parents on the other hand are very much guided on every detail of the activities through the portfolios of the students.

Moreover, the pedagogical maxims of Dynamic Learning Program are as follows: Learning by doing, where students in science classes, need to think with their own minds and work with their own hands; Sound fundamentals because virtuoso levels are reached only by being well-grounded in the fundamentals; and Mastery not vanity for simple problems completely and clearly solved have greater educational value than advanced problems sloppily analyzed with forced final answers. DLP is adaptable, thus, the educational program must be adaptive because no two learning situations are ever completely alike. Honesty is strengthened. Cheating is unscientific because fraudulent data invalidate evaluation and assessment. (Bernido-Bernido 2011; Rances 2011).

Based on our knowledge, there were no studies conducted about DLP in the province of Bohol. It is in this light that the researcher wants to develop a Dynamic Learning Program designed for the millennial learners and to evaluate its effectiveness in their performance.

Materials and Methods

This study utilized the quasi-experimental method to prove or disprove the effectiveness of the Dynamic Learning Program (DLP). An experiment conducted using Dynamic Learning Program in the teaching of the six science process skills covering Unit III in the learning session started on November 20, 2017. This study started with the planning lessons that is part of the Third Grading in the K-12 Curriculum using Dynamic Learning Program. The approach was based on Progressivism, which emphasizes more on learning by doing for science students.

Objective of the Study

This research assessed the status of Dynamic Learning Program in teaching Science to Grade 9 students at Soom Integrated School, Trinidad, Bohol the basis for proposed learning activities.

Results and Discussions

This part presents the scores in the pre-test and post-test of the students in the following 6 process skills as to: observing, communicating, classifying, measuring, inferring and predicting.

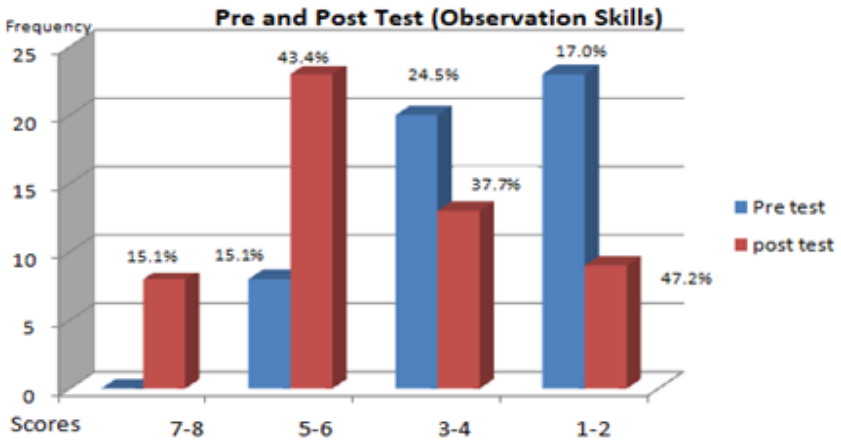

Figure 1. Observing Skills

Figure 1 presents the scores in the pre-test and post-test of the students in observing skill. In the range of scores 1-2, the frequency of the pre-test and post-test scores shifted from 25 (47.2%) to 9 (17.0%). In the range of scores 5-6, the frequency of the pre-test and post-test scores shifted from 8 (15.1%) to 23 (43.4%). In the range 7-8, the frequency shifted from 0 (0%) to 8 (15.1%). The result shows that the post-test has a higher frequency of getting a high range of scores than that in the pre-test. This reveals that the students developed the observing skill using Dynamic Learning Program because DLP provides our millennial learners the opportunity to have meaningful learning through thinking, observing, reflecting and exploring on their preferred manner.

Figure 2.

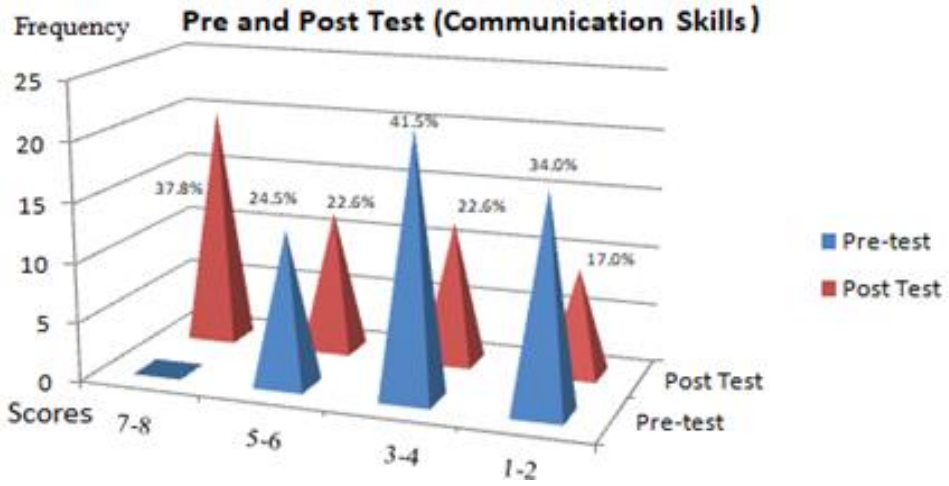

Figure 2 presents the scores in the pre-test and post-test of the students in communicating skill. In the range of scores 1-2, the frequency of the pre-test and post-test scores shifted from 18 (34.0%) to 9 (17.0%). In the range of scores 7-8, the frequency of the pre-test and post-test scores shifted also from 0 (0%) to 20 (37.8%). The result shows that the post-test has a higher frequency of getting a high range of scores than that in the pre-test. This reveals that the students developed the communicating.

Figure 3. Classifying Skill

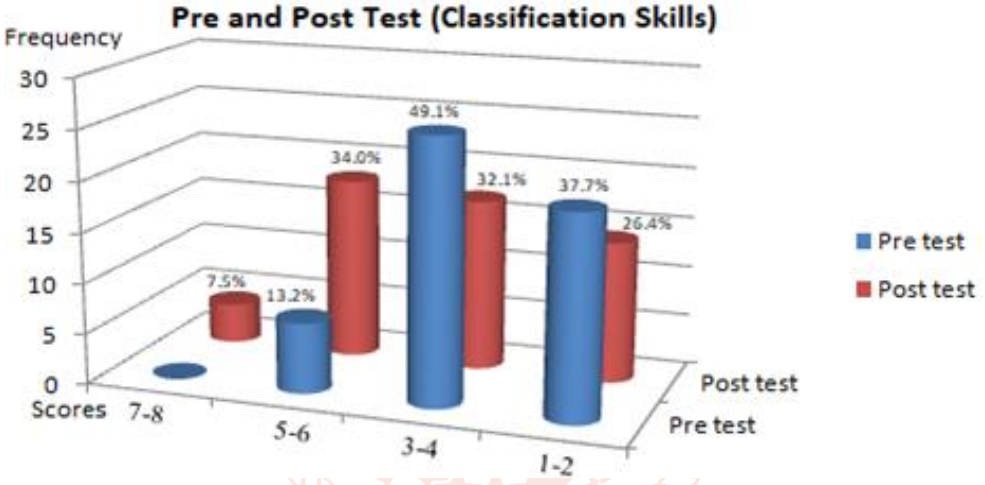

Figure 3 presents the scores in the pre-test and post-test of the students in classifying skill. In the range of scores 1-2, the frequency of the pre-test and post-test scores shifted from 20 (37.7%) to 14 (26.4%). In the range of scores 5-6, the frequency of the pre-test and post-test scores shifted from 7 (13.2%) to 18 (34.0%). In the range of scores 7-8, the frequency of the pre-test and post-test scores shifted from 0 (0%) to 4 (7.5%). The result shows that the post-test has a higher frequency of getting high range of scores than that in the pre-test. This reveals that the students developed the classifying skill using Dynamic Learning Program because DLP gives our millennial learners the opportunity to have meaningful learning through thinking, observing, reflecting and exploring on their preferred manner.

Figure 4.

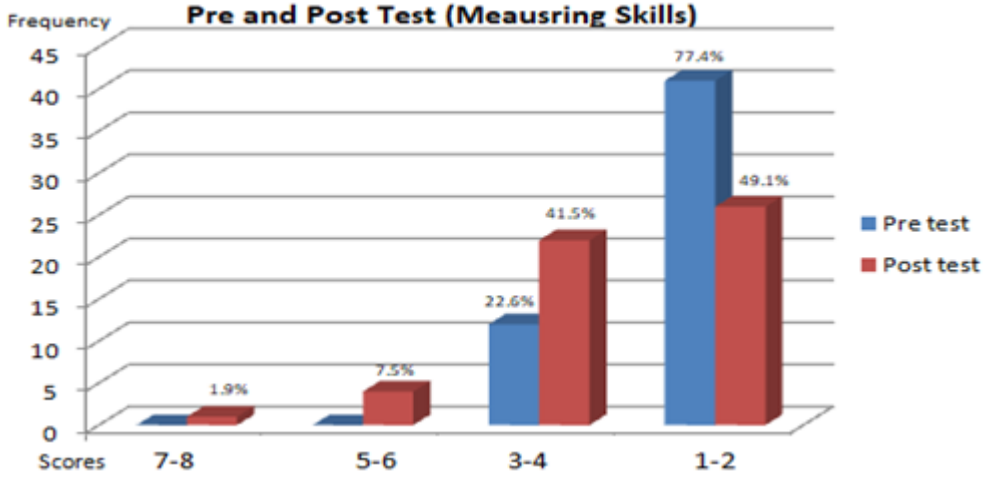

Figure 4 presents the scores in the pre-test and post-test of the students in measuring skill. In the range of scores 1-2, the frequency of the pre-test and post-test scores shifted from 41 (77.4%) to 26 (49.1%). In the range of scores 5-6, the frequency of the pre-test and post-test scores shifted from 0 (0%) to 4 (7.5%). In the range of scores 7-8, the frequency of the pre-test and post-test scores shifted from 0 (0%) to 1 (1.9%). The result shows that the post-test has a higher frequency of getting a high range of scores than that in the pre-test . This reveals that the students developed the measuring skill using Dynamic Learning Program because DLP gives our millennial learners the opportunity to have meaningful learning through thinking, observing, reflecting and exploring on their preferred manner.

Figure 5. Inferring Skills

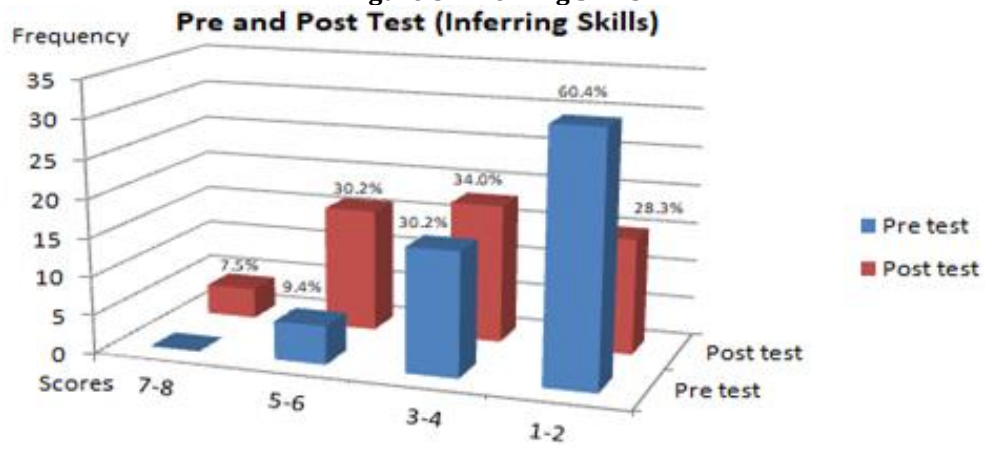

Figure 5 presents the scores in the pre-test and post-test of the students in inferring skill. In the range of scores 1-2, the frequency of the pre-test and post-test scores shifted from 32 (60.4%) to 15 (28.3%). In the range of scores from 5-6, the frequency of the pre-test and post-test scores shifted from 5 (9.4%) to 16 (30.2 %). In the range of scores 7-8, the frequency of the pre-test and post-test scores shifted from 0 (0%) to 4 (7.5%). The result shows that the post-test has a higher frequency of getting a high range of scores than that in the pre-test. This reveals that the students developed the inferring skill using Dynamic Learning Program because DLP gives our millennial learners the opportunity to have meaningful learning through thinking, observing, reflecting and exploring on their preferred manner.

Figure 6. Predicting Skills

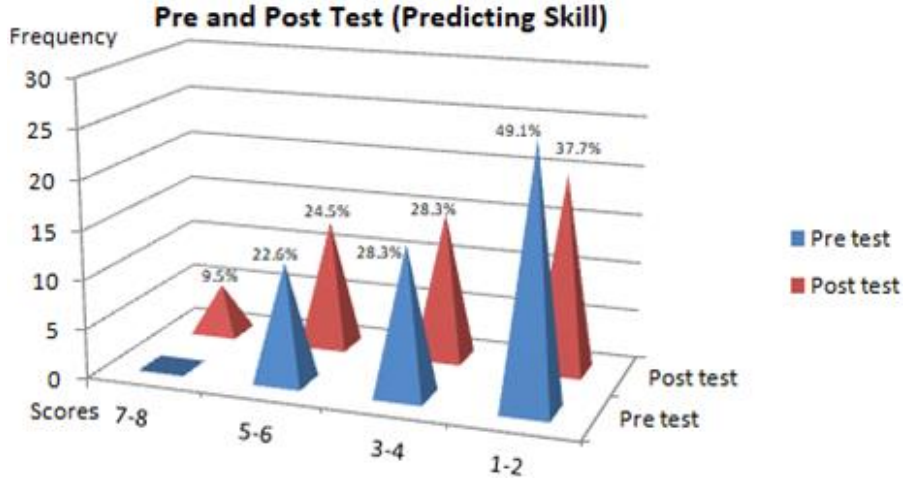

Figure 6 presents the scores in the pre-test and post-test of the students in predicting skill. In the range of scores 1-2, the frequency of the pre-test and post-test scores shifted from 26 (49.1%) to 20 (37.7%). In the range of scores 7-8, the frequency of the pre-test and post-test scores shifted from 0 (0%) to 5 (9.5%). The result shows that the post-test has a higher frequency of getting a high range of scores than that in the pre-test. This reveals that the students developed the predicting skill using Dynamic Learning Program because DLP gives our millennial learners the opportunity to have meaningful learning through thinking, observing, reflecting and exploring on their preferred manner.

Discussions

The study used the different Dynamic Learning Program activities based on the three modules in the third grading topics of Science 9 such as the Volcanoes, Climate and Constellation. These topics are based on the K-12 Curriculum Guide. The experiment was conducted to the respondents upon the permission of the principal of the school. Before the Dynamic Learning Program was implemented, a pre-test was made and after that intervention, a post-test was made using the adopted questionnaires. The retrieved data were collected and treated using z test. The result revealed that: Observing skill. In the pre-test, out of 53 students there were 8 (15.1%) students who got a score above the median which is ranging from 5 to 8. In the post-test out of 53 students there were 31 (58.5%) students who got a score above the median which is ranging from 5 to 8. Communicating skill. In the pre-test, out of 53 students there were 13 (24.5%)

students who got a score above the median which is ranging from 5 to 8. In the post-test out of 53 students there were 32 (60.4%) students who got a score above the median which is ranging from 5 to 8.

Classifying skill. In the pre-test, out of 53 students there were 7 (13.2%) students who got a score above the median which is ranging from 5 to 8. In the post-test out of 53 students there were 22 (41.5%) students who got a score above the median which is ranging from 5 to 8.

Measuring skill. In the pre-test, out of 53 students there were 0 (0%) students who got a score above the median which is ranging from 5 to 8. In the post-test out of 53 students there were 5 (9.4%) students who got a score above the median which is ranging from 5 to 8.

Inferring skill. In the pre-test, out of 53 students there were 5 (9.4%) students who got a score above the median which is ranging from 5 to 8. In the post-test out of 53 students there were 20 (37.7%) students who got a score above the median which is ranging from 5 to 8. Predicting skill. In the pre-test, out of 53 students there were 12 (22.6%) students who got a score above the median which is ranging from 5 to 8. In the post-test out of 53 students there were 18 (34.0%) students who got a score above the median which is ranging from 5 to 8.

In terms of the pre-test and post-test scores of the students, the post-test has the highest frequency of getting a high range of scores than the pre-test scores on the 6 science process skills. In terms of the significant difference between the scores of pre-test and post-test of this aforementioned science process skill, all of the results have a p value of less than 0.01. This means that the results are "highly significant" which further shows that Dynamic Learning Program approach is effective.

Conclusions

Based on the findings, the study concluded that: The use of Dynamic Learning Program to millennial learners of Soom Integrated School, Trinidad, Bohol enhanced and developed the six science process skills of the students in grade 9 in the 3 modules namely: Volcanoes, Climate and Constellation. Thus, DLP is an effective approach that helps students learn by doing. the results of the significant difference between the pre-test and post-test scores were all highly significant, this study further concluded that Dynamic Learning Program addressed the needs and interest of the millennial learners nowadays. Therefore; the proposed enhanced learning activities are highly encouraged to be used. Previous research conducted by suson et al. 2020.

Recommendation

To improve the learning of the millennial students most especially in Science, the following are some recommendations:

- In teaching Science, Dynamic Learning Program should be adopted because it is effective in the learning of our students.
- Dynamic Learning Program should be used horizontally to all subjects because it actually develop their fundamental skills in learning by doing independently by themselves, and discover their own innate potentials that will give students the freedom to explain and expand their ideas and understanding.
- Our millennial learners should be given varied activities that will cater the needs of the development of the science process skills. The activities will help also the teachers to assess the learning of the students. These skills are the keys to success of our students at school, at home and even at work when they grew up.

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