International Journal of Research in Engineering, Science and Management
Volume-2, Issue-6, June-2019
www.ijresm.com | ISSN (Online): 2581-5792

Strategic Intervention Materials for Enhancing Physical Science Instruction in Grade 12 at San Nicolas National High School

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***Abstract*: This study aimed to develop Strategic Intervention Materials which will enhance students' performance in learning Physical Science. The descriptive method of research was used with the questionnaire as the main data gathering instrument. In addition documentary analysis provided the data regarding the performance of the students. Respondents were Grade 12 students under TVL and HUMSS Track. Frequency, percentage, means, weighted mean, were the statistical tools applied to treat the gathered data. Results of the study revealed that students had fairly satisfactory performance in Physical Science. Results also showed that the learning competencies are very difficult for Grade 12 students. Students agreed that their attitude toward Physical Science can influence their performance. In view of the findings, it was recommended innovative and latest Strategic Intervention Materials (SIM) may be further explored and utilized in teaching to enhance students' performance in Physical science. Determining the attitude of students toward the subject should also take into consideration as a factor of students' performance.**

***Keywords*: Intervention materials, students' performance**

1. Introduction

The paramount role of science education in everyone's life is inevitable. It facilitates our knowledge, skill and learning. In the 21st century, science education demands for personalizing learning so that every learner may develop their skills, abilities, full potentials and promote life-long learning. In order to educate in the 21st century, science teachers need to innovate and cultivate the learners' interest in the material by showing how this knowledge applies in the real world. The ultimate goal of science teaching is to provide appropriate and effective instruction to students and, in turn, promoting effective learning. Thus, teachers, themselves, become the agents in combating these predicaments to achieve successful education process by devising and providing necessary materials that are suitable to students need. In science teaching, Strategic Intervention Material (SIM) is used as teaching aid and introduced into the teaching methods to stimulate the activity of the students and thereby increasing their level of understanding. The use of these materials is important towards achieving the needed competencies of the students which they failed to achieve in regular classroom instruction. Intervention has become dynamic way for science teachers to ensure that all students increase the level of understanding and skills on the lesson. Productivity of teaching science will be enhanced when there are available, sufficient and strategically designed instructional and intervention materials appropriate for the multitude of students, considering their learning styles, personality types and stress-coping mechanisms. It is imperative that science teachers have a holistic understanding of their learners to craft personalized instructional materials, thus addressing students' individual needs to achieve better comprehension in science. (Dacumos, 2015). In Physical Science teaching, the applied and visual natures helped students see the connections and importance of science to their lives and their communities. Instructional and intervention materials in learning Physical Science reinforced the development of problem solving and critical thinking skills and highlight the importance of science careers to society. However, teaching Physical Science lessons in San Nicolas Senior High schools is a great challenge and needed lots of effort for the teachers. The access of student's Learning Module and Learning Guide was limited and there was no module available for the students to help them in the teaching – learning process as prescribed by the curriculum. Hence the researcher deemed it significant to conduct a study on this concern along with the aim of formulation of Strategic Intervention Material that would help students to think critically and developed their higher order thinking skills.

2. Statement of the Problem

This study aimed to develop Strategic Intervention Materials which will enhance students' performance in learning Physical Science.

1. Specifically, it sought answers to the following questions:
2. What is the performance of Grade 12 students in Physical Science?
3. Which learning competencies in Physical Science appear to be relatively more difficult to students?
4. What are the attitudes of students towards Physical Science?
5. What Strategic Intervention Materials may be proposed to enhance students' level of competency in Physical Science?

3. Research Methodology

A. Research design

The study used the descriptive method of research. This method was used since the study aimed to develop Strategic Intervention Materials which will enhance students' performance in learning Physical Science.

B. Participants and/ or other source of data and information

The subject of the study will be composed of fifty (50) Grade-12 senior high school students from Humanities and Social Sciences (HUMSS) HUMSS and Technical Vocational Livelihood (TVL) Strand of San Nicolas National High School. Simple random sampling will be used to identify the respondents. The main instruments of the study will be researcher–made questionnaire. The main instruments of the study will be researcher–made questionnaire and documentary analysis for the performance of Grade 12 students in Physical Science for the First Quarter during the school year 2017-2018.

- *Questionnaire.* The survey questionnaire was the main instrument used in gathering the data and other necessary information for the study. It covered the difficult topics in Physical Science and attitudes of students toward Physical Science.
- *Documentary Analysis.* To determine the level of performance of senior high school students in Physical Science, the researcher used documentary analysis of the students grades from DepEd Promotional Report Card for the first quarter.

C. Data gathering methods

The following tools will be used to interpret the data gathered from the respondents of the study.

- *Frequency and percentage.* These will be used to show the distribution of respondents as to their level of performance.
- *Mean.* This will be used to show the average performance of students in Physical Science.
- *Weighted mean.* This will be used to determine the respondents' level of difficulty on the different learning competencies in Physical Science and attitudes toward Physical Science.

4. Findings

Based from the data obtained, the following were the findings of the study.

A. Performance level of students in physical science

Out of 50 students, 18 students had fairly satisfactory of performance in Physical Science. There were 13 students with satisfactory grades and 12 students had very satisfactory performance. Only 7 students were classified to have an outstanding level of performance in Physical Science. Most of the students had fairly satisfactory performance in Physical Science for the First Quarter.

B. Difficult learning competencies in physical science

Student rated calculate the amount of substances used or produced in a chemical reaction a very difficult competency with the obtained weighted mean of 3.82 and the highest among the 25 learning competencies in Physical Science. Respondents rated the learning competency on giving evidence for and describe the formation of heavier elements during star formation and evolution moderately difficult and lowest among the items with a weighted mean of 1.94. The composite mean of 2.57 indicated that the levels of difficulty of Grade 12 students on the different learning competencies in Physical science were difficult.

C. Students attitudes toward physical science

Students consider the subject a very big challenge for them. It has a weighted mean 3.80. Students also agreed to the different attitudes toward Physical Science manifested in the composite mean of 3.01.

5. Conclusions

Based from the results of the study, the following conclusions are hereby made:

1. The Grade 12 students have fairly satisfactory performance in Physical Science.
2. The learning competencies in Physical Science are difficult for Grade 12 students.
3. The students agreed to the different attitudes toward Physical Science that could affect their performance in the subject.

6. Recommendations

From the foregoing conclusions, the following are hereby recommended:

1. Innovative and latest Strategic Intervention Materials (SIM) may be further explored and utilized in teaching to enhance students' performance in Physical science.
2. Determining the attitude of students toward the subject should also take into consideration as a factor of students' performance.
3. Future researchers may conduct studies similar or related to this current study and they may use the findings of this study for reference.

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