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LEAST MASTERED COMPETENCIES OF GRADE 8 SCIENCE LEARNERS: BASIS FOR STRATEGIC INTERVENTION MATERIALS (SIM)

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ABSTRACT

The descriptive-survey study aimed to determine the least mastered competencies of grade 8 science learners as basis for Strategic Intervention Materials (SIM). The respondents of the study were the 208 grade 8 learners of Tigbauan National High School. The data needed for this study were gathered using standardized instrument validated by expert. The results of the study revealed that the least mastered competencies of grade 8 science learners are three least learning competencies in the 2nd quarter namely to explain how landmasses and bodies of water affect typhoons, to explain the regular occurrence of meteor showers, and to predict the appearance of comets based on recorded data of previous appearances. The finding also revealed a significant difference in general average and section while there was no significant difference in family structure. The three least mastered competencies were the basis for the strategic intervention materials.

Keywords: *Least Mastered Competencies, Strategic Intervention Materials, Science Learners*

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INTRODUCTION

In response to the pandemic COVID-19, the Philippine education sector developed distance learning options to ensure learning continuity. Due to challenges with remote learning, such as unequal access to resources, pupils may do poorly and fall further behind their more disadvantaged peers. Prior to the epidemic, the Philippines' dismal results on previous regional and international learning assessments raised questions about the quality of basic education. When students go to typical classroom settings, DepEd is searching for innovative solutions to address problems in education (Yang, 2021).

The World Bank Group claims that the shutting of schools during the preceding two years had a detrimental long-term impact on pupils' capacity to study. In light of these challenges, the research suggests that educators keep an eye on and assess students' learning because doing so is crucial to implementing learning recovery programs. This may include one-on-one tutoring sessions and timely evaluations of each student's academic preparedness. Learning gaps between students are likely to vary, therefore teachers need to be ready for both lower and higher degrees of learning inequality in their classes.

The 2019 coronavirus disease (COVID-19) is driving a shift in training methods away from traditional in-person instruction and toward cutting-edge methods used on online platforms. As public health measures to lower the danger of virus transmission are demanded by national governments, educational institutions are finding it difficult to comply with the new criteria. In

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light of the current situation, educators are working out how to adapt. Outdated protocols need to be revisited and reassessed in a pandemic to accommodate a worldwide population. In this uncertain time, changes and challenges can be transformed into chances that lead to high-quality education (Landicho, 2021).

In the context of Philippine education, Strategic Intervention Materials or SIMs, are educational materials designed to reinforce ideas or topics that students are believed to have the least understanding of. Comprising as its core components are the Guide Card, Activity Card, Assessment Card, Enrichment Card, Answer Card, and Reference Card. SIM aims to stimulate students' curiosity, teach them science concepts and abilities, and help them use those abilities and expertise in practical circumstances. SIM is seen as a beneficial strategic teaching tool that helps teachers meet goals related to the teachings that are least learned. SIM learning techniques are instructional aids that support students' comprehension of material and facilitate their effective and efficient problem-solving (Bonitez, 2021).

Science courses follow a spiral curriculum in which students must first master each learning competency in order to go on to the next level. A teacher must intervene in the classroom, particularly in the science topic, in order to close the learners' learning gaps.

Using the above information, the researcher would pursued to determine the least mastered learning competencies of grade 8 science learners. The study served as basis for

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strategic intervention materials that may help enhance the mastery of the grade 8 students on Science 8.

MATERIALS AND METHODS

Research Methodology

In the study, a descriptive research method was employed. This approach is sometimes referred to as statistical research explains information and traits about the population or the phenomenon under investigation, Alberto et al. (2011).

The gathered data determined the least mastered competencies of grade 8 science learners of Tigabuan National High School, which served as basis for strategic intervention materials.

Research Design

The study employed a descriptive-quantitative research approach. Sharma (2017) states that this kind of the questions are used as a research technique in descriptive research. For gathering data. In general, a questionnaire is typically a pencil and paper tool with different kinds of questions were posed by the researcher to the respondents and it was a standardize examination coming from Department of Education.

The researcher considered this design appropriate to

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this research because its main purpose is to determine the least mastered competencies of grade 8 learners as basis for creation of strategic intervention materials.

Respondents of the study

The respondents of the study were the randomly chosen Grade 8 learners of Tigbauan National High School for the school year 2022 – 2023. This was taken from 12 different sections namely SPA, SPS, SPJ, Narra, Acacia, Coconut, Gemelina, Duhat, Lauan, Molave, Pinetree, and Mahogany. Using the Slovins' formula, the researcher identified 208 grade 8 students as the respondents out of the total population of 433.

The data are shown in Table 1.

Table 1

Distribution of Respondents Classified According to Section

Section	Population	Sample size	Percentage
SPS	30	15	7.00
SPA	46	22	10.00
SPJ	14	7	3.00
Narra	41	20	9.00
Acacia	38	18	9.00
Duhat	37	18	9.00
Gemelina	38	18	9.00
Lauan	38	18	9.00
Molave	38	18	9.00
Pinetree	38	18	9.00
Mahogany	37	18	9.00
Coconut	38	18	8.00
TOTAL	433	208	100.00

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Sampling Design

Using Sloven's formula for random sampling, the researcher selected 208 learners in grade 8 who were most available to them as respondents out of the total of 433 learners. This is an easy and low-cost method of collecting initial data (McCombes, 2022).

Research Instrument

To gather the needed data, the researcher was used questionnaire which was divided into two parts. Part I, included the name of each respondent (optional) learners' personal profile such as general average in science 7, section, and family. Part II, was a standardized test coming from the Department of Education, Division of Iloilo, which is composed of 50 multiple choice items taken from the science learning competency of Grade 8 (2nd grading period).

Validity of the Research Instrument

The researcher-constructed instrument was subject to face-and-content validation. The researcher submitted the initial draft of the test to the thesis adviser for review and for face-and-content validation. The validity of the research instruments measures the accuracy of the method used and what it is meant to measure in the study (Middleton, 2022). The researcher – made instruments was checked by experts at the same the

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use of item analysis method was employed to check the validity of the fifty (50) item multiple choice questions before using it in the study.

Data Gathering Procedures

Permission to conduct the study was asked from various corresponding offices that were involved in the conduct of the study such as University of Iloilo-PHINMA, schools, and school heads of Tigbauan National High School.

Upon approval, selected learners of Tigbauan National High School were the respondents. They were oriented on the purpose of the study.

The research instrument was utilized and was properly validated and tested for validity was personally administered to the respondent by the researcher.

During the course of the test, the researcher asked the advisers of the twelve (12) sections of Tigbauan National High School for permission. Then the researcher randomly selected respondents for every sections.

After the responses were gathered, participants were assured that their responses were treated with confidentiality. Then the data gathered were solved, analyzed, and interpreted.

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Data Analyses

The data gathered were analyzed using appropriate statistical tools. Both descriptive and inferential statistics were employed in the study.

For descriptive statistics, the researcher used mean, and frequency count.

For inferential statistics, independent t-test and ANOVA were used. All statistical computations used the SPSS software.

Statistical Tools

The following statistical tools were used in the study.

Mean. This was used to determine the average score of of grade 8 in the science 8 2nd quarter examination. The total score was divided by the number of learners who took the test.

Frequency count. Frequency count was used to determine the least mastered competencies of grade 8. It measured the number of times the learners got low scores in a certain competency.

t-test. This was to determine whether there is a statistically significant difference between the means in two unrelated groups and whether there is a significant difference in the least-mastered competences when categorized based on family structure, these methods were used.

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Analysis of variance (ANOVA). This was conducted to see if there was a statistically significant difference in the averages of three separate, unrelated groups and if there was a statistically significant difference in the least learned competencies when categorized by general average in science 7 and section.

RESULTS AND DISCUSSIONS

Summary

The study main goal was to find out the least mastered competencies of grade 8 science learners of Tigbauan National High School for the School Year 2022-2023 as the basis for Strategic Intervention Material (SIM).

The descriptive questionnaire research design was used in the study. The 208 respondents of this study were taken from the twelve sections of Grade 8 learners. The learners were taken as a whole and classified according to general average in Science 7, section, and family structure.

The gathered data for Science 8 quarterly examination were obtained through standardized exam based also on science learning competency of Grade 8 2nd grading period to find out what strategic intervention material should be prepared.

The data gathered were encoded, organized, and analyzed using the SPSS (Statistical Package for Social Sciences) software. For descriptive statistics, mean and frequency count were used.

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For inferential statistics, t-test and Analysis of variance (ANOVA) were used.

The study revealed the following findings:

When categorized according to general average in science 7 groups according to 80-84, 85-89, and 90 to 100, is to explain and describe the regular occurrence of meteor showers this are the least mastered learned competencies for this variables. And it is also the least mastered competency for the majority of grade 8 learners. These include explaining how land masses and bodies of water affect typhoons, explaining how typhoons develop, and explaining how movements along faults generate earthquakes using models or illustrations. When classified according to general average in science 7 groups according to 80-84, 85-89, and 90 to 100 is to explain meteor showers occur on a regular basis this are the least mastered learned competencies for this variables.

When classified according to section there are 12.

Section SPA, SPS, Narra, Duhat, and Gemelina has the same least mastered competency which is to explain and describe how typhoons are impacted by landmasses and bodies of water. The section Molave and Acacia have the same least mastered competencies which is to compare and contrast comets, meteors, and asteroid. The Sections Lauan and Coconut has the same least mastered which is to explain the regular occurrence of meteor showers. For Section Pinetree, the result is to predict the appearance of comets based on recorded data of previous appearances.

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For Mahogany it is to use models or illustrations, explain how movements along faults generate earthquakes.

Also when classified according to family structure, intact and dispersed, both have the same least mastered learning competency which is explain how landmasses and bodies of water affect typhoons.

There was significant difference with the general average and section on the least mastered competencies of grade 8 learners in science 2nd quarter test.

There was no significant difference with the family structure on learners' least mastered competencies for the science 2nd quarter test.

Among all the competencies to explain how land masses and bodies of water affect typhoons (S8ES-IIe20) was the least learned learning competency.

CONCLUSIONS

Based on the findings of the study, the following conclusions were drawn:

Explaining how land masses and bodies of water affect typhoons, explaining the regular occurrence of meteor showers, forecasting the appearance of comets using data from previous appearances, explaining how typhoons develop, and explaining how movements along faults generate earthquakes using models or illustrations were the least mastered competencies of grade 8 learners for the second quarter.

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Therefore, there was a need for intervention in order to provide learners an opportunity to catch up on their studies, and further prepare them for their next level.

RECOMMENDATIONS

The following suggestions are made in accordance with the study's results and conclusions:

The learners can make use of the materials for strategic intervention to develop the abilities required for their level or grade.

The science teachers may adopt the use of strategic intervention materials to enhance the skills of learners in science so that they will able to meet the expected competencies essential to their transition.

The head of the science department may include the orientation of instructors regarding the advantages of the strategic intervention materials for both themselves and the students. intervention materials not only for the learners but also for them.

The School head may evaluate the effectiveness of the materials after its implementation to check if it increases the level of mastery of the students in science.

Parents may be encouraged to be more open to help their children so that they will be able to help the teacher in facilitating the learning of their children especially in mastering scientific skills in science.

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Recommended similar study may be administering in the grade 8 level to validate the result of least mastered competencies of grade 8 learners.

Similar studies involving the strategic intervention materials are strongly recommended to validate the findings of this study.

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