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LEARNERS' NUMERICAL LITERACY SKILLS IN A FARM SCHOOL: BASES FOR REMEDIAL PROGRAM IN MATHEMATICS

EDALYN L. DE ASIS
TEACHER I
Jayobo Farm School
edalyn06@gmail.com

ABSTRACT

This descriptive study determined the learners' numerical literacy skills in a farm school as bases for remedial program in Mathematics. It was found out that the level of learners' numerical literacy skills in terms of addition, subtraction, multiplication, and division were nearly proficient when taken as a whole and when classified according to sex, parent's highest educational attainment, and grade level. There was a significant difference in terms of addition, subtraction, multiplication, and division of integers when classified according to sex, grade level, and parents' highest educational attainment but no significant difference in terms of division of integers when classified according to grade level. Learners were not good in adding negative and positive integers, subtracting negative from positive and negative from negative integers. Also, learners were not good in multiplying negative by negative and positive by negative integers as well as in dividing negative by negative, zero by negative, two negatives by single digit, and positive by a negative single digit integer.

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Keywords: *Learners, Numerical Literacy, Farm School, Remedial Program in Mathematics*

INTRODUCTION

One indicator of a great nation is its level of literacy. That is why, mastery in all four domains is necessary for efficient interaction and understanding of how the world works.

In order to compete in the global marketplace, a country with a high literacy rate must demonstrate the capacity for teamwork as well as critical, creative, and communicative thought (Novitassari & Narimo, 2020).

Jayobo Farm School is a type of school that desires to help in educating the youth in the Municipality of Lambunao and its neighboring towns and provinces. Learners then are engaged in farming activities, such as planting root crops, vegetables, fruits, home gardening (backyard gardening, poultry chicken), and raising hogs and chicken.

The importance of numerical literacy lies in the foundation for all learners to succeed at Jayobo Farm School. The school has a program where they have the sweet harvest every quarter. Each council has its own area of assignment where learners plant root crops, vegetables, and fruits. The root crops will be harvested every quarter and will be sold to the people in the community. In the activity, numerical literacy is important to learners for they are required to count pieces of root crops, vegetables, and fruits as well as the amount of money they received.

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Though the school is already a Farm School, numerical literacy plays an important role in learners' daily activities in school. It helps learners understand and manage farm-related data, such as crop yields, livestock inventory, and financial records. Additionally, numeracy skills are essential in making informed decisions about resource allocation, budgeting, and implementing sustainable farming practices. Overall, a solid foundation in numeracy enhances the learners' ability to navigate practical aspects of running a farm.

Numerical literacy, which is also referred to as mathematical literacy, is the capacity of a person to recognize and comprehend the significance of Mathematics in day-to-day life, to form strongly established opinions, and to apply Mathematics in various areas which meet the needs of the individual's current and future life in order to be a profitable, kind, and reflective citizen.

According to Utami et al. (2020), numerical literacy is one's capacity to solve practical problems in many different kinds of typical situations using a variety of numbers as well as symbols that involve fundamental mathematical operations. Additionally, it is used to evaluate data presented in various visual formats and to understand and analyze findings in order to make decisions.

In early stages of the research endeavor, researcher's experiences and keen observations serve as catalysts in delving into the subject. The recognition of a recurring phenomenon could spark the curiosity, and prompt an in-depth exploration to understand underlying factors and implications.

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Thus, the study is rooted in the intersection of firsthand encounter and meticulous observations in school. While learners are engaged in farm school activities, their numerical literacy is enhanced. They learn about calculations or measurements. For example, during planting season, learners calculate the area of the field where they plant crops, determine the distance of seeds to be planted, and estimate the weight of the fertilizer to be used. They also track the expenses and income, calculate yields, and analyze data related to crop growth or livestock health. It also helps them to calculate profits or losses regarding the status of crops and livestock products.

Indeed, by developing further the learners' numerical literacy skills, learners could integrate the tasks to a practical context like budgeting for the supplies needed, planning crop rotations, and determining market prices for goods or products.

MATERIALS AND METHODS

Research Methodology

This chapter presents the research methods, research design, respondents of the study, sampling design, data gathering procedure, research instrument, data analysis and statistical tools that were used in analyzing and interpreting data in the study.

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Research Method

Descriptive method was used in the study. Descriptive method according to Fraenkel and Wallen (2007), was employed to characterize a given situation as fully and carefully as possible. The details that were gathered could determine the numerical literacy skills of learners including the least mastered skills as bases of the researcher to come up with a remedial program in Mathematics.

Research Design

The study used the descriptive survey research design. The design was appropriate because the purpose of the research was to determine the relationship that existed between specific variables or events and to find out the direction and extent of relationship between different variables of the population under the study (Fraenkel & Wallen, 2007).

According to Best and Kahn (2007), descriptive research has often been used incorrectly to describe three types of investigations that are different. Perhaps the superficial similarities have obscured the differences. Each employs the process of disciplined inquiry through the gathering and analysis of empirical data, and each shall attempt to develop knowledge. To be done competently, each requires the experience of a careful and systematic investigator. A brief explanation may serve to put each one in its proper perspective. Research methodology, which focuses on the current events in terms of the circumstances, customs, beliefs, procedures, connections, or patterns, generally, is termed as the descriptive survey study.

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Participants of the Study

The respondents of the study were the 186 junior high school learners who were taken randomly from the 349 total population of Grade 7, 8, and 9 learners who were enrolled at Jayobo Farm School, Lambunao West Cluster 1, Lambunao, Iloilo during the school year 2023-2024.

Sampling Design

Two stage-random sampling design was used to obtain the desired number of respondents from Jayobo Farm School, Lambunao West Cluster 1, Lambunao, Iloilo. After the sample size was computed using the Slovin's formula, simple random sampling was employed.

Research Instrument

The Enhanced Regional Unified Numeracy Test (E-RUNT), a standardized instrument in Mathematics of the Department of Education (DepEd) Region VI, was the instrument used to gather data on the level of learners' numerical literacy skills in terms of addition, subtraction, multiplication, and division of integers.

Data Gathering Procedures

The researcher formulated the letter requests and sent those to the principal of the target school to conduct the study to the respondents. After the permission was granted, the researcher personally conducted and began giving out and administering the questionnaires to the participants. The researcher solicited the cooperation and understanding of the school head and respondents to ensure easy retrieval and gathering of the questionnaires. Compliance with

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research ethics protocol was done through the signed informed consent to insure the dignity of the respondents.

Data Analyses

The research instrument was reproduced according to the number of the respondents of the study. After the retrieval of the accomplished questionnaire, the data was organized, computed, and tabulated.

To interpret the results, the following rating scale and description of learners' numerical literacy skills were utilized:

Scale of Scores	Description
9-10	Highly Proficient
7-8.99	Proficient
5-6.99	Nearly Proficient
3-4.99	Low Proficient
1-2.99	Not Proficient

The methods used for computation, analysis, and interpretation were the computer with the software known as the Statistical Package for Social Sciences (SPSS).

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RESULTS AND DISCUSSIONS

The study was conducted to determine the learners' numerical literacy skills in a farm school as bases for remedial program in Mathematics in the District of Lambunao West Cluster I during the school year 2023- 2024.

Descriptive method and descriptive-survey research design were utilized in the study.

Respondents of the study were the 186 learners who were taken randomly from the 349 total population of Grades 7, 8, and 9 learners who were enrolled at Jayobo Farm School, District of Lambunao West Cluster 1.

A two-stage random sampling design was used to obtain the desired number of respondents from the total population.

A standardized instrument called Enhanced Regional Unified Numeracy Test (E-RUNT) of the Department of Education (DepEd) Region VI for Mathematics was used to gather data on the level of learners' numerical literacy skills in terms of addition, subtraction, multiplication, and division of integers.

The gathered data was tabulated, analyzed, and interpreted using the appropriate statistical instrument.

In the study, both descriptive and inferential statistics were employed. For descriptive statistics, the frequency count, percentage, and mean were used. For inferential statistics, t-test and ANOVA were used and set at .05 level of significance.

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The statistical computations were processed through the Statistical Package for Social Science (SPSS) Software.

Findings of the study revealed that the level of learners' numerical literacy skills in a farm school in terms of addition were found to be nearly proficient when taken as a whole and when classified according to sex, parent's highest educational attainment, and grade level but proficient for categories such as college level and Grade 8, and low proficient for Grade 7.

The level of learners' numerical literacy skills in a farm school in terms of subtraction were found to be nearly proficient when taken as a whole, sex, parent's highest educational attainment, and grade level but low proficient for Grade 7 category.

The level of learners' numerical literacy skills in a farm school in terms of multiplication were found to be nearly proficient when taken as a whole and when classified according to sex, parent's highest educational attainment, and grade level but proficient for categories such as female, college level, and Grades 8 and 9.

The level of learners' numerical literacy skills in a farm school in terms of division were found to be nearly proficient when taken as a whole and when classified according to sex, parent's highest educational attainment, and grade level but proficient for categories such as college level and Grade 9.

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There was no significant difference in the level of learners' numerical literacy skills in a farm school in terms of addition, subtraction, multiplication, and division of integers when classified according to sex.

There was significant difference in the level of learners' numerical literacy skills in a farm school in terms of addition, multiplication, and division but no significant difference in terms subtraction of integers when classified according to parent's highest educational attainment.

There was significant difference in the level of learners' numerical literacy skills in a farm school in terms of addition, subtraction, and multiplication but no significant difference in terms of division of integers when classified according to grade level.

The least mastered skill in terms of addition among the Grades 7, 8, and 9 learners was the addition of a negative and a positive single digit number.

The least mastered skill in terms of subtraction among the Grades 7 and 8 learners was subtracting a negative from positive single digit number, while subtracting negative from negative single digit integer for Grade 9.

The least mastered skill in terms of multiplication among the Grades 7 and 9 learners was multiplying negative by negative single digit integer, while multiplying positive by negative single digit integer for Grade 8.

The least mastered skill in terms of division among the Grade 7 learners was dividing negative by negative single digit number, dividing zero by negative single digit number for Grade

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8, and for Grade 9, dividing two negative single digit and integer and item number 9 which was dividing positive by a negative single digit integer.

CONCLUSION

Considering the findings and conclusions that have emerged in the study, the following recommendations are proposed:

The school must sustain its activities and strategies in improving learners' numerical literacy skills in other areas but there is a need to improve other practices towards the betterment of learners' performance in Mathematics.

Grouping of learners should be done according to their weaknesses and age should not be a basis for classifying learners in the remedial program.

Learners from other grade levels who perform better in a certain operation should be utilized in the remedial program of the school by adopting the peer or pair tutoring approach.

Stakeholders should be involved in the remedial program of the school especially parents with higher or better educational attainment.

Assessment standards and practices should be improved to identify right learners to be the clientele of the remedial program, basis for awards and recognition, and for remediation and enrichment activities.

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The ELDAB (Edalyn Liba de Asis-Buscas) Mathematical Remedial Program should be implemented to improve the learners' mathematical skills in integers and support should also be provided to effectively implement the program.

Future researchers may conduct similar or related studies using other variables and settings. Such studies may focus on other strategies that may lead to learners' better performance in Mathematics.

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