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RESEARCH ARTICLE

IMPROVING STUDENTS' PERFORMANCE IN BASIC OPERATIONS USING LOCALIZED LEARNING MATERIALS IN LIAN INSTITUTE

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ABSTRACT

This study aimed to determine the perceptions of Grade 7 students toward basic mathematical operations as a basis for developing localized learning materials at Lian Institute Inc., Lian, Batangas, during the academic year 2025–2026. Specifically, it sought to identify the respondents' profiles in terms of age and sex, assess their perceptions of basic operations in terms of cultural relevance, ecological context, and experiential application, and determine whether significant differences existed in their perceptions when grouped according to their demographic profiles.

The study employed a descriptive research design involving 100 Grade 7 students selected through purposive sampling. Data were gathered using a researcher-made questionnaire validated by experts and subjected to reliability testing. Frequency counts, percentages, weighted means, standard deviations, and statistical tests were utilized to analyze and interpret the data.

The findings revealed that the majority of respondents were 13 years old (48%) and female (64%). The respondents generally agreed that localized learning materials contributed to their understanding of basic mathematical operations, as reflected in the composite means for cultural relevance (3.28), ecological context (3.262), and experiential application (3.27). Furthermore, the study reported no significant differences in respondents' perceptions when grouped according to age and sex at the 0.05 level of significance.

The study concluded that students positively perceived the integration of culturally relevant, environmentally contextualized, and experience-based learning activities in mathematics instruction. Based on these findings, the development and utilization of localized learning materials were proposed to make basic mathematical operations more meaningful, engaging, and applicable to students' everyday experiences.

Keywords: *Basic Mathematical Operations, Localized Learning Materials, Cultural Relevance, Ecological Context, Experiential Application, Grade 7 Students*

INTRODUCTION

In the realm of mathematics education, developing a strong mastery of the four fundamental operations, addition, subtraction, multiplication, and division is a critical milestone for secondary learners. These operational skills form the foundation for more advanced mathematical concepts such as fractions, algebra, geometry, and quantitative applications. As emphasized by Diwa (2023), the four operations serve as the cornerstones of calculation, shaping not only academic success but also practical applications in everyday life. Without proficiency in these basic skills, students often struggle to progress to higher-order tasks, limiting their ability to engage meaningfully with complex problem-solving situations. However, many students encounter significant challenges in mastering these basic operations, which can hinder their overall mathematical proficiency and confidence in problem-solving.

On August 16, 2024, the Department of Education (DepEd) issued Division Memorandum No. 262, s. 2024, which directed the distribution of mathematics learning resources and manipulative materials to schools nationwide, including secondary institutions. The initiative aimed to strengthen students' mastery of the four basic operations by integrating localized learning materials that reflect the culture, environment, and daily experiences of learners. These contextualized resources incorporated familiar situations such as farming practices, small-scale trade, household budgeting, and community measurements, allowing students to connect mathematical concepts with real-life applications. Early classroom reports indicated that learners demonstrated greater engagement and comprehension when solving problems rooted in their own community contexts. While challenges remain in ensuring consistent implementation and evaluating long-term outcomes, the program underscores the potential of localized learning materials as a practical strategy to improve foundational mathematics skills and overall student performance (Department of Education [DepEd], 2024).

Furthermore, localized learning materials play a vital role in improving students' performance in basic mathematical operations. By connecting lessons to learners' cultural and environmental contexts, these resources make abstract concepts more meaningful and accessible. The Department of Education, through the MATATAG Curriculum, underscores the importance of contextualized instruction as a means of fostering deeper comprehension and sustained engagement in mathematics. This approach not only strengthens mastery of addition, subtraction, multiplication, and division but also cultivates confidence and critical thinking skills that are essential for academic success. Localized learning materials therefore serve as a strategic tool in bridging gaps in foundational mathematics, ensuring that learners develop the competence needed to meet both educational standards and real-world demands (Department of Education, 2023).

Consequently, many students continue to struggle with basic operations, particularly multiplication and division, especially when applied to word problems or real-life contexts.

Without contextualized instruction, mathematics feels detached from their daily lives, causing disinterest, frustration, and anxiety. These difficulties create cumulative learning gaps that hinder progress into advanced topics, lower academic achievement, and reduce confidence in schooling overall. Moreover, students at Lian Institute have shown persistent difficulties in mastering basic mathematical operations, particularly addition, subtraction, multiplication, and division. Although these skills are introduced early in the curriculum, many learners continue to struggle with accuracy and confidence as they advance to higher grade levels. Contributing factors include limited reinforcement of foundational concepts, reliance on abstract instruction, and reduced engagement when lessons are not connected to students' immediate contexts. These challenges reveal the need for instructional strategies that are both practical and responsive to learners' backgrounds. Motivated by this situation, the researcher seeks to investigate the effectiveness of localized learning materials as a means of strengthening operational skills, improving comprehension, and enhancing overall mathematical performance among Lian Institute students.

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LITERATURE REVIEW

This chapter presents a review of the relevant literature supporting the study. To ensure coherence, the materials are examined thematically. Additionally, the theoretical framework, conceptual framework, and simulacrum analysis are discussed to provide a comprehensive background for the review.

Improving Students' Performance in Basic Operations

Mathematics instruction becomes more effective when lessons are connected to students' cultural and ecological contexts. Bello et al. (2023) examined contextualized and localized teaching materials in the Philippines, finding that embedding lessons in cultural and ecological contexts improved student performance and originality in problem solving. This demonstrates that localized materials make mathematics more meaningful and improve performance, showing that integrating culturally relevant and localized approaches in mathematics not only enhances comprehension but also bridges abstract concepts with real-life applications.

Moreover, Domingo (2024) developed and evaluated contextualized learning materials for Grade 7 mathematics in Pasig City, showing that students exposed to

contextualized materials achieved higher comprehension and mastery of basic operations compared to those taught with traditional methods. This further supports the idea that contextualization enhances learning outcomes by bridging abstract concepts with familiar experiences, thereby strengthening foundational mathematical skills.

In the early grades, contextualization plays a vital role in building foundational numeracy skills. Sabido, Bermudo, and Tariman (2026) studied Grades 2–3 pupils in Catanduanes and found that contextualized strategies using localized and experiential tasks improved learner engagement and numeracy skills, particularly in addition and subtraction. Furthermore, their findings highlight that experiential and culturally grounded approaches not only sustain interest but also strengthen mastery of basic operations, reinforcing the effectiveness of localized learning materials in mathematics education.

Strengthening contextualization in mathematics instruction has also proven effective in the middle elementary grades. Reyes and Dizon (2023) developed contextualized math modules for Grade 4 pupils in Pampanga, and results showed significant improvement in basic operations (addition, subtraction, multiplication, division) when lessons were localized to everyday community practices. In addition, their study illustrates that embedding mathematics in familiar routines and community activities not only enhances mastery of fundamental skills but also fosters deeper connections between academic learning and real-life applications.

At the secondary level, contextualization continues to demonstrate its effectiveness in mathematics instruction. Molanda, Martirez, and Ambos (2024) implemented contextualized learning materials in Grade 7 mathematics at Central Philippine University, and results revealed that students exposed to localized materials achieved higher scores in basic operations and problem solving. Consequently, their study affirms that contextualized approaches not only strengthen computational skills but also enhance critical thinking and application, underscoring the broader impact of localized learning materials on overall

mathematical proficiency.

This chapter presents a review of the relevant literature supporting the study. To ensure coherence, the materials are examined thematically. Additionally, the theoretical framework, conceptual framework, and simulacrum analysis are discussed to provide a comprehensive background for the review.

RESEARCH QUESTIONS

1. What is the profile of the respondents in terms of:

    1.1 Age;

    1.2 Sex?

2. What are the perceptions of the respondents regarding the basic operations in terms of:

    2.1 Cultural Relevance;

    2.2 Ecological Context;

    2.3 Experiential Application?

3. Is there a significant difference in the respondents' perceptions of the basic operations when their profile is considered?

4. What localized learning materials must be proposed based on the results of the study?

METHODOLOGY

This chapter presents the research methods used in the study. It also includes methods used, the locale of the study, the respondents of the study, research instrument, construction

and validation of the instrument, data gathering procedure and statistical treatment of the data This comprehensive section is designed to provide a clear understanding of the methodologies adopted, ensuring that the study's approach, setting, participants, tools, their development and validation, data gathering strategies, and analytical procedures are thoroughly presented.

Research Design

The study employed a descriptive research design, meticulously crafted to characterize and analyze the various features of the population, circumstances, and phenomena directly related to the improvement of students' performance in basic operations. The primary objective of this research was to gather comprehensive data and insights that could serve as a robust foundation for the development of localized learning materials tailored to improve student's performance in basic operation. According to Singh (2023), descriptive research design is widely employed across diverse fields, and its primary objective is to systematically observe and document all variables and conditions influencing the phenomenon.

The data collected was quantified in order to statistically analyze the perceptions of the grade 7 students at Lian Institute to the basic operations.

Locale of the Study

Lian, a municipality in Batangas, Philippines, is known for its vibrant mix of natural beauty and cultural heritage. The area is rich in Tagalog traditions, agricultural practices, and a growing tourism sector. It is home to famous landmarks such as Matabungkay Beach, San Diego Beach, and Mount Mapurgas or Mount Tikbalang, which highlight its natural charm and tourism appeal. Religious traditions also play a central role, with Roman Catholicism deeply influencing community life. These cultural and environmental features provide the backdrop for the study, situating it within a community that values both heritage and progress.

The study was conducted at Lian Institute, located in J.P. Rizal St., Lian, Batangas

which composed of selected one hundred (100) grade 7 students. The school serves as an important educational institution in the area, reflecting the community's commitment to academic growth alongside its cultural traditions. Its location within Lian situates it within a broader educational network that supports the municipality's learners.

Respondents of the Study

In this study, one hundred (100) Grade 7 students were the respondents, consisting of thirty six (36) male and sixty four (64) female. Purposive sampling was used in this study based on the following criteria: enrolled as Grade 7 students at Lian Institute, J.P. Rizal St., Lian, Batangas, in the academic year 2025–2026.

Research Instrument

The primary instrument utilized in this study was a survey questionnaire developed by the researcher, drawing upon relevant literature. Part I dealt with the profile of the respondents. Part II questionnaire was regarding the perceptions of the respondents to the basic operations in terms of **Cultural Relevance**, **Ecological Context**, and **Experiential Application.**

Construction and Validation of the Instrument

The researcher conducted extensive reviews of related studies and existing questionnaires to provide substance and depth to the instrument. With guidance from the subject teacher, the initial draft of the questionnaire was prepared. Once the content was refined, the instrument underwent validation by three (3) experts: a Mathematics teacher, a Master Teacher, and a Mathematics Coordinator from a higher education institution.

The questionnaire was subjected to both validation and reliability testing. Expert consultation ensured its validity, while a reliability test was administered to a group of ten (10) students. To determine the internal consistency of the instrument, the researcher employed Cronbach's Alpha method, which confirmed the reliability of the questionnaire.

Ethical Considerations

This study underwent an Ethics Review by the Institutional Ethics Review Committee (IERC) at Dr. Francisco L. Calingasan Memorial Colleges Foundation Inc. It met the ethical standards established by the institution's Research Ethics Board.

The respondents' voluntary assent to participate was obtained as part of the study's ethical considerations (Appendix D). Prior to taking part in the study, each respondent will get a copy of a consent. The investigator ensured that each respondent received a thorough explanation of the consent form. The responders will also be reminded that their involvement in the study was entirely voluntary and that they are free to decline.

To protect the responders' honor and dignity, ethical standards were taken into account. With a similarity index of _____ (Appendix I), this paper is also put through similarity testing on Turnitin to make sure no parts of it have been duplicated or copied.

Data Gathering Procedures

To administer the survey questionnaire, the researcher identified the required number of respondents and collected information relevant to the research topic. A formal letter of request (Appendix A) was submitted to the principal's office, and upon approval, the questionnaires were distributed to the students. The completed questionnaires were retrieved immediately after the respondents had answered them. The data gathered were then tallied, organized, tabulated, analyzed, and interpreted using appropriate statistical techniques. All questionnaires were retrieved, representing one hundred percent (100%) of the total respondents included in this study

Statistical Treatment of Data

The following statistical treatment was used to treat the data gathered from this study.

Problem 1. Profile of the Respondents

1.1Frequency counts and Percentage. These were used to determine the profile of the respondents.

Problem 2. Perceptions of the Respondents to Basic Operations

2.1 Weighted Mean and Standard Deviation. These were used to determine the perceptions of the respondents to the basic operations, serving as a basis for localized learning materials.

Problem 3. Significant Difference in the perception of the respondents to the basic operations when profile is considered.

3.1 T- test/F- test. This was used to determine the significant difference in the perception of the respondents to the basic operations when profile is considered in terms of age, and sex.

FINDINGS

This chapter presents the important findings, statistical analyses and interpretation of the results.

1. Profile of the Respondents

Table 1 reveals that five (5) or 5 percent of the respondents are at the age of 11, forty six (46) or 46 percent of respondents are at the age of 12, forty eight (48) or 48 percent of respondents are at the age of 13 and one (1) or 1 percent of respondents are at the age of 14 and above. This proves that that majority of the respondents are at the age of 13.

Age plays a significant role in shaping mathematics performance, especially in

the development of basic operations and numeracy skills. Adam (2024) examined the influence of early math and numeracy abilities among elementary pupils, revealing that younger learners who acquired these skills early demonstrated stronger mathematical performance later on. This highlights that age affects readiness for basic operations, with early exposure contributing to improved outcomes

Table 1

Age of the Respondents

Age	Frequency	Percentage
11 years old	5	5%
12 years old	46	46%
13 years old	48	48%
14 years old and above	1	1%
Total	**100**	**100%**

Table 2 shown that thirty six (36) or 36 percent of the respondent are male, sixty four (64) respondents or 64 percent are female. This indicates that majority of the respondents are female.

In line with this, Garcia (2025) investigated junior high students at Balibago Integrated High School and found no significant differences in mathematics performance between male and female learners. However, the use of localized and contextualized teaching strategies improved outcomes for both groups. These findings highlight that sex differences in performance can be addressed through localized materials, demonstrating the equalizing effect of contextualized instruction in mathematics classrooms.

Table 2

Sex of the Respondents

Sex	Students	Percentage (%)
Male	36	36%
Female	64	64%
Total	100	100%

2. Perceptions of the Respondents to Basic Operations

Table 3 shows the perceptions of the respondents to basic operation in terms of cultural relevance. This reveals with a weighted means of 3.31 (SD=0.61) Localized learning materials make math lessons more meaningful by connecting to my culture and community. 3.20 (SD=0.69) I understand basic operations better when examples reflect local practices (e.g., market transactions, community activities). 3.30 (SD=0.57) Localized materials motivate me to participate actively in math lessons 3.26 (SD=0.69) Using cultural examples increases my confidence in solving basic operations. and 3.33 (SD=0.68) Culturally relevant lessons help me connect math concepts to real-life situations. .These prove that the respondents Agree that cultural relevance helps in understanding basic operations with the composite mean of 3.28 (SD=0.649).

Similarly, mathematics learning becomes most effective when it connects with learners' cultural backgrounds and lived experiences. Dalayap and Buyco (2025) emphasized that strengthening cultural relevance in mathematics education can enhance student motivation, engagement, and overall academic performance. By embedding cultural context, instruction bridges the gap between abstract concepts

and real-life applications, making mathematics more meaningful and accessible to students.

Table 3

Perceptions of the Respondents to Basic Operation in terms of Cultural Relevance.

Items	WM	VI	SD
1. Localized learning materials make math lessons more meaningful by connecting to my culture and community.	3.31	Agree	0.61
2. I understand basic operations better when examples reflect local practices (e.g., market transactions, community activities)	3.20	Agree	0.69
3.Localized materials motivate me to participate actively in math lessons	3.30	Agree	0.57
4. Using cultural examples increases my confidence in solving basic operations	3.26	Agree	0.69
5. Culturally relevant lessons help me connect math concepts to real-life situations	3.33	Agree	0.68
COMPOSITE MEAN	**3.28**	**Agree**	**0.649**

Legend: WM=Weighted Mean, VI=Verbal Interpretation, SD=Standard Deviation:1.00-1.49 Strongly DisAgree, 1.50-2.49 DisAgree, 2.50-3.49 Agree, 3.50- 4.00 Strongly Agree

Table 4 displays that the perception of the respondents to basic operation ecological context resulted to agree.

The students obtained a weighted mean of 3.22 (SD=0.71) I find basic operations easier when problems are related to ecological tasks (e.g., farming, fishing, market activities). 3.37 (SD=0.56) Contextualized materials based on community life improve my problem-solving skills. 3.25(SD=0.61) Lessons that reflect ecological realities sustain my interest in mathematics. 3.14(SD=0.72) Ecological contextualization makes abstract math concepts more practical and relatable. 3.33 (SD=0.69) Embedding ecological contexts in math instruction strengthens my performance in basic operations. The respondents Agree that ecological context contributes on understanding basic operations in mathematics with a composite mean of 3.262 (SD=0.659).

In line with this, Landas and Alova (2022) investigated the effect of localized lesson plans on pupils' interest and performance in mathematics. They found that contextualizing math problems into real-life ecological tasks such as farming and market transactions improved both engagement and achievement. Moreover, their study demonstrates that embedding mathematics in everyday ecological practices sustains learner motivation while enhancing mastery of basic operations.

Table 4

Perception of the Respondents to Basic Operation in terms of Ecological Context

ITEMS	WM	VI	SD
1. I find basic operations easier when problems are related to ecological tasks (e.g., farming, fishing, market activities)	3.22	Agree	0.71
2. Contextualized materials based on community life improve my problem-solving skills.	3.37	Agree	0.56

3. Lessons that reflect ecological realities sustain my interest in mathematics.	3.25	Agree	0.61
4. Ecological contextualization makes abstract math concepts more practical and relatable.	3.14	Agree	0.72
5. Embedding ecological contexts in math instruction strengthens my performance in basic operations.	3.33	Agree	0.69
Total	**3.262**	**Agree**	**0.659**

Legend: WM=Weighted Mean, VI=Verbal Interpretation, SD=Standard Deviation:1.00-1.49 Strongly DisAgree, 1.50-2.49 DisAgree, 2.50-3.49 Agree, 3.50- 4.00 Strongly Agree

Table 5 shows that respondents Agreed that basic operations in math is more comprehendible when taught with experiential applications. This reveals with the weighted mean of 3.42 (SD=0.65) I learn basic operations better when lessons involve hands-on, real-life tasks. 3.26 (SD=0.70) Experiential tasks (e.g., budgeting, farming problems) make math lessons more engaging. 3.23 (SD=0.65) Active participation in experiential activities improves my performance in basic operations. 3.14 (SD=0.75) Experiential application helps me connect abstract math concepts to everyday life, and 3.30 (SD=0.70) Experiential learning fosters deeper understanding and strengthens my foundational math skills. The respondents Agreed that basic operations in math is more comprehendible when taught with experiential applications with a composite mean of 3.27 (SD=0.689). This indicates that experiential applications significantly enhance students' comprehension of basic operations in mathematics by making lessons more engaging, meaningful, and connected to real-life contexts.

Similarly, Sabido, Bermudo, and Tariman (2026) examined contextualized strategies in Grades 2–3 mathematics. Hands-on, real-life tasks and localized culture integration improved learner engagement and numeracy skills. Furthermore, their study demonstrates that experiential application of localized strategies in math instruction strengthens

foundational skills while fostering active participation among young learners.

The results affirm that experiential and contextualized strategies make basic operations in mathematics more comprehensible and engaging. By linking lessons to real-life tasks and local culture, instruction strengthens foundational skills and promotes active learner participation.

Table 5

Perception of the Respondents to the Arithmetic Operations with Integers in terms of Mathematical Connections

ITEMS	WM	IV	SD
1. I learn basic operations better when lessons involve hands-on, real-life tasks.	3.42	Agree	0.65
2. I learn basic operations better when lessons involve hands-on, real-life tasks.	3.26	Agree	0.70
3. Active participation in experiential activities improves my performance in basic operations	3.23	Agree	0.65
4. Experiential application helps me connect abstract math concepts to everyday life	3.14	Agree	0.75
5. Experiential learning fosters deeper understanding and strengthens my	3.30	Agree	0.70

foundational math skills.

COMPOSITE MEAN	**3.27**	**Agree**	**0.689**

Legend: WM=Weighted Mean, VI=Verbal Interpretation, SD=Standard Deviation:1.00-1.49 Strongly DisAgree, 1.50-2.49 DisAgree, 2.50-3.49 Agree, 3.50- 4.00 Strongly Agree

3. Significant Difference In The Perception Of The Respondents To The Basic Operations When Profile Is Considered

Table 6 shows the significant difference in the perception of the respondents to the basic operations when profile is considered**.** The computed *p* value of Age (p=0.44), (p=0.36) and (p=0.27) are greater than 0.05 level of significance, thus the null hypothesis was failed to reject. However, the computed *p* value for Sex (p=0.07), (p=6.24) and (p=1.33) are greater than 0.05 level of significance, thus the null hypothesis was failed to reject. Therefore, it means that there is no significant difference in the perception of the respondents to the basic operations when profile is considered. This deduces that the respondents have the same perceptions on basic operations on their age and sex.

In contrast, Gutierrez and Ramos (2022) analyzed Grade 3 pupils' numeracy test results in Laguna. They found significant differences in basic operations mastery between younger and older pupils, as well as between male and female learners. Moreover, their study demonstrates that both age and sex are important determinants of performance, underscoring the need to tailor instruction to diverse learner profiles.

Table 6

Significant difference in the Perception of the Respondents to the Arithmetic Operation with Integers when profile is considered.

Variables	Age	Sex
Real-life Application		
P value	0.44	0.07
Remarks	Not Significant	Not Significant
Decision	Failed to reject ho	Failed to reject ho
Cultural Relevence		
P value	0.36	6.24
Remarks	Not Significant	Not Significant
Decision	Failed to reject ho	Failed to reject ho
Ecological Context		
P value	0.27	1.33
Remarks	Not Significant	Not Significant
Decision Experiential Application	Failed to reject ho	Failed to reject ho

Significant at p <0.05

CONCLUSIONS

1.Profile of the Respondents

1.1 Age. There were five (5) or 5 percent of the respondents are at the age of 11, forty six (46) or 46 percent of respondents are at the age of 12, forty eight (48) or 48 percent of respondents are at the age of 13 and one (1) or 1 percent of respondents are at the age of 14 and above.

1.2 Sex. There were thirty six (36) or 36 percent of the respondent are male, sixty four (64) respondents or 64 percent are female.

2. Perceptions of the Respondents to Basic Operations

2.1 Cultural Relevance. The respondents agreed that Culturally relevant lessons help me connect math concepts to real-life situations with the weighted mean of 3.33 (SD=0.68). On the other hand, the respondents agreed that they I understand basic operations better when examples reflect local practices (e.g., market transactions, community activities) with the weighted mean of 3.20 (SD=0.69). With the composite mean of 3.28 (SD=0.649) the respondents Agreed that cultural relevance helps in understanding basic operations in mathematics.

2.2 Ecological Context. The respondents agreed that contextualized materials based on community life improve my problem-solving skills with the weighted mean 3.37 (SD=0.556). On the other hand, the respondents agreed that Ecological contextualization makes abstract math concepts more practical and relatable with the weighted mean of 3.14 (SD=0.72). With a composite mean of 3.262 (SD=0.659) respondents agreed that ecological context contributes on understanding basic operations in mathematics

2.3 Experiential Application. The respondents agreed that they learn basic operations better when lessons involve hands-on, real-life tasks with the weighted mean of 3.42 (SD=0.65). On the other hand the students agreed that experiential application helps me connect abstract math concepts to everyday life with the weighted mean of 3.14 (SD=0.75). With a composite mean of 3.27 (SD=0.689) the respondents agreed that basic operations in math is more comprehendible when taught with experiential applications.

3.Significant Difference Perception of the Respondents to the Arithmetic Operations with integers when profile is considered.

There is no significant difference in the perception of the respondents to the basic operations when profile is considered. The computed *p*-value of 0.44, 0.36, 0.27 for age; and for sex; 0.07, 6.24, 1.33 in the variables such as cultural relevance, ecological context, and experiential application are all lesser than the significant value at 0.05 level of significance.

Therefore, the null hypothesis is failed to reject.

4. **Localized Learning Materials**

The Localized Learning Materials was crafted by the researcher based on the results of the study.

CONCLUSIONS

Based on the findings, the following conclusions are drawn.

1. Most of the respondents are on the age of 13, and majority of the respondents are female, 64%.
2. The respondents agreed that cultural relevance enhances their understanding of basic operations in mathematics, that ecological context further contributes to this comprehension, and that experiential applications make these operations more accessible. Taken together, these findings emphasize that integrating culture, environment, and hands-on experiences into instruction strengthens learners' grasp of fundamental mathematical concepts and promotes deeper engagement.
3. There is no significant difference in the perception of the respondents to the basic operations when profile is considered.
4. The Localized Learning Materials are designed by the researcher based on the results of the study.

RECOMMENDATIONS

Based on the findings and conclusions of the study, the following recommendations are hereby suggested.

1. Teachers should place greater emphasis on basic operations in mathematics by incorporating relatable examples and activities that suit different ages and interests. They should also ensure inclusivity by using neutral scenarios that engage all learners, regardless of gender

2. Teachers should integrate cultural relevance, ecological context, and experiential applications into mathematics instruction, ensuring that lessons connect abstract operations to real-life situations, strengthen foundational skills, and foster deeper learner engagement.

3. Since there is no significant difference in the perception of the respondents to the basic operations when profile is considered, teachers should apply uniform, inclusive strategies in teaching basic operations, ensuring that lessons are accessible and effective for all learners regardless of age or gender, while consistently connecting concepts to real-life situations to promote equal engagement and comprehension.

4. Implementation of localized learning materials of the researcher is highly recommended to improve students' performance in basic operations in Lian Instutue .

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