

Performance in Mathematics of Grade 4 Learners: Basis for The Development of Worksheets

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ABSTRACT

This study assessed the academic performance of Grade 4 learners in Mathematics at Sta. Ines Integrated School, Division of Mabalacat City, during the School Year 2024–2025. Specifically, it determined the learners' level of academic performance based on their final Mathematics grades, identified their least-mastered competencies, developed instructional worksheets to address these weaknesses, and evaluated the acceptability of the worksheets. A quantitative descriptive research design was employed involving 120 Grade 4 learners, while Mathematics teachers served as evaluators of the developed instructional materials. Data were analyzed using frequency, percentage, and weighted mean. Results revealed that the majority of learners (34.17%) obtained fairly satisfactory performance, while only 20.83% achieved outstanding ratings. Learners demonstrated considerable difficulty in division of multi-digit numbers, solving multi-step word problems, multiplication of whole numbers, mental computation, place value, rounding, least common multiple, order of operations, and multiplication by powers of ten. Worksheets were developed based on these identified learning gaps and were evaluated by Mathematics teachers as **very acceptable** in terms of content (WM = 3.59), organization and sequence (WM = 3.50), and other instructional characteristics (WM = 3.57). The findings suggest that competency-based instructional worksheets can serve as effective supplementary learning materials to improve learners' mathematical performance.

Keywords: Mathematics performance, Grade 4 learners, worksheets, instructional materials, elementary education

INTRODUCTION

Mathematics is a fundamental component of elementary education because it develops learners' logical reasoning, problem-solving skills, and numerical literacy necessary for lifelong learning. However, many elementary learners continue to experience difficulties in mastering essential mathematical concepts, resulting in below-expected academic performance.

Instructional materials, particularly worksheets, have been recognized as effective learning tools that reinforce classroom instruction by providing structured practice and immediate feedback. Developing worksheets based on learners' identified weaknesses enables teachers to provide targeted interventions that address competency gaps.

This study sought to assess the Mathematics performance of Grade 4 learners and develop competency-based worksheets that respond to learners' least-mastered skills.

Specifically, the study aimed to:

1. determine the academic performance of Grade 4 learners in Mathematics;
2. identify the learners' least-mastered mathematical competencies;
3. develop instructional worksheets based on the identified weaknesses; and
4. evaluate the acceptability of the developed worksheets.

METHODOLOGY

This study employed a **quantitative descriptive research design**.

The study was conducted at **Sta. Ines Integrated School, Division of Mabalacat City**, during the School Year **2024–2025**.

The participants consisted of **120 Grade 4 learners** whose Mathematics performance served as the basis for identifying competency gaps. Mathematics teachers participated in evaluating the developed worksheets.

Learners' final grades in Mathematics were analyzed to determine academic performance. Teachers likewise identified the competencies where learners demonstrated the greatest learning difficulties. Based on these findings, researcher-developed worksheets were prepared and evaluated by Mathematics teachers.

The collected data were analyzed using:

- Frequency
- Percentage
- Weighted Mean

RESULTS AND DISCUSSION

Academic Performance of Grade 4 Learners

The academic performance of the learners revealed that only a small proportion demonstrated outstanding achievement, while the largest percentage obtained fairly satisfactory ratings.

Academic Performance	Frequency	Percentage
Outstanding (90–100)	25	20.83%
Very Satisfactory (85–89)	22	18.33%
Satisfactory (80–84)	29	24.17%
Fairly Satisfactory (75–79)	41	34.17%
Did Not Meet Expectations (<75)	3	2.50%

The findings indicate that although most learners passed the subject, many still exhibited insufficient mastery of essential mathematical competencies, highlighting the need for supplementary instructional interventions.

Least-Mastered Mathematics Competencies

The analysis identified several competencies where learners encountered considerable difficulty.

The ten least-mastered competencies included:

- Dividing 3- to 4-digit numbers by 1- to 2-digit numbers (72.17%)
- Solving multi-step problems involving multiplication and addition/subtraction (71.22%)
- Solving multiplication word problems (70.57%)
- Mental multiplication of two-digit by one-digit numbers (66.50%)
- Writing whole numbers up to 100,000 (62.56%)
- Rounding numbers to the nearest thousand and ten thousand (60.00%)
- Visualizing numbers up to 100,000 (59.18%)
- Determining the Least Common Multiple (58.22%)
- Applying the order of operations in solving word problems (57.68%)
- Multiplying by powers of ten (52.32%)

These findings suggest that learners experience greater difficulty with higher-order mathematical thinking, computational fluency, and problem-solving than with basic arithmetic operations.

Development of Mathematics Worksheets

Based on the identified competency gaps, instructional worksheets were developed to provide focused exercises that reinforce learners' understanding and mastery of difficult mathematical concepts.

The worksheets were designed to align with the Most Essential Learning Competencies (MELCs) and progressively develop learners' computational and problem-solving skills.

Evaluation of the Developed Worksheets

The developed worksheets were evaluated by Mathematics teachers.

Criteria	Weighted Mean	Interpretation
Content	3.59	Very Acceptable
Organization and Sequence	3.50	Very Acceptable
Other Characteristics	3.57	Very Acceptable
Overall	3.59	Very Acceptable

The evaluation indicates that the worksheets possess appropriate instructional content, logical sequencing of activities, and learner-friendly characteristics suitable for classroom implementation.

CONCLUSION

Most Grade 4 learners demonstrated only a fairly satisfactory level of Mathematics performance, indicating incomplete mastery of several

essential competencies. The most significant learning difficulties were observed in multi-digit division, multi-step problem solving, multiplication, place value, rounding, and order of operations. The competency-based worksheets developed in this study effectively addressed these learning gaps and were evaluated as very acceptable by Mathematics teachers. These findings support the use of teacher-developed instructional materials as effective supplementary resources for improving learners' mathematical achievement.

RECOMMENDATIONS

1. The developed worksheets should be adopted and utilized as supplementary instructional materials in Grade 4 Mathematics.
2. Teachers should provide regular remediation activities focusing on learners' least-mastered competencies.
3. Parents and teachers should maintain continuous communication to monitor learners' academic progress.
4. School administrators should provide technical and financial support for the reproduction and implementation of teacher-developed instructional materials.
5. Future researchers should validate the effectiveness of the worksheets through experimental or quasi-experimental studies involving larger populations.