



Mathematical Essential Learning Competencies Achieved by Grade 6 Completers of Claver Central Elementary School District of Claver

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Abstract

This study assessed the extent to which Grade 6 completers of Claver Central Elementary School demonstrated essential mathematical learning competencies as defined in the K to 12 Mathematics Curriculum Framework. Using a quantitative descriptive-correlational design, the research evaluated the proficiency of learners in Numbers and Number Sense, Measurement, Geometry, Patterns and Algebra, and Statistics and Probability. Respondents included both pupils and their teachers, with data gathered through validated questionnaires. Statistical tools such as mean, standard deviation, t-test, ANOVA, and Pearson correlation were employed for analysis.

Findings revealed that the Grade 6 completers achieved a moderate level of proficiency across the five mathematical domains. Significant differences were observed when competencies were grouped according to age, sex, and general weighted average in Mathematics. Moreover, discrepancies were identified between teachers' and pupils' assessments of competencies, while a significant correlation existed between learners' general weighted average and their self-assessed mathematical proficiency.

The study highlights the need for sustained efforts in improving mathematics instruction, including enhanced teacher professional development, curriculum refinement, and increased parental involvement. These findings provide useful implications for school administrators and policy makers in strengthening mathematics education outcomes.

Keywords: Mathematics Education; Essential Learning Competencies; Grade 6 Learners; Philippines; Student Performance

Introduction

Mathematics serves as the foundation of scientific and technological knowledge, contributing directly to national development and economic growth (Tomlinson, 2014). It is a central component of both elementary and secondary education, equipping students with critical thinking, problem-solving, communication, and decision-making skills necessary for personal and societal progress (Ariyanti & Santoso, 2020). Despite its recognized importance, mathematics education in the Philippines continues to face persistent challenges.

Global benchmarks underscore this problem. Results from the Programme for International Student Assessment (PISA) 2018 revealed that Filipino students scored an average of 353 in mathematical literacy, significantly below the Organisation for Economic Co-operation and Development (OECD) average of 489 (OECD, 2019). Similarly, in the 2019 Trends in International Mathematics and Science Study (TIMSS), the Philippines ranked among the lowest, with a mean score of 297 in mathematics (Mullis et al., 2020). These results point to systemic issues in mathematics instruction and highlight the urgency of strengthening foundational competencies in the subject.

The K to 12 Basic Education Curriculum in the Philippines emphasizes Mathematical Essential Learning Competencies (MELCs), which are expected to be achieved by learners at the end of each grade level. These competencies include Numbers and Number Sense, Measurement, Geometry, Patterns and Algebra, and Statistics and Probability. However, research focusing specifically on Grade 6 completers—the transition point from elementary to secondary education—is limited. This stage is crucial, as mastery of competencies determines readiness for more abstract mathematical concepts in high school (Centillas & Larisma, 2016; Larisma, Centillas, Lumbay, & Pajaron, 2017).

Claver Central Elementary School, situated in the District of Claver, serves as the study site for this research. Given its role in preparing learners for secondary education, assessing the mathematical competencies of its Grade 6 completers provides essential insights into strengths, weaknesses, and areas requiring intervention. The findings are expected to inform curriculum development, teaching practices, and targeted support for learners.

Aim of the Study

The primary aim of this study was to assess the extent to which Grade 6 completers of Claver Central Elementary School achieved the essential mathematical learning competencies outlined in the K to 12 Mathematics Curriculum. It further sought to identify areas of strength and weakness to guide instructional practices, curricular adjustments, and policy interventions.

Research Questions

Specifically, this study sought to answer the following questions:

1. What is the profile of the pupil respondents in terms of:
 - 1.1 Age
 - 1.2 Sex
 - 1.3 General Weighted Average (GWA) in Mathematics 6
2. What are the essential mathematical learning competencies for basic education learners as defined by the Department of Education K to 12 Mathematics Curriculum?
3. To what extent have the mathematical essential learning competencies been demonstrated by the Grade 6 pupils as assessed by their teachers and by the pupils themselves?
4. Is there a significant difference in the self-assessed extent of the mathematical essential learning competencies demonstrated by the Grade 6 pupils when grouped according to their profile?
5. Is there a significant difference between the assessments of the teachers and the pupils on the extent of the competencies demonstrated?
6. Is there a significant correlation between the GWA of Grade 6 learners and their self-reported perception of learning in mathematics?
7. Based on the findings of the study, what recommendations may be proposed?

Hypotheses

The following null hypotheses were tested at the 0.05 level of significance:

Ho1: There is no significant difference in the self-assessed extent of the mathematical essential learning competencies demonstrated by the Grade 6 pupils when grouped according to their profile.

Ho2: There is no significant difference between the assessments of the teachers and pupils on the extent of the mathematical essential learning competencies demonstrated by the Grade 6 pupils.

Ho3: There is no significant correlation between the GWA of Grade 6 learners and their self-reported perception of learning in mathematics.

Theoretical Framework

This study is grounded on several theories of learning and problem-solving that underpin mathematics education. The **Conceptual Framework of Mathematics Education in the Philippines**, as articulated in the K to 12 Mathematics Curriculum Guide, emphasizes that mathematics is not only concerned with computational proficiency but also with the development of critical thinking and problem-solving skills applicable to real-life situations (Department of Education, 2016).

One theoretical anchor is **Polya's Problem-Solving Theory (1945, 1962)**, which conceptualizes mathematical learning as a structured process of overcoming obstacles and finding solutions to non-routine problems. This model remains relevant for enhancing learners' reasoning and analytical skills. Complementing this is **Scriven and Paul's (1987)** conception of critical thinking as the disciplined process of conceptualizing, applying, analyzing, synthesizing, and evaluating information, which is integral to mathematics instruction.

The study also draws on **Kolb's Experiential Learning Theory (1984)**, which views learning as the transformation of experience into knowledge through a cycle of concrete experience, reflective observation, abstract conceptualization, and active experimentation. In the mathematics classroom, this framework supports hands-on and inquiry-based approaches. Similarly, **Lave and Wenger's (1991) Social Learning Theory** highlights situated learning, where knowledge is acquired within authentic contexts through social interaction, making it vital for collaborative mathematical activities.

Other complementary foundations include **Constructivist Theory**, which posits that learners build knowledge through active engagement and prior experience; **Discovery Learning (Bruner, 1961)** and **Inquiry-Based Learning (Department of Education, 2016)**, which encourage students to uncover mathematical concepts through guided exploration; and **Reflective Learning (Dewey, 1933)**, which emphasizes thoughtful processing of experiences to strengthen understanding.

Together, these theories provide a multidimensional lens for assessing the extent to which Grade 6 completers of Claver Central Elementary School achieved essential mathematical learning competencies. They stress the importance of fostering problem-solving, critical thinking, collaboration, and real-world application, which are all embedded in the K to 12 Mathematics Curriculum.

Conceptual Framework

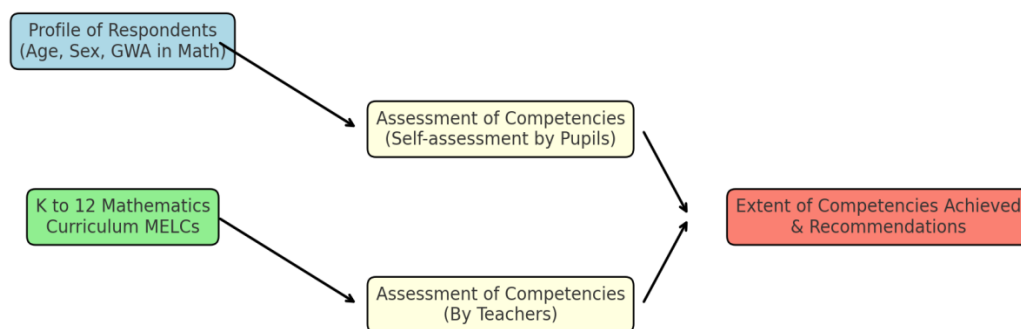


Figure 1. Conceptual Framework of the Study

Figure 1 presents the schematic diagram of the study, showing the flow from learner profile and K to 12 MELCs as inputs, through the dual assessments of pupils and teachers, leading toward recommendations for enhancing mathematical education.

This study was anchored on the Department of Education’s K to 12 Mathematics Curriculum Framework, which emphasizes the mastery of Mathematical Essential Learning Competencies (MELCs). The framework highlights five domains—Numbers and Number Sense, Measurement, Geometry, Patterns and Algebra, and Statistics and Probability—as the foundations of mathematical proficiency among learners.

The research considered the **profile variables** of Grade 6 learners (age, sex, and general weighted average in Mathematics 6) and their relationship to the extent of competencies achieved. The competencies were assessed both by the pupils themselves and by their teachers, ensuring a more comprehensive evaluation of learner performance. The outcomes of these assessments were intended to generate practical **recommendations** for improving teaching and learning practices.

Significance of the Study

This study is significant as it provides empirical evidence on the extent to which Grade 6 completers of Claver Central Elementary School have achieved the essential mathematical competencies outlined in the K to 12 curriculum. The findings benefit learners by making them aware of their strengths and weaknesses in mathematics, enabling targeted self-improvement; teachers by guiding them in refining instructional strategies and developing responsive interventions; and school administrators by identifying areas that require support in terms of resources and teacher training. Parents likewise gain insights into their children’s mathematical development, fostering greater home-school collaboration, while the Department of Education may use the results to inform curriculum review and policy decisions. For future researchers, the study serves as a reference for further investigation on mathematics education at the elementary level, especially in bridging gaps during the transition to secondary education.

Scope and Limitations

This study focused on assessing the extent to which Grade 6 completers of Claver Central Elementary School achieved the essential mathematical learning competencies prescribed in the K to 12 Mathematics Curriculum during school year 2023–2024. It specifically covered competencies in Numbers and Number Sense, Measurement, Geometry, Patterns and Algebra, and Statistics and Probability, as assessed through self-reports by pupils and corresponding evaluations by their teachers. The study was limited to mathematics as a subject area and did not examine other disciplines or non-cognitive factors that may influence academic performance. Data were confined to one school and one academic year, which constrains the generalizability of the findings to other contexts, yet provides a focused understanding of learner performance at this transition stage.

Review of Related Literature and Studies

Mathematics education has consistently been recognized as a critical foundation for lifelong learning and national development. International assessments, such as PISA and TIMSS, have shown that Filipino learners underperform in mathematics compared with their global peers, highlighting systemic issues in instruction, equity, and resources (OECD, 2019; Mullis et al., 2020). Research emphasizes that essential learning competencies, particularly in Numbers, Measurement, Geometry, Algebra, and Statistics, form the building blocks for higher-order thinking and application in real-life contexts (Vistro-Yu, 2010; Trance & Trance, 2019). Studies also underscore the importance of teaching approaches grounded in constructivism, experiential and inquiry-based learning, which foster deeper understanding and problem-solving abilities (Kolb, 1984; Lave & Wenger, 1991). In the Philippine setting, investigations have shown gaps in learners' mastery of competencies at the elementary level, with variations across socio-economic background, school resources, and instructional practices (Torres, 2021; Acido & Caballes, 2024). While prior studies have broadly examined mathematics performance across grade levels, there is limited focus on Grade 6 learners who are at a pivotal transition point to secondary education. This study seeks to address that gap by examining the extent of competencies achieved by Grade 6 completers in Claver, providing insights that may inform curriculum refinement and targeted interventions.

Methodology

This study employed a quantitative descriptive-correlational research design to assess the extent to which Grade 6 completers of Claver Central Elementary School achieved the essential mathematical learning competencies prescribed by the K to 12 Mathematics Curriculum. The respondents included both pupils and their teachers, selected purposively to ensure alignment with the study objectives. Researcher-made questionnaires, validated by experts and pilot-tested for reliability, served as the primary instruments for data collection. The data-gathering process involved obtaining approval from school authorities, distributing survey instruments to pupils and teachers, and securing informed consent to ensure ethical compliance. Descriptive statistics such as mean and standard deviation were used to determine the extent of competencies achieved, while inferential analyses—including t-test, ANOVA, and Pearson correlation—were applied to test significant differences and relationships. The study upheld principles of confidentiality, voluntary participation, and academic integrity throughout the research process.

Results and Discussion

Table 1 – Extent of Mathematical Essential Learning Competencies (Numbers and Number Sense)

Indicator	Teachers (M, SD, VRI)	Pupils (M, SD, VRI)	Average Mean	Rank
Count and represent numbers accurately	3.81 (0.43, A-HC)	3.85 (0.38, A-HC)	3.83	1
Understand relationship between numbers and perform basic operations	3.24 (0.63, S-MC)	3.24 (0.65, S-MC)	3.24	2
Compare and order numbers effectively	3.23 (0.69, S-MC)	3.15 (0.73, S-MC)	3.19	3
Solve problems with fractions, decimals, and percentages	2.57 (0.80, S-MC)	2.57 (0.82, S-MC)	2.47	12
Apply number properties confidently	2.78 (0.76, S-MC)	2.73 (0.76, S-MC)	2.76	10
...	...	...	...	...

Scale used:

3.25–4.00 = Always (A), Highly Competent (HC)

2.50–3.24 = Sometimes (S), Moderately Competent (MC)

1.75–2.49 = Rarely (R), Slightly Competent (SC)

1.00–1.74 = Never (N), Not Competent (NC)

The results in table 1 show that pupils are most competent in **counting and representing numbers accurately**, both teachers and pupils rating this as "Always" and "Highly Competent" (M = 3.83). Competence is moderate in **basic operations** and **comparing numbers**, while weaknesses appear in **fractions, decimals, and percentages**, where pupils were only "Sometimes" competent. This suggests strong foundational numeracy but difficulty in applying higher-level number skills.

Table 2. The Extent of Mathematical Essential Learning Competencies Demonstrated by the Grade 6 Pupils as Assessed by their Teachers and Pupils themselves in terms of Measurement

Competency	Teachers (M)	Pupils (M)	Interpretation
Convert units of time, linear, weight, and capacity	2.68	2.61	Sometimes / Moderately Competent
Solve routine problems involving perimeter, area, and surface area	2.71	2.64	Sometimes / Moderately Competent
Estimate measurement of objects in real-life situations	2.94	2.91	Sometimes / Moderately Competent
Use calendar to identify units of time	3.38	3.31	Always / Highly Competent
Solve routine problems involving volume	2.71	2.64	Sometimes / Moderately Competent
Solve non-routine problems involving measurement	2.50	2.54	Sometimes / Moderately

Competency	Teachers (M)	Pupils (M)	Interpretation
			Competent
Overall Mean	2.82	2.78	Sometimes / Moderately Competent

Both teachers and pupils in table 2 rated the **extent of mastery in measurement competencies** as *moderate* (overall mean: Teachers = 2.82, Pupils = 2.78). The highest competency identified was the use of a calendar to recognize time units (Teachers = 3.38; Pupils = 3.31), which reached the *Highly Competent* level. This suggests that time-related skills are practical and familiar to learners. In contrast, solving **non-routine and complex problems** in measurement was rated lowest (Teachers = 2.50; Pupils = 2.54), indicating challenges in applying higher-order problem-solving skills.

The results imply that while pupils are confident in **basic and routine measurement skills**, they struggle with more complex applications that demand critical thinking and integration of multiple concepts. Teachers' and pupils' assessments were generally aligned, which validates the reliability of the observed outcomes.

Table 3. The Extent of Mathematical Essential Learning Competencies Demonstrated by the Grade 6 Pupils as Assessed by their Teachers and Pupils themselves in terms of Geometry

Competency	Teachers (M)	Pupils (M)	Interpretation
Identify and name basic shapes (square, circle, triangle, rectangle)	3.36	3.28	Always / Highly Competent
Classify shapes according to properties (sides, angles)	2.94	2.91	Sometimes / Moderately Competent
Identify symmetrical figures	3.21	3.18	Often / Competent
Solve problems involving perimeter and area of plane figures	2.88	2.80	Sometimes / Moderately Competent
Recognize and draw geometric figures	3.10	3.05	Often / Competent
Overall Mean	3.10	3.04	Often / Competent

The findings in **Geometry** in table 3 show that both teachers and pupils rated the competencies at the *Competent* level (Overall Mean: Teachers = 3.10, Pupils = 3.04). Pupils were strongest in **identifying and naming basic shapes** (Teachers = 3.36; Pupils = 3.28), reflecting mastery of foundational geometric concepts. Recognition of **symmetrical figures** also scored high, indicating pupils' ability to visualize and manipulate spatial relationships.

However, **problem-solving with perimeter and area** was rated lower (Teachers = 2.88; Pupils = 2.80), showing that while pupils recognize shapes, applying these skills to solve problems remains moderately challenging. The close alignment of teacher and pupil ratings suggests consistency in perception of strengths and weaknesses.

The results imply that instructional strategies in geometry successfully build **basic recognition and visualization skills**, but there is a need to enhance **application-oriented problem solving** to bridge the gap between theoretical knowledge and practice.

Table 4. **The Extent of Mathematical Essential Learning Competencies Demonstrated by the Grade 6 Pupils as Assessed by their Teachers and Pupils themselves in terms of Patterns & Algebra**

Competency	Teachers (M)	Pupils (M)	Interpretation
Understand and use the concept of equality (e.g., $3 + 2 = 5$; $5 = 3 + 2$)	3.38	3.30	Always / Highly Competent
Solve simple word problems involving equal groups (e.g., 3 apples in each of 2 bags = 6 total)	3.32	3.25	Always / Highly Competent
Recognize and extend numerical sequences (e.g., 2, 4, 6, 8...)	3.22	3.22	Often / Competent
Solve simple word problems (e.g., "There were 5 apples, 2 were eaten, how many left?")	3.23	3.20	Often / Competent
Identify rules/relationships in number patterns (e.g., "add 3 each time")	3.02	2.99	Often / Competent
Identify/extend patterns; represent relationships with tables, graphs, and symbols	2.94–2.96	2.94–2.96	Sometimes / Moderately Competent
Understand basic algebraic concepts and solve simple algebraic problems	2.89	2.89	Sometimes / Moderately Competent
Use concrete objects/drawings to model addition and subtraction	2.78	2.79	Sometimes / Moderately Competent
Overall Mean	3.05	3.04	Often / Competent

The results for **Patterns & Algebra** table 4 reflect a mixed performance among Grade 6 pupils. Both teachers and pupils identified **understanding equality** and **solving word problems with equal groups** as the strongest areas (Teachers = 3.38; Pupils = 3.30 and Teachers = 3.32; Pupils = 3.25, respectively), which were interpreted as *Highly Competent*. This suggests that pupils have a strong grasp of balance and equivalence in mathematical operations.

Meanwhile, competencies requiring **abstract reasoning and representation**—such as using tables, graphs, symbols, and concrete modeling of problems—were rated lower (means around 2.78–2.96), showing they remain only *Moderately Competent*.

Overall, the section indicates that pupils excel in **practical arithmetic and equality concepts** but need improvement in **abstract algebraic reasoning and representation**. The consistency in teacher and pupil ratings further highlights a shared perspective on these strengths and weaknesses.

Table 5. **The Extent of Mathematical Essential Learning Competencies Demonstrated by the Grade 6 Pupils as Assessed by their Teachers and Pupils themselves in terms of Statistics and Probability**

Competency	Teachers (M)	Pupils (M)	Interpretation
Sort objects or data into categories (e.g., colors, shapes)	3.30	3.22	Highly Competent (Teachers) / Competent (Pupils)
Organize data using tables, charts, or simple graphs	3.12	3.05	Competent
Describe outcomes of simple probability experiments	3.02	2.95	Competent
Construct pictographs and bar graphs	2.96	2.91	Moderately Competent

Competency	Teachers (M)	Pupils (M)	Interpretation
Interpret data represented in tables or charts	2.75	2.61	Moderately Competent
Overall Mean	3.03	2.95	Competent

The findings from **Statistics and Probability** in table 5 show that the highest-rated skill among Grade 6 pupils is the ability to **sort objects or data into categories**. Teachers rated this with a mean of **3.30**, while pupils gave a similar score of **3.22**, suggesting strong mastery of this basic competency. This indicates pupils have developed good classification skills through both classroom tasks and daily activities.

On the other hand, the lowest-rated competency is the ability to **interpret data in tables or charts**, with teachers assigning a mean of **2.75** and pupils **2.61**, both interpreted as *Moderately Competent*. This shows that while pupils can organize and display data, they find it more challenging to analyze and interpret visual data representations.

Overall, the results suggest that pupils are **competent in handling basic statistical tasks** such as sorting and simple organization of data but need **further support in higher-order skills** like data interpretation and probability analysis.

Table 6. **Summary Table on the Extent of Mathematical Essential Learning Competencies Demonstrated by the Grade 6 Pupils as Assessed by their Teachers and Pupils Themselves**

Mathematical Domain	Teachers (M)	Pupils (M)	Interpretation
Numbers and Number Sense	3.04	2.96	Moderately Competent
Measurement	2.88	2.87	Moderately Competent
Geometry	3.11	3.05	Moderately Competent
Patterns and Algebra	3.02	2.91	Moderately Competent
Statistics and Probability	3.03	2.95	Moderately Competent
Overall Mean	3.02	2.95	Moderately Competent

The summary in table 6 shows that **Geometry** received the highest ratings from both teachers (3.11) and pupils (3.05), interpreted as *Moderately Competent*. This indicates pupils demonstrate better grasp of geometric concepts, likely because geometry involves more concrete, visual, and real-world applications.

In contrast, **Measurement** received the lowest ratings (2.88 by teachers and 2.87 by pupils), also interpreted as *Moderately Competent*. This suggests students struggle more with applying measurement concepts such as unit conversions, perimeter, area, and volume calculations.

Overall, the average means across all domains fall within the *Moderately Competent* level, reflecting that while pupils have developed foundational mathematical skills, consistent mastery across all domains remains limited. The results emphasize the need for targeted interventions in measurement and interpretive tasks while strengthening higher-order thinking in problem-solving.

Table 7. **Significant Degree of Difference in the Self-Assessed Extent of Mathematics Essential Learning Competencies Demonstrated by the Grade 6 Pupils when Grouped According to Sex**

Profile	Factor	Coefficient	p-value	Decision	Interpretation
Sex	Numbers & Number Sense	-3.43	< .001	Reject Ho	Significant
	Measurement	-3.00	0.003	Reject Ho	Significant
	Geometry	1.991	0.044	Reject Ho	Significant
	Patterns & Algebra	-3.09	0.002	Reject Ho	Significant
	Statistics & Probability	-3.01	0.003	Reject Ho	Significant

The results in table 7 reveal **significant differences** between male and female pupils across all five mathematical domains. Since all p-values are less than the 0.05 threshold, the null hypothesis (Ho) was consistently rejected. This means that **sex influences how pupils perceive their competencies** in mathematics.

Notably, differences were evident in both computation-oriented areas (Numbers, Measurement, Algebra) and conceptual domains (Geometry, Statistics). This suggests that gender-specific perceptions or learning experiences affect confidence and self-assessment. The finding aligns with prior studies where boys often rate themselves more confident in mathematics, while girls tend to underestimate their abilities despite equal or similar performance.

These results call for **gender-responsive teaching strategies** that not only enhance actual performance but also address disparities in self-perception and confidence in mathematical learning.

Table 8. **Significant Degree of Difference in the Self-Assessed Extent of Mathematics Essential Learning Competencies Demonstrated by the Grade 6 Pupils when Grouped According to their General Weighted Average (GWA) in Mathematics 6**

Profile (GWA)	Factor	Coefficient	p-value	Decision	Interpretation
GWA in Math 6	Numbers & Number Sense	54.9	< .001	Reject Ho	Significant
	Measurement	45.7	< .001	Reject Ho	Significant
	Geometry	53.6	< .001	Reject Ho	Significant
	Patterns & Algebra	53.0	< .001	Reject Ho	Significant
	Statistics & Probability	49.4	< .001	Reject Ho	Significant

The findings in table 8 indicate that **academic performance (GWA)** is strongly associated with how students assess their mathematical competencies. In all five domains of mathematics, the differences were statistically significant, with very high coefficients and p-values less than 0.001.

This means that students with higher GWAs in Mathematics 6 tended to **rate themselves more positively** across competencies. Conversely, lower-performing students assessed themselves less confidently. The results suggest that **self-perception of mathematical ability aligns closely with actual academic achievement**, supporting the idea that performance and confidence reinforce each other.

The outcome highlights the importance of **academic support mechanisms** for struggling students. Enhancing self-efficacy through targeted interventions may not only improve self-assessment but also lead to better actual performance in mathematics.

Table 9. **Difference Between the Assessments of Teachers and Pupils on the Extent of Mathematics Essential Learning Competencies Demonstrated by Grade 6 Pupils**

Factor	Coefficient	p-value	Decision	Interpretation
Numbers & Number Sense	9706	0.732	Accept Ho	Not Significant
Measurement	—	—	Accept Ho	Not Significant
Geometry	—	—	Accept Ho	Not Significant
Patterns & Algebra	9706	0.732	Accept Ho	Not Significant
Statistics & Probability	9434	0.459	Accept Ho	Not Significant

The results in table 9 show **no significant difference between teachers' and pupils' assessments** across all five mathematics competency domains. All p-values were greater than the 0.05 threshold, which means the null hypothesis was accepted in every case.

This indicates that **teachers and pupils share a generally consistent view** of the extent to which Grade 6 learners demonstrate essential mathematical skills. For example, in Patterns & Algebra and Statistics & Probability, both groups produced assessments that were statistically aligned.

Such alignment is a **positive outcome**, suggesting that pupils' self-evaluations are not substantially different from their teachers' professional judgments. It implies that the learning environment in Claver Central Elementary School fosters a shared understanding of mathematics performance standards.

Summary of Table 10. Although the numeric table format was not fully captured, the extracted discussion indicates the following:

Variable Pair	Correlation Result	Interpretation
GWA in Math 6 × Numbers & Number Sense	Significant ($p < .05$)	Positive relationship
GWA in Math 6 × Measurement	Significant ($p < .05$)	Positive relationship
GWA in Math 6 × Geometry	Significant ($p < .05$)	Positive relationship
GWA in Math 6 × Patterns & Algebra	Significant ($p < .05$)	Positive relationship
GWA in Math 6 × Statistics & Probability	Significant ($p < .05$)	Positive relationship

The analysis in table 10 demonstrates that **better-performing students (higher GWAs)** not only score higher academically but also view themselves as more competent across all domains of mathematics. This reinforces the finding from earlier tables that performance and self-assessment are tightly interlinked.

Such results support the idea that **confidence and competence are mutually reinforcing**. High achievers tend to believe in their abilities, which may further sustain their success. Meanwhile, struggling students may under-assess themselves, indicating the need for interventions that boost both their learning and confidence.

Conclusions

The study concluded that there is a significant positive relationship between Grade 6 pupils' academic performance in mathematics and their self-perceived understanding across all five domains: numbers and number

sense, measurement, geometry, patterns and algebra, and statistics and probability. Pupils with higher general weighted averages (GWAs) demonstrated more positive self-assessments of their competencies, whereas those with lower performance perceived themselves with moderate confidence. These findings highlight that achievement and self-perception in mathematics are mutually reinforcing, emphasizing the importance of teaching strategies that foster both cognitive competence and affective confidence among learners.

Recommendations

Based on the findings, the study recommended that mathematics teachers adopt pedagogical practices that not only enhance students' mastery of mathematical concepts but also strengthen their confidence and self-belief. Remedial and enrichment programs should be provided for struggling learners to address both performance gaps and self-perception challenges. Curriculum developers and school administrators are encouraged to design learning interventions that integrate academic support with motivational strategies, ensuring that the dual objectives of achievement and self-concept are equally addressed. Future research may expand this work by examining longitudinal effects of self-perception on sustained mathematics achievement across higher grade levels.

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