

## THE PROBLEM IN SOLVING IS THE LANGUAGE

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**Abstract:** This study is intended to assess the comprehension of Grade 4 pupils in problem solving using Mother Tongue Based instruction and English based instruction using descriptive-correlational research design that involved fifty Grade 4 pupils of different elementary schools in Nueva Ecija in each year from 2016-2019 with a total of 200 pupils. Specifically, this study described the profile of the pupils in terms of gender and sociodemographic status. Moreover, it aimed to determine the level of pupils' achievement in Mathematics in the mother tongue-based instruction and English based instruction and to compare pupils' Mathematics achievement in the mother tongue-based instruction and English based instruction. The pupils' achievement in the mother tongue-based instruction was significantly higher than the achievement of those who were in the English instruction. Considering the sociodemographic status, there was no significant difference except for the type of school the pupils attended to. Pupils who attended private schools had higher achievement in problem solving than those who attended public schools.

**Keywords:** *Mother tongue-based instruction, English based instruction, problem solving*

## INTRODUCTION

Mathematics education had always been challenging ever since the first international assessment that Philippines joins to, the result is consistently in the lowest rank. In the 1999 Trends in International Mathematics and Science Study (TIMSS), the Philippines landed in 36<sup>th</sup> place in both Math and Science out of the 38 countries that participated. Moreover, in the 2003 TIMSS, again, the Philippines landed among the lowest in both Math (34<sup>th</sup> of 38 countries) and Science (43<sup>rd</sup> of 46 countries). Lastly, in 2008, Philippines ended last among 10 countries for both Advanced Math and Science. In this international assessment shows the incompetence of the Philippines education system compare to the other ASEAN countries. Also, Philippines was the last country in Asia and one of the only three countries in the world with a 10-year basic education program. To align the country's curriculum and meet the standard of the global market, the Department of Education (DepEd) adapted the K to 12- year program for the basic educational system.

The K to 12 program includes the Mother Tongue – Based Multilingual Education (MTB-MLE) as the salient part of the government's banner program for education, in which all subjects up to Grade 3 will be taught using the mother tongue. Cabansag (2016) agreed that learners begin their education in the language they understand best - the mother tongue - and develop a strong foundation in their mother language before adding additional languages.

In connection to this, the study aimed to assess the comprehension of Grade 4 pupils in problem solving using Mother Tongue Based instruction and English based instruction.

### **Statement of the Problem**

This study aimed to assess the comprehension of Grade 4 pupils in problem solving using Mother Tongue Based instruction and English based instruction.

Furthermore, this study sought to answer the following questions:

1. How may the profile of the respondents be described in terms of:
  - 1.1 gender;
  - 1.2 type of school attended; and
  - 1.3 ethnicity?
2. What is the level of pupils' achievement in Mathematics in:
  - 2.1 Mother tongue-based instruction
  - 2.2 English based instruction?
3. Is there a significant difference on the pupils 'profile and pupils' achievement in Mathematics in:
  - 2.3 Mother tongue-based instruction
  - 2.4 English based instruction?
4. Is there a significant difference on the pupils' Mathematics achievement in the mother tongue-based instruction and English based instruction?

### **METHODOLOGY**

This study used descriptive-correlational research design. The respondents of this study who were chosen through purposive sampling technique that were comprises fifty pupils of Grade 4pupils from public and private schools in Nueva Ecija of school year 2016-2019.

The test questionnaire used was composed of 20- word problem in which10 items were written in mother-tongue and that 10 items were translated in English. It is comprised of 2-word problems each topic such as number sense, geometry, pattern and algebra, measurement, and statistics and probability.

This research used the frequency distribution which is a systematic way to test series the observation. In comparing the levels of pupil's achievements between mother-tongue based instruction and English instruction, average was used. In determining the difference of the sociodemographic profile of the respondents and their level of achievement, Independent Sample T-test was used. Statistical Program for Social Sciences (SPSS) was the program used to compute the statistical data.

To determine the level of pupils' achievement in Mathematics problem solving, the following scores for verbal interpretations were used.

**Table 1**  
**Score Range and Verbal Interpretations**

<b>Score Range</b>	<b>Equivalent</b>	<b>Verbal Interpretations</b>
0-9	74 and below	Basic
10-11	75-79	Developing
12-13	80-84	Approaching Proficiency
14-15	85-89	Proficient
16-20	90 above	Advance

## **RESULTS AND DISCUSSIONS**

Majority of the pupils were female, pupils attended in public and private were equal, and all pupils are Tagalog natives.

Table 2 shows the level of the pupils' achievement in Mathematics problem solving in the mother tongue-based instruction and English based instruction.

**Table 2**  
**Level of the Pupils' Achievement in Mathematics Problem Solving in the Mother Tongue-Based Instruction and English Based Instruction**

	<b>Mother Tongue Based Instruction</b>	<b>Verbal Interpretation</b>	<b>English Based Instruction</b>	<b>Verbal Interpretation</b>
2016	15.2	Proficient	11	Developing
2017	15.3	Proficient	13.7	Approaching Proficiency
2018	16.5	Advanced	15.4	Proficient
2019	18.4	Advanced	16.2	Advanced
<b>Average</b>	<b>16.35</b>	<b>Advanced</b>	<b>14.1</b>	<b>Proficient</b>

As shown in the Table 2, the scores are consistently improving, thus, the used of mother-tongue based instruction was consistently higher than the English based instruction.

This verifies that using mother-tongue based instruction can improve the comprehension of the pupils in problem solving.

**Table 3**  
**Significant Difference on the Pupil's Profile and Level of Achievement**

			Levene’s Test for Equality of Variance		t	Interpretation	
			F	Sig.			
Gender	Mother Tongue Based Instruction	Equal variances assumed	.302	.583	-0.824	No Significant Difference	
	English based Instruction	Equal variances assumed	3.201	.075	0.270	No Significant Difference	
Type of School Attended	Mother Tongue Based Instruction	Equal variances not assumed	4.246	.041	-1.410	There is a Significant Difference	
						<b>MEAN</b>	
						Public	16.08
		Private	16.52				
	English based Instruction	Equal variances assumed	.067	.797	-.077	No Significant Difference	
Ethnicity	Cannot be computed since there is only on variable						

Table 3 shows that among the sociodemographic status, only in the type of school the pupils attended has a significant difference. It indicates that pupils who attended private schools that got a mean score of 16.52 has a significantly achieved higher in problem solving than those who attended public schools that got a mean score of 16.08. Many factors may affect the comprehension of the pupils like the availability of the instructional materials, number of pupils in the classroom, etc.

## CONCLUSIONS

Among the 200 pupil-respondents in this study, majority are female and all of which are Tagalog natives. It implies that only Tagalog was used in the part of mother-tongue instruction for problem.

The pupils' achievement in the mother tongue-based instruction was significantly higher than the achievement of those who were in the English instruction. Considering the sociodemographic status, there was no significant difference except for the type of school the pupils attended to. Pupils who attended private schools had higher achievement in problem solving than those who attended public schools. Some factors like the numbers of pupils in a class may affect the instructional procedure of the teacher.

## RECOMMENDATIONS

Based on the conclusions the following recommendations are offered:

The result of this study may be disseminated to the participating schools so that it may serve as a guide in intensifying the instructional strategies in problem solving.

Similar studies may be conducted with a larger scope and with a diverse ethnicity to validate the efficiency of mother-tongue based instruction in problem solving or in other subject areas.

## REFERENCES

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