



ACTION RESEARCH ON IMPROVING STUDENTS' ACADEMIC PERFORMANCE IN MATHEMATICS 8 USING “FILIPINIZED COMPETENCY-BASED INSTRUCTION OR FIL-CBI APPROACH

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Filipinized Competency-based Instruction (FIL-CBI) Material

Example 1:

$$\frac{3}{6b} + \frac{1}{6b}$$

$$= \frac{3+1}{6b}$$

$$= \frac{4}{6b}$$

$$= \frac{\cancel{2} \cdot 2}{\cancel{2} \cdot 3 \cdot b}$$

$$= \frac{2}{3b}$$

Ang dalawang rational algebraic expressions ay mayroong common denominator na $6b$.

I-add ang mga numerators ng dalawang expressions.

Kunin ang lowest term. Ang numerator na 4 at denominator na $6b$ ay parehong divisible sa 2. I-divide ang 4 at $6b$ sa 2 para makuha ang lowest term.

Activity Sheets Quarter 1 Week No. 2
Type of Activities: Concept Notes/Drill/Activity/Performance Assessment

Name: _____ 8 - _____
SURNAME FIRSTNAME MI. Section

SCORES			
Drill 8: _____	Drill 9: _____	Drill 10: _____	_____

References: <https://www.ck12.org>, <https://www.quickmath.com/>, <https://thetmathpage.com/>, <https://www.mathwarehouse.com/>, <https://www.exp1.com/>, <https://www.cliffsnotes.com/>, <https://www.purplemath.com/>, DepEd Module 8 pages 13 - 22

Lesson 8 (L8): Operations on Rational Algebraic Expressions – Adding and Subtracting Similar RAE

Similar RAE are rational algebraic expressions with the same or common denominator.

$$\frac{a}{b} \pm \frac{c}{b} = \frac{a \pm c}{b}, c \neq 0$$

Steps in Adding/Subtracting Similar Rational Algebraic Expressions/Rational Algebraic Expressions with Common Denominators:

1. Add/subtract the numerators
2. Place the result over the common denominator.
3. Reduce your answer to its simplest form.

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Kunin ang lowest term. Ang numerator na 4 at denominator na $6b$ ay parehong divisible sa 2. I-divide ang 4 at $6b$ sa 2 para makuha ang lowest term.

Example 2:

$$\frac{x}{x^2-4} + \frac{2}{x^2-4}$$

$$= \frac{x+2}{x^2-4}$$

$$= \frac{x+2}{(x+2)(x-2)}$$

$$= \frac{\cancel{x+2}}{\cancel{(x+2)}(x-2)}$$

$$= \frac{1}{x-2}$$

Kopyahin ang common denominator ng dalawang algebraic expressions.

I-add ang mga numerators na x at 2. Dahil hindi maaring ipagsama ang x at 2 dahil sila ay unlike terms, kopyahin na lamnang natin ang dalawang terms.

Kunin ang lowest term. Ang denominator na $x^2 - 4$ ay may factored form na $(x + 2)(x - 2)$. Balikan ang lesson sa factoring.

Maaring icancel ang $(x+2)$ sa numerator at denominator.



Context and Rationale

- The students in distance learning experience difficulty in understanding Math instructional materials written in English.
- The medium of instruction of Math self-learning modules challenged learners in MDL.
- The study verified the effectiveness of Filipinized Competency-based Instruction (Fil-CBI) in improving the Math performance of students under MDL.



Research Questions

1. What is the level of Mathematics performance of the learners before and after the experiment?
2. Is there a significant improvement in the Mathematics performance of learners who utilized the self-learning module written in English?
3. Is there a significant improvement in the Mathematics performance of learners who utilized the Fil-CBI instructional material?
4. Is there a significant difference between the Mathematics performance of learners who utilized the Fil-CBI instructional material and learners who used the self-learning module written in English?



Methodology

Twenty-four (24) grade 8 learners were selected to participate in the study. The participants were divided into two groups with statistically the same level of previous math performance. Both groups took a 25-item pre-test and post-test involving one of the identified least mastered skills in Mathematics 8. The teacher-researchers facilitated a modular learning session in between the conduct of the pre-test and post-test. The control group used instructional material written completely in English, while the experimental group utilized the Fil-CBI instructional material.



Results

Table 2

Math Performance of Control and Experimental Groups

	Mean (CG)	SD	Mean (EG)	SD
Pre test	7.67	3.37	7.67	2.01
Post test	14.08	5.16	17.83	5.03



Results

Table 3

Comparison between the Pre-test and Post-test Performance of Control Group

	Mean (Pre)	Mean (Post)	T	P	SD (Pre)	SD (Post)
Control Group Performance	7.67	14.08	-3.45	.002*	3.37	5.16

*p < .05



Results

Table 4

Comparison between the Pre-test and Post-test Performance of Experimental Group

	Mean (Pre)	Mean (Post)	T	p	SD (Pre)	SD (Post)
Experimental Group Performance	7.67	17.83	-6.22	.000*	2.01	5.03

*p < .05



Results

Table 5

Independent t test (Performance of Control and Experiment Groups)

	Mean (CG)	Mean (EG)	T	p	SD (CG)	SD (EG)
Pre test	7.67	7.67	.00	1.000	3.37	2.01
Post test	14.08	17.83	-1.73	.049*	5.16	5.03

*p < .05



Recommendations

1. Other grade levels can utilize this approach to provide additional instructional support to learners under MDL.
2. Conduct a similar study in other subject areas that use English as a medium of instruction.
3. Examine the perception of learners on the use of the Filipino language as the medium of instruction



Recommendations

4. Develop and modify the Fil-CBI instructional material, structured to the prescribed format of the Department of Education.
5. The Fil-CBI approach can be of use for the learners and teachers who will participate in curricular and extracurricular competitions outside the school.



THANK YOU!