

Task Cards Instruction and Skill in Adding and Subtracting Dissimilar Fractions

Ronelia P. Deluao¹, Joe Vincent B. Deluao²

¹Master Teacher I, R.C. Quimpo Elementary School (Department of Education), Talomo District, Davao City, Philippines

²Faculty, College of Engineering, University of Southeastern Philippines (USEP), Bo. Obrero, Davao City, Philippines

Abstract: This disquisition was intended to determine whether the use of Task Cards Instruction would significantly improve the performance of learners in adding and subtracting dissimilar fractions. Thirty-nine (39) students from Grade Six - Bonifacio of R.C. Quimpo Elementary School were preferred as respondents through purposive sampling. Descriptive-comparative design using Paired Samples t- Test and Eta- Squared were used. The specific questions answered were :1) What are the pretest scores of the learners prior to the intervention? 2) What are the posttest scores of the learners following the intervention? 3) Is there a significant difference between the pretest and posttest scores of the learners? 4) What is the effect size of the Task Cards Instruction to the skills in adding and subtracting dissimilar fractions? The results showed that there was significant difference between the pretest and posttest scores of the respondents in the implementation of Task Cards Instruction. Based on the findings of this study, the following conclusions are drawn:1)The scores of the respondents before the implementation of the Task Cards Instruction was low ; 2)The scores of the respondents after the implementation of Task Cards Instruction was high ;3) There was a significant difference in the pretest and posttest scores of Grade Six-Bonifacio in the implementation of Task Cards Instruction ; and 4) The effect size of Task Cards Instruction to the performance of the respondents in Adding and Subtracting Dissimilar Fractions was moderate.The researcher offered the following recommendations : 1) Encourage Mathematics teachers to use Task Cards as their instructional materials in teaching Mathematics. ; 2) The use of Task Cards is also encouraged in any Mathematics subject, particularly in the Secondary and Tertiary levels ; and 3) Teachers should further attend mathematics training and upgrading especially in the teaching methodology and the use of other teaching resources for the upliftment of the students.Consequently, this approach helped in teaching Mathematics that require full mastery of the concept.

Keywords: Task CardsInstruction, Mathematics Skill, Addition and Subtraction of Dissimilar Fractions, Dissimilar Fraction, Cooperative Learning

1. Introduction

1.1 Background of the Study

Research on students to perform operations on fractions has shown disappointingly poor results. Researchers have consistently commented on the huge percentage of individuals lacking basic fraction skills (Nur Fazilah, 2002; Valarmathy, 2004; Wan, 2002). Inadequate understanding of adding and subtracting dissimilar fractions makes learner reluctant to answer and participate in the lesson. Adding and subtracting dissimilar fractions is a complicated process of computation. It involves the three basic operations.

Armon (2001) and Gabriel (2012) argued learners might benefit from a training based on concrete objects manipulation and explicit learning of rational numbers characteristics. Teaching children concrete activities could help them develop the corresponding abstract concepts. With this, the researcher used Task Cards Instruction in the Follow Me activity as a cooperative learning strategy. Task cards - where the situation and instructions are written for the learners to follow. Through this activity the learners developed confidence in taking part of the lesson. They can use Task Cards as a game in their daily life by making a parallel situation. "Cooperative learning can significantly enhance Mathematics learning in the classroom. Learning increases if the groups have a common goal that they can only achieve if all group members do well on independent learning. Students have to teach each other, because their own success depends on it." (Slavin, et al., 2010)

1.2 Conceptual Framework of the Study

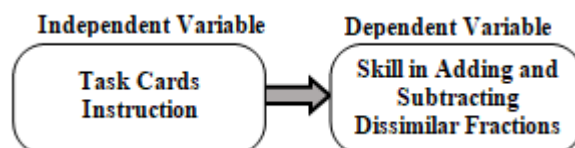


Figure 1: The conceptual framework of the study

1.3 Significance of the Study

This disquisition was intended to determine whether the use of Task Cards Instruction would significantly improve the performance of learners in adding and subtracting dissimilar fractions.

Definitely, it goaled to answer the following questions: 1) What is the pretest scores of the learners prior to the intervention? 2) What is the posttest scores of the learners following the intervention? 3) Is there a significant difference on the pretest and posttest scores of the learners? 4) What is the effect size of Task Cards Instruction to the skills in adding and subtracting dissimilar fractions?

1.4 Definition of Terms Used

The following relevant terms were operationally defined.

Task Cards Instruction. It refers to a task or an activity for learners. It contains the problem and the instructions to be followed by the learners during the activity.

Mathematics Skill: It refers to skills that students should acquire as they develop mathematically. These skills include: Applying and Problem-Solving; Communicating and Expressing; Integrating and Connecting; Reasoning; Implementing and, Understanding and Recalling.

Adding and Subtracting Dissimilar Fractions: It refers to a competency in Mathematics six for the second quarter. In adding dissimilar fractions, fractions are changed into similar fractions whose denominator is their LCD (least common denominator), then combining the resulting similar fractions into a single fraction in lowest terms. In subtracting dissimilar fractions, the same rule is followed as adding dissimilar fractions, to add or subtract dissimilar fractions these rules apply: (a) Find the least common denominator (LCD); (b) Rename each dissimilar fraction to its equivalent fraction using the LCD ;(c) Add or subtract the numerator and write over the denominator, and (d) Simplify the resulting fraction if possible.

Dissimilar Fraction: A dissimilar fraction is a fraction where the denominator is not the same as the other fractions.

Cooperative Learning: A successful teaching strategy in which small teams, each team with students of different levels of ability, use a variety of learning activities to improve their understanding of a subject. Each member of a team is responsible not only for learning what is taught but also for helping teammates learn, thus creating an atmosphere of achievement.

2. Methodology

2.1 Research Method

The study utilized descriptive- comparative research design in which the scores of the respondents in the pretest and posttest were obtained, described and tested if there was a significant difference in pretest and posttest after the implementation of Task Cards Instruction.

2.2 Selection of Respondents

A total of thirty-nine (39) respondents from Grade VI - Bonifacio of R.C. Quimpo Elementary School were identified through the use of purposive sampling.

2.3 Procedure of the Study

The steps which were observed in conducting this investigation involved the following:

- 1) Pretest was administered prior to the implementation of Task Cards Instruction.
- 2) After the pretest, intervention was introduced to the respondents by using the Task Cards for 4 weeks.
- 3) Posttest was administered to the respondents thereafter.
- 4) Scores were tallied and analyzed using SPSS Student Version software. Then, the results of the pretest and posttest scores were analyzed and categorized.

2.4 Data Tool

Correspondingly, the statistical tools used in the analysis of data were Mean and Standard Deviation, Paired Samples t-Test and Eta- squared. Mean and Standard Deviation were used in describing the pretest and posttest scores of the students while Paired Samples t-Test was utilized to determine significant difference in the scores of respondents' pretest and posttest of the implementation of Task Cards Instruction. Also, Eta- squared was computed to measure the effect size of Task Cards Instruction to the performance of respondents in adding and subtracting dissimilar fractions.

3. Results and Discussions

Presented in this section are the tabular and textual analysis of the data and implication of the results are provided.

Table 1: Pretest Score before the Implementation of Task Cards Instruction

Test	N	SD	Mean	Descriptive Interpretation
Pretest	39	3.71	6.59	Low

Table 1 revealed the pretest scores of the respondents before the implementation of Task Cards Instruction. It generated a mean of 6.59 with a descriptive interpretation of low.

Table 2: Posttest Scores during the Implementation of Task Cards Instruction

Test	N	SD	Mean	Descriptive Interpretation
Posttest	39	3.07	10.72	High

Table 2 exhibits the posttest scores of the respondents. It obtained a mean rating of 10.72 with a descriptive interpretation of high.

Table 3: Test on the Significant Difference between the Pretest and Posttest Scores of the Respondents

Test	N	df	t-value	p-value	Remarks
Pretest - Posttest	39	38	-9.424	0	Significant

Table 3 illustrates the Paired Sample t-Test on Task Cards. It shows that the pretest and posttest scores described at t-value of -9.424 with a p-value of 0.000 which is interpreted as significant.

The result above is supported by Arnon (2001) and Gabriel (2012) that teaching children concrete activities could help them develop the corresponding abstract concepts.

Table 4: Effect Size of Task Cards

N	T-value	Eta-Squared	Remarks
39	-9.424	0.71	Moderate

Table 4 delineates the effect size of Task Cards Instruction. It produced an Eta- squared value of 0.71 which signifies moderate effect. Thus, the Task Cards Instruction is effective in improving the skills in adding and subtracting dissimilar fractions.

4. Conclusions

Taking the findings of the study into consideration, the following are concluded:

- 1) The scores of the respondents before the implementation of the Task Cards Instruction were low.
- 2) The scores of the respondents after the implementation of Task Cards Instruction were high.
- 3) There was a significant difference in the pretest and posttest scores of Grade Six-Bonifacio in the implementation of Task Cards Instruction.
- 4) The effect size of Task Cards Instruction to the performance of the respondents in adding and subtracting dissimilar fractions was moderate.
- 5) The use of Task Cards Instruction in teaching adding and subtracting dissimilar fractions improves mathematical skills.

5. Recommendations

Based on the findings and conclusions of the study, the following are recommended:

- 1) Encourage Mathematics teachers to use Task Cards as their instructional materials in teaching Mathematics.
- 2) Encourage the use of Task Cards in any Mathematics subjects in different levels (Secondary/Tertiary).
- 3) Teachers should further attend Mathematics training and upgrading especially in the teaching methodology and the use of other teaching resources for the upliftment of the students.
- 4) Require teachers to participate in relevant trainings/conferences that enhance teaching methodologies in Mathematics.

References

- [1] Gabriel, et al. (2013). *A Componential View of Children's Difficulties in Learning Fractions*. Frontiers in Psychology. Published online 2013, October.
- [2] Idris, N. (2011). *Error Patterns in Addition and Subtraction of Fractions among Form Two Students*. Journal of Mathematics Education. Vol. 4, pp 35-54.
- [3] Slavin, R. E. (2010). *Educator's Guide What Works in Teaching Math*. Retrieved from www.bestevidence.org/word/math_
- [4] Slavin, R. (2010). *Co-operative Learning: What Makes Group-work Work?* In Dumont H, Istance D, and Benavides F (eds.), *The Nature of Learning: Using Research to Inspire Practice*. OECD Publishing.
- [5] Rich, B., et al., (1997). *Schaum's Outline Series of Review of Elementary Mathematics*. The McGraw-Hill Companies, Inc.

Author Profile



Ronelia P. Deluao is a Master Teacher at R.C. Quimpo Elementary School, a public elementary school in Davao City, Philippines. She obtained her B.S. in Home Economics (Major in Applied Arts) from the University of Southern Mindanao, earned 45 units in Master of Arts in Educational Management and passed the PBET (Professional Board Examination for Teachers) in 1992. She

taught in the public school (Department of Education) for 24 years.



Engr. Joe Vincent B. Deluao is an Instructor of Civil Engineering in the University of Southeastern Philippines (USEP), a state university in Barrio Obrero, Davao City, Philippines. He obtained his B.S in Civil Engineering from the University of Mindanao, earned 18 units in Education and is also a Licensed Professional Teacher and a Registered Nurse. He obtained his Master of Arts in Teaching Mathematics at the University of Southeastern Philippines in 2004 with an average of 1.133 (99%). He previously taught Mathematics at the Daniel R. Aguinaldo National High School located in Matina, Davao City for 12 years. He is the sole author of the book entitled "Advanced Algebra and Trigonometry" which was copyrighted last December 1, 2016. Engr. Deluao has three (3) upcoming books to be published namely: Differential Calculus, Integral Calculus and Probability respectively. He is planning to pursue a Doctor of Philosophy in Civil Engineering, Mathematics or Education, and is married to Ronelia P. Deluao, whom they have one daughter, Trixy Collen, a grade 11 student at the Ateneo de Davao Senior High School.