

Developing Mental Math in Addition and Subtraction of Grade 3 Learners of Tubigan Elementary School Using Mobile Game



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ABSTRACT

This action research is to develop mental math in addition and subtraction of grade three learners of Tubigan Elementary School using mobile games, the study consisted 10 grade three learners from Tubigan Elementary School Binan City as the respondents of the study. The sample was purposely taken as the researcher specifically used the grade three learners. The quantitative method was used in this action research using frequency and weighted mean as instrument in data gathering. The data collected in this study was organized and classified using descriptive design. The data collected were encoded, tallied and tabulated to facilitate the presentation and interpretation of results using the frequency, percentage method and descriptive statistics.

The findings were summarised following the order in which the problem of this study were presented: (1) The results in numeracy level of grade three learners in tubigan elementary school are very poor and strongly need a focus in studying addition and subtraction equation; (2) The students are strongly agree on the use of mobile games catch they interest in solving addition and subtraction equation in terms of satisfaction, effectivity and development and improvement; (3) The results found out that the mobile games improve solving mental math of the learners.

In the light of the findings the conclusion of the study, the researcher made the following recommendations: (1) there is need the engagement key stakeholders to improve mental math of the learners. These include parents, teachers, learner's mobile games developers and the department of education; (2) come up with a Tubigan Elementary School Mobile for teaching and learning awareness campaign. This should engage all schools and be facilitated by the Department of Education; (3) There is need to have an ICT policy to encourage mobile usage.

INTRODUCTION

Math is one of the subjects most taken up from kindergarten up to college. Infact, we use math in our everyday life like in exercising, budgeting and when we use math in making decision. With all of these, we can see that learning math is very significant.

Sadly, last 2019 in the study of Trend in International Mathematics and Science Study (TIMSS), Philippines rank last among 58 countries participated in the study. This result challenge the teachers to find new strategy in developing the numeracy level of the elementary learners.

Last 2020 up to present was even more challenging to teachers with the sudden shutdown of the schools, learning was shifted from face to face to Modular Distance Learning (MDL). Since the learners cannot go to school, it is struggle to understand the lesson specially math and instead of studying, they spend most of their time in playing mobile games.

This gave the researcher to come up with the study on Developing Mental Math in Addition and Subtraction of Grade 3 Learners of Tubigan Elementary School using Mobile Game. This study will try to find out if grade 3 learners of Tubigan Elementary school will improve their mental math if mobile game is used.

METHODOLOGY

The descriptive research design in used in this study for it so fit to be use in immediate interpretation and analysis of the data of the respondents. The frequencies of the responses of the respondents will be used to be able to know the data of the responses in a single group in accordance

with the virtue of purposive and convenient type random sampling technique. The researchers will first interview the participants to determine the status in numeracy and how they are improving it. Next, the researcher will conduct meeting with parents and guardians of the learners to discuss the process of the study. Lastly, to determine the effectiveness of the mobile in the learners' mental math, pre-test, formative test and post-test will be conducted to determine the effectiveness of the mobile game. The formula and the process of getting the numeracy level and the frequency and the percentage of the students is shown below.

(80 – 100)%	Numerates
(50 – 79.95)%	Instructional
(0 – 49.95) %	Non-numerates

PERCENTAGE

$$P = \frac{\text{Number of the Perceived respondents} \times 100\%}{\text{Number of Respondents}}$$

Also the researcher used a likert scale to determine how the mobile game get their interest

Likert Scale Description	Likert-Scale	Likert-Scale Interval
Strongly Agree	1	1.00-1.80
Disagree	2	1.81-2.60
Neither agree/disagree	3	2.61-3.40
Agree	4	3.41-4.20
Strongly Agree	5	4.21-5.00

Further treatment the researcher used a weighted to calculate the average value of the data. The formula of the weighted mean shown below.

WEIGHTED MEAN

$$WM = \frac{Esf}{N}$$

WM = weighted mean

Esf = sum of scale and frequency

N = number of cases.

RESULT

RESULTS (Analysis and

Interpretation)

STUDENT	A1	REMARKS	A2	REMARKS	A3	REMARKS
A	59	INSTRUCTIONAL	19	NON-NUMERATES	4	NON-NUMERATES
B	62	INSTRUCTIONAL	30	NON-NUMERATES	19	NON-NUMERATES
C	57	INSTRUCTIONAL	56	INSTRUCTIONAL	33	NON-NUMERATES
D	100	NUMERATES	29	INSTRUCTIONAL	30	NON-NUMERATES
E	96	NUMERATES	41	NUMERATES	20	NON-NUMERATES
F	43	NON-NUMERATES	9	NON-NUMERATES	19	NON-NUMERATES
G	76	INSTRUCTIONAL	11	NON-NUMERATES	23	NON-NUMERATES
H	70	INSTRUCTIONAL	26	NON-NUMERATES	22	NON-NUMERATES
I	98	NUMERATES	18	NON-NUMERATES	14	NON-NUMERATES
J	45	NON-NUMERATES	34	NON-NUMERATES	18	NON-NUMERATES
K	100	NUMERATES	19	NON-NUMERATES	19	NON-NUMERATES
L	68	INSTRUCTIONAL	25	NON-NUMERATES	10	NON-NUMERATES
M	96	NUMERATES	42	NON-NUMERATES	42	NON-NUMERATES
N	64	INSTRUCTIONAL	37	NON-NUMERATES	23	NON-NUMERATES
O	78	INSTRUCTIONAL	39	NON-NUMERATES	14	NON-NUMERATES
P	98	NUMERATES	15	NON-NUMERATES	15	NON-NUMERATES
Q	70	INSTRUCTIONAL	17	NON-NUMERATES	31	NON-NUMERATES
R	38	NON-NUMERATES	19	NON-NUMERATES	26	NON-NUMERATES
S	45	NON-NUMERATES	15	NON-NUMERATES	12	NON-NUMERATES
T	43	NON-NUMERATES	19	NON-NUMERATES	16	NON-NUMERATES

STUDENT	S1	REMARKS	S2	REMARKS	S3	REMARKS
A	54	INSTRUCTIONAL	17	NON-NUMERATES	15	NON-NUMERATES
B	55	INSTRUCTIONAL	16	NON-NUMERATES	12	NON-NUMERATES
C	62	INSTRUCTIONAL	27	NON-NUMERATES	22	NON-NUMERATES
D	76	INSTRUCTIONAL	36	NON-NUMERATES	11	NON-NUMERATES
E	89	NUMERATES	55	INSTRUCTIONAL	18	NON-NUMERATES
F	41	NON-NUMERATES	19	NON-NUMERATES	11	NON-NUMERATES
G	68	INSTRUCTIONAL	12	NON-NUMERATES	0	NON-NUMERATES
H	50	INSTRUCTIONAL	29	NON-NUMERATES	20	NON-NUMERATES
I	98	NUMERATES	34	INSTRUCTIONAL	23	NON-NUMERATES
J	33	NON-NUMERATES	10	NON-NUMERATES	7	NON-NUMERATES
K	94	NUMERATES	40	NON-NUMERATES	97	NUMERATES
L	50	INSTRUCTIONAL	19	NON-NUMERATES	20	NON-NUMERATES
M	96	NON-NUMERATES	31	NON-NUMERATES	26	NON-NUMERATES
N	33	NON-NUMERATES	22	NON-NUMERATES	6	NON-NUMERATES
O	38	NON-NUMERATES	18	NON-NUMERATES	12	NON-NUMERATES
P	94	NUMERATES	0	NON-NUMERATES	0	NON-NUMERATES
Q	51	INSTRUCTIONAL	30	NON-NUMERATES	16	NON-NUMERATES
R	35	NON-NUMERATES	12	NON-NUMERATES	14	NON-NUMERATES
S	34	NON-NUMERATES	21	NON-NUMERATES	16	NON-NUMERATES
T	33	NON-NUMERATES	22	NON-NUMERATES	15	NON-NUMERATES

The table above shows the numeracy level of grade three learners in Tubigan Elementary School

The numeracy level of the Grade 3 pupils in Tubigan Elementary School in addition and subtraction A1-3 and S1-3 are very poor except in A1. In among twenty participants (20) six (6) students are numerates and nine (9) are instructional while in the S1 level four (4) of the students are numerates and 7 are instructional. The results proves that the learners strongly need a focus in studying addition and subtraction equation.

	SA	A	NA/D	D	SD
q1	80.0 0%	20.0 0%			
q2	80.0 0%	20.0 0%			
q3	80.0 0%	20.0 0%			

q4	75.0 0%	25.0 0%			
q5	70.0 0%	30.0 0%			

The table above shows the responses of the respondents about the Interest of the learners in solving addition and subtraction equation in terms of satisfaction

Over all the respondents response in the question of how mobile games caught the interest of the learners in solving simple addition and subtraction equation in terms of satisfaction with the high percentage of 80 with the verbal interpretation of Strongly Agree as per question number 1, 2 and 3.

	SA	A	NA/ D	D	SD
q1	70.0 0%	20.0 0%	5.00 %		
q2	55.0 0%	40.0 0%		5.00 %	
q3	60.0 0%	35.0 0%	5.00 %		
q4	40.0 0%	55.0 0%	5.00 %		
q5	55.0 0%	40.0 0%	5.00 %		

The table above shows the responses of the respondents about the Interest of the learners in solving addition and subtraction equation in terms of effectivity

Over all the respondents response in the question of how mobile games caught the interest of the learners in solving simple

addition and subtraction equation in terms of effectivity There are 70 percent of the sampling said that they love to learn addition and subtraction through this game because it is attractive as per the question number 1 while 40 percent said that they learned more how to solve addition and subtraction effectively as per the question number 4.

	SA	A	NA/ D	D	SD
q1	65.0 0%	35.0 0%			
q2	30.0 0%	70.0 0%			
q3	65.0 0%	35.0 0%			
q4	35.0 0%	65.0 0%			
q5	40.0 0%	60.0 0%			

The table above shows the responses of the respondents about the Interest of the learners in solving addition and subtraction equation in terms of development and improvement.

Over all the respondents response in the question of how mobile games caught the interest of the learners in solving simple addition and subtraction equation in terms of development and improvement there are 65 percent of the sampling said that mobile game help them to improve their mental math as per question number 1, while

30 percent said that This mobile game motivated them to understand the addition and subtraction further as per question number 2.

Thank you very much. This research is dedicated to all of you. Thank you very much. This research is dedicated to all of you.

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The researcher wishes to express his deepest appreciation and gratitude to the following persons for their invaluable contributions which led to the completion of this study:

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