

TARAKI: Think and Arrange , Read and Acquire knowledge through Interactive games

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I. EXECUTIVE SUMMARY

TARAKI stands for “Think and Arrange, Read and Acquire Knowledge through Interactive games”, a hands-on game utilized in classroom for reading intervention. It aims to enhance the reading fluency of struggling readers from a frustration to an independent level of performance, along with improving numeracy skills of the learners.

The game comprises three levels: the pico-sound game, the word blend game and the word math scrabble, which are implemented during remedial instruction. The beneficiaries of the innovation were 14 males and 6 females with reading difficulty on Consonant Vowel Consonant Vowel (CVCV) words and even letter sounds.

The activities within TARAKI innovation involve creating blend sounds and words from learners’ vocabulary, except for the picto-sound game, where learners identify the initial sound of the picture to come- up with the blend sound. The intervention sessions were scheduled every Monday, Wednesday and Friday for the picto-sound game and every Tuesday and Thursday for word blend and word math scrabble.

Based on the Teacher Made Assessment posttest result, 13 can read paragraphs with no errors, and 7 pupils misread one to seven words. Phil- iri posttest result, 18 pupils were under instructional level, 1 pupil was independent, and 1 pupil was frustrated with 89%-word recognition. FLAT result, 14 pupils can read paragraphs, 4 pupils can read stories, 2 can read words.

Notably, 20 pupils can add and subtract 2 digits by two-digit numbers in picto- sound game, blend word game and word math scrabble game without supervision.

With this, through working on the blend sound game, blend word game and word math scrabble, the 20 grade 2 pupil-beneficiaries can read words and paragraphs as well as they can add and subtract 2-digit numbers mentally.

II. INTRODUCTION AND JUSTIFICATION

In today’s context, proficiency in reading and numeracy skills is essential. As stated by Kangan (2021), obtaining an acceptable level of literacy and numeracy can greatly improve academic achievements.

This emphasis on the literacy is underscored by Reutzler & Cooler (2010), who assert that reading is the skill that permits learners to understand the meaning of written and it is a means of communication and language acquisition, sharing ideas and information. Competence in reading equips learners with the ability to communicate effectively, generate ideas and grasp information.

Similarly, numeracy, defined as the aptitude to utilize and comprehend numbers, play a pivotal role in enhancing academic performance, as highlighted by Kurr (2021). This is because Mathematics cultivates logical thinking and reasoning skills among learners thus, it improves and sustains academic achievements.

However, the current scenario presents that reading and solving simple mathematics are major challenges of every teacher due to the disruptions of covid 19 to the education system over the past two years, there have already substantial losses and inequalities in learning. Pupils were not ready on their grade-level because most of the learners have lost substantial instructional time. Self- Learning Modules and other supplementary materials such as teacher- made videos, and downloaded videos were provided but this has been a very poor substitute to face to face learning.

Based on the pre reading assessment result using the Teacher Made Reading Assessment Tool, it was found that there were 14 males and 6 females who cannot read letters, blends and CVCV. On the Phil- Iri result, there were 5 pupils under non- reader, and 15 on frustration level; from the FLAT result, there were 2 pupils under letter level, and 18 pupils on word level. They interchanged the sound of the letters. Besides, in numeracy, pupils interchanged subtraction and addition. One factor might be no mathematical mastery of the concepts and reading foundation.

In response to these challenges, the TARAKI (Think, and Arrange, Read and Acquire Knowledge through Interactive games) approach was conceptualized as remedial tool for reading and numeracy enhancement. The innovative method involves forming a new word from the existing letter and blending sound with simple addition and subtraction computation. The letter or blend sound could be added before and after the letter, blend sound or word if possible.

Besides, through TARAKI, the reading ability of the learners was improved as well as their numeracy skills. The learners can read the words by forming them and they can perform addition and subtraction independently. Based on the post-test, the 20- pupil beneficiaries can read words as well as paragraphs and they can add and subtract 2 digits numbers correctly.

Taken together, the TARAKI approach realized that reading, adding, and subtracting becomes meaningful, enjoyable, fun, easier, and become possible.

III. GOAL AND OBJECTIVE

The innovation aimed to improve the reading performance of the grade 2 pupils of Bahong Elementary School. The objectives are the following:

1. to improve the reading fluency of the learners,
2. to develop the reading ability of the learners.
3. to increase the reading skills of the learners at frustration to instructional level, and
4. to develop mastery in addition and subtraction.

IV. PROJECT TARGET AND BENEFICIARIES

Project Target: At the end of the intervention using the TARAKI, the 14 males and 6 females who cannot read letter sounds, blend words and CVCV words can read the words and even sentences fluently.

Project Beneficiaries: The beneficiaries of this project were 14 males and 6 females who struggled in reading letter sounds, blend words and CVCV words. The struggling readers used the reading level games to address their reading gaps due to covid 19 pandemic.

V. PROJECT DESCRIPTION

TARAKI was specifically crafted for struggling reader, implemented during remediation sessions conducted in groups. The teacher organized players based on their reading level, ensuring that, each player had their mat, chips/ tiles and scoring sheet before the game commenced.

The game did have winners, but they were determined by earning the necessary points set for different reading games. For instance, in literacy, the required points were 20 blend sound words for the picto-sound game, and 10 blend words for the blend word game. Throughout the gameplay, the players recorded their scores and then vocalized the words they formed.

interestingly, in numeracy context, the winners were those who accumulated 200 points in the Picto- sound game and 250 points in the Blend Word game. However, in the Word Math Scrabble, there were no specific points and no number of words formed; instead, winners were determined by achieving

the highest scores. Players' scores were computed by themselves with minimal supervision of the teacher but adhering strictly to Color coding rules: Yellow for addition, and blue for subtraction.

During the game play, the players applied suitable mental strategies for adding and subtracting. At the conclusion of each session, winners were awarded a winning ribbon, and occasionally, a prize. For the losers, they received "Do next time clap" for encouragement.

The reading game materials were made of 200gsm special paper placed into a certificate holder (mat). The chips and tiles were made of 250 gsm photo paper and then covered by transparent scotch tape. The game was composed of three sets game. Pictosound game was the first set which called level 1. It had letter chips with 1x1 inch dimension and a mat with 12x8.5 inches dimension. The chip had number at the upper right of the letter according to alphabetical order. The mat was like a chessboard. There was a separate picture compilation of beginners and proficient. The players identified the initial sound of the picture being flashed by the curator.

The second set was the blend word game which called level 2, composed of blend sound chips with 1.30x1.25 inches dimension and mat with 12x8.5 inches dimension. The chip had a number at the upper right of the blend sound (the number is skipped by 5). The player formed a word from their blended sound chips using the mat. It could be read diagonally (left-right), vertically (top-bottom only), and horizontally (left- right)

The last set was the word math scrabble, the last level of the game. The player used the blend sound tile with 2.5X2.25 inches dimension to form a new word horizontally (left- right) or vertically (top-bottom).

VI. Project Implementation Plan

The Project Implementation plan was composed of the start-up phase, Implementation phase and completion phase.

Table 1 presents the project implementation plan

Table1. The Project Implementation Plan

Activities/ Tasks/ per Activity	Individual Group responsible	MOV's	Time Frame (Specific Dates)
Start-up Phase			
1. Preparation of the innovation proposal and pretest and posttest questionnaire	Proponent	Project proposal draft	August 1, 2022
2. Submission of the innovation proposal to the Reviewer.	Proponent	Project proposal draft	August 3-22,2022
3. Incorporation of the comments and suggestions from the reviewer.	Proponent	Project proposal	August 22, 2022
4. Preparation of the innovation materials	Proponent	Pictosound game, and Blend sound word mat, letter and blend sound chips, blend sound tiles and picture compilation	November 2- December 2022
Implementation Phase			
1. Distribution of the pretest questionnaire to the participants	Proponent Pupils		January, 2023- July 2023
2. Implementation of the innovation a. Blend sound activity b. Blend word Activity	Proponent	Actual results (Scoring Sheets Results)	July 3, 2023

c. Word math scrabble	pupils		
3. Distribution of the posttest questionnaire to the participants			
Completion Phase			
1. Preparation of Terminal Report	Proponent	Actual Accomplishments	November 18, 2023
2. Submission of the terminal report to the reviewer.	Proponent	Final accomplishment report	December 21, 2023
3. Incorporation of the comments and suggestions	Proponent	Final Terminal Report	January- March 2024

VII. HIGHLIGHTS OF THE ACCOMPLISHMENT

TARAKI was implemented during the fourth quarter of the academic year 2022-2023 as part of the remediation efforts to enhance the reading and numeracy skills of the grade two pupils of Bahong Elementary School.

Various games were employed to support and nurture the reading capabilities of the struggling readers. The outcomes of this innovative approach were assessed using the reading assessment tools such as (Teacher Made Assessment, TARAKI Innovation, FLAT, and Phil-IRI).

A. Teacher Made Assessment

Teacher Made Assessment was made by the teacher concentrated on Filipino to test the reading ability of the struggling readers under the Letter Level with 26 letter sounds, Word Level with 30 blend sounds, Sentence Level with 30 words, and Paragraphs Level with 10 passages. The participants read the words orally.

Table 2 presents the Teacher Made Assessment pretest and posttest results.

Table 2. The Teacher Made Assessment Pretest and Posttest Results.

Reading Level (Filipino)	No. of Beneficiaries		Remarks
	Pretest	Posstest	
Letter Level	5	0	The 19 pupil- beneficiaries under paragraphs Level and 1 pupil under sentences Level
Word Level	15	0	
Sentence level	12	1	
Paragraph Level	6	19	
Total	20	20	

The results show that there was an increase in the reading level of the pupils. 6 pupils can read in the pre-test but 19 in the posttest. This implies that pupils exposed to varied games such these picto-sound, blend word and word math scrabble games had improved reading and numeracy skills.

B. TARAKI INNOVATION

TARAKI Innovation was a tool measuring the performance of struggling readers based on games. These are picto- sound, Word blend and word math scrabble game. The three levels of games were used to facilitate learning at the same time to measure numeracy skills.

Table 3 presents the TARAKI Innovation pretest and posttest results.

Table 3. The TARAKI Innovation Pretest and Posttest Results.

Reading Level	No. of Beneficiaries		Remarks
	Pretest	Posstest	
Level 1: Picto- sound game	5	0	One pupil is under word blend game and 19 pupils are under word Math Scrabble
Level 2: Word blend game	8	1	
Level 3: Word Math scrabble	7	19	
Total	20	20	

Results show that almost all the participants can play Word Math Scrabble. This means that the participants can form blend sounds and even words. Besides, by forming the blend sound and the words, mathematical operations were integrated. They can add and subtract. This is because all participants were monitored, and scores were checked after the session. Thus, the increase of pretest to posttest evidently validated the claim that the participant's reading ability had improved.

C. FLAT

The Functional Literacy Assessment Tool was used to measure the highest level of reading skills of the learners. This contains the Letter Level, Word Level, Paragraph Level, Stories Level and Stories with Comprehension Level.

Table 4 presents the FLAT pretest and posttest results.

Table 4. FLAT Pretest and Posttest Results.

Reading Level	No. of Beneficiaries		Remarks
	Pretest	Posstest	
Letter Level	2	0	2 pupils under word Level, 14 pupils under Paragraph Level, and 4 pupils under stories
Word Level	18	2	
Paragraph Level	0	14	
Stories	0	4	
Stories with comprehension	0	0	
Total	20		

The results show that there were improvements in the reading ability of the participants. The results imply that all participants can read words and some of them can read paragraphs and stories. The increase of the Reading Level of the participants evidently validated the claim that the reading ability of the participants was developed.

D. Phil-IRI

The Philippine Informal Reading Inventory was used to measure and describe the reading performance of participants in Filipino. The reading Levels of this tool are non- reader level, frustration level and independent level.

Table 5 presents the Phil-Iri pretest and posttest Results.

Table 5. The Phil-Iri Pretest and Posttest Results.

Reading Level	No. of Beneficiaries		Remarks
	Pretest	Posstest	
Non- reader	5	0	1 pupil under frustration with 89% word recognition; 18 pupils under Instructional Level with 94% and above word recognition; and 1 pupil under independent
Frustration Level	15	1	
Instructional Level	0	18	
Independent	0	1	
Total	20		

The results show that there was an increase in the reading capacity of the participants. Most of the participants got 94% and above word recognition. With this, the increase of pretest and posttest validated the claim that the participants improved at frustration to instructional level.

Taken together, I found that it greatly helps improve the reading and numeracy skills of the learners.

VIII. SUSTAINABILITY PLAN

Since the innovation can improve the literacy and numeracy skills of the pupils, the proponent plans to disseminate the innovation in the district and in the other Districts as well. Also, it was planned to be used during reading remediation in the class.

Activities, role of the stakeholder, resources needed and support for the stakeholder are enumerated in the sustainability plan below.

Table 2: The Sustainability Plan

Activities	Role of stake holders	Resource needed	Support for stakeholder
1. Training and coaching to caseworkers	Provides training and coaching to the caseworkers	Picto-sound game, and Blend sound word mat, letter and blend sound chips, blend sound tiles and picture compilation (beginners and proficient)	Sustainability fund
2. Adaptability of the innovation	Provides school classroom competition.	Reward: Prizes, medals, and certificates	Sustainability fund
3. Disseminate the learning innovation	Help on the dissemination	Travel expenses	Allow the proponent to disseminate

IX. BUDGET ACTUALIZATION

The actual budget for the innovation was 1, 623 funded by the school MOOE. This covers the start-up phase, implementation phase and completion phase. These were bond paper, special paper, photo paper, transparent scotch tape, certificate holder, pen, and other papers.

Activities, resources needed, fund sources were indicated in the actual budget below.

Table 3: The Actual Budget

Activities/Task per activity	Needed Resources	Cost			Fund source		
		Qty	Unit cost	Total	MOOE	PTA	Others
. 1. Preparation of the innovation proposal and pretest and posttest questionnaire	Yellow Paper	1	35.00	35.00	✓		Personal fund
	pen	1					
2. Submission of the innovation proposal to the Reviewer.	Bond paper	15 pcs	20.00	20.00	✓		

3. Incorporation of the comments and suggestions from the reviewer	Bond paper	15 pcs.	15.00	20.00	✓	
	Epson ink	1 set	350.00	350.00		
4. Preparation of the innovation materials	A4 Special paper (200 GSM)	1 pack	100.00	100.00	✓	
	A4 Photo paper 180 gsm	3 packs	85.00	255.00		
	Certificate holder	6 pcs	36.00	216.00		
	Transparent scotch tape	1 pc	46.00	46.00		
B. Implementation Phase						
1. Distribution of pretest questionnaire to the participants	bond paper	½ ream	230.00	230.00	✓	
2. Implementation of the innovation a. Blend sound activity b. Blend word Activity c. Word math scrabble	Bond paper	1 pack	20.00	20.00	✓	
2. Distribution of the posttest questionnaire to the participants	bond paper	½ ream	230.00	230.00	✓	
C. Completion Phase						
1. Preparation of Terminal Report	Ballpen	1	25.00	25.00		
	Paper	1	36.00	36.00	✓	
2. Submission of the terminal report to the reviewer	Bond paper	1 pack	20.00	20.00	✓	

3. Incorporation of the comments and suggestions	Bond paper	1 pack	20.00	20.00	✓		
Total			1, 623.00				

X. MONITORING AND EVALUATION

The school head monitored the intervention process of the TARAKI innovation. In the evaluation, the 20- pupil beneficiaries can read words, phrase, and paragraphs, and they can add and subtract 2- digit numbers mentally.

Activities/ Task per activity	Physical Targets			Time Targets		
	Target	Actual Result	Percent Accomplished	Target of date Monitoring	Actual Date Monitoring	Remarks
A. Start-up Phase						
1. Preparation of the innovation proposal and pretest and posttest questionnaire	At the end of January 2022, I was able to prepare the proposal and pretest and posttest questionnaire	Prepared the innovation proposal, pretest and posttest questionnaire	100% Accomplished	Feb. 18, 2022	August 1, 2022	The innovation was successfully submitted and approved by the Division Office
2. Submission of the innovation proposal to the Reviewer.	At the end of March 2022, I was able to submit the innovation proposal to the reviewer	Submitted the innovation proposal to the reviewer	100% Accomplished	May 21, 2022	August 3-5, 2022	
3. Incorporation of the comments and suggestions from the reviewer.	At the end of July 2022, I was able to incorporate the comments and suggestions from the reviewer	Incorporated the comments and suggestions from the reviewer	100% Accomplished	August 21, 2022	Oct. 22, 2022	
4. Preparation of the innovation materials	At the end of December 2022, I was able to prepare the innovative materials	Prepared the innovative materials		Oct- Dec. 2022	Jan. 8, 2022	

			100% Accomplished			
B. Implementation phase						
1. Distribution of the pretest questionnaire to the participants	At the January 10, 2023, I was able to distribute the pretest to the participants	Distributed the pretest questionnaires to the participants	100% accomplished	Jan. 10, 2023	January 15, 2023	The innovation was implemented to the struggling readers and it improves the reading capacity of the learners as well as numeracy skills specifically subtraction and addition
2. Implementation of the innovation a. Blend sound activity b. Blend word Activity c. Word math scrabble	At the end of June 2023, I was able to implement the innovation	Implemented the innovation successfully	100% accomplished	Feb.8, 2023	June 28, 2023	
3. Distribution of the posttest questionnaire to the participants	At the July 3, I was able to distribute the posttest questionnaire to the participants	Distributed the posttest to the participants	100% accomplished	Jul. 3,2023	July 3, 2023	
C. Completion Phase						
1. Preparation of Terminal Report	At the end of July 2023, I was able to prepare the Terminal report	Prepared the terminal report	100% accomplished	August 7, 2023	November 7, 2023	Successfully submitted the Accomplished reports
2. Submission of the terminal report to the reviewer.	At the end of September, I was able to submit the Terminal Report to the reviewer	Submitted the terminal report to the reviewer	100% accomplished	October 24, 2023	November 20, 2023	

<p>3. Incorporation of the comments and suggestions</p>	<p>At the end of December 2024, I was able to incorporate the comments and suggestions from the reviewer.</p>	<p>Incorporated the comments and suggestions</p>	<p>100% accomplished</p>	<p>Nov. 17, 2023</p>	<p>February 12, 2024</p>	
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Reference

Division Memo No. 143 s. 2019. Guidelines for Innovation projects

Tabayoyong, J.M. (2012). Math Arithmethink (Math Scrabble)

