Enhancing Literacy Competencies in Grade 3 Pupils: A Comparative Study of Contextualized Digital Strategic Intervention Materials (CDSIM) Delivery Modalities

Larry M. Roallos EdD [a*]

[a] *Department of Education, School Principal III, Malainin Elementary School, Philippines.*

Author's contribution

The sole author designed, analysed, interpreted and prepared the manuscript.

Original Research Article

ABSTRACT

Aims: To assess the effectiveness of CDSIM in enhancing the literacy competencies of Grade 3 pupils.
Study Design: The study used a quasi-experimental pre and post-test design to evaluate the literacy levels and reading scores of the pupils before and after using the intervention materials.
Place and Duration of Study: Tulay Elementary School, Ibaan District, Division of Batangas, between February to October 2023.
Methodology: The study involves three phases in identifying the effectiveness of using CDSIM using the online and offline modalities: literacy profiling, utilization of CDSIM, and evaluation of

_____

*Corresponding author: Email: larry.roallos@deped.gov.ph;

effectiveness. Seventeen Grade 3 pupils purposively selected utilized the online LMS version of the materials and the same number of pupils who were randomly selected used the offline slide decks intervention modality.

Results: Most of the Grade 3 pupils can read simple stories with 4 to 5 sentences fluently with comprehension in both delivery modalities after using the intervention materials. Also, the pupils improved their literacy scores in the posttest from an average score of 24.35 to 28.59 in the online modality and from 21.47 to 25.59 mean scores in the classroom-based modality. There was a significant difference between the literacy levels of pupils who used the LMS home-based modality before (M=4.11; SD=1.32) and after using CDSIM (M=4.76; SD=0.83); (t (16) = -2.52; P=.02). There was a significant difference between the literacy scores of pupils who used the LMS home-based modality before (M=24.35; SD=7.57) and after using CDSIM (M=28.59; SD=5.70); (t (16) = -3.30; P=.00). There was no significant difference between the literacy levels of Grade 3 pupils after using CDSIM under the home-based modality (M=4.47; SD=0.87) and after using slide decks classroom-based modality (M=4.76; SD=0.83); (t (32) = -1.00; P = .32).

Conclusion: The story level literacy of the Grade 3 pupils before the intervention improved to the story comprehension level after utilization of CDSIM. The differences between the literacy levels and reading scores of pupils before and after using CDSIM separately in the two intervention delivery modalities were significant, indicating that CDSIM is an effective material for literacy enhancement. Although there was no significant difference between the pupils' literacy performance levels in the two delivery modalities, both modalities can be used to positively affect reading performance.

1. INTRODUCTION

Analogous to the value of education is the increasing attention towards literacy. It is a basic skill necessary to attain other skills. Literacy skills allow learners to understand important concepts, improve academic performance, and function effectively in a global society. According to Howley-Rouse [1], the foundation of a student's ability to access the full range of the curriculum and perform well across it is literacy, which is crucial for academic success.

The improvement of literacy rates is a fundamental goal of the Department of Education in the Philippines. It is anchored on the department's flagship program "Every Child a Reader Program'. Integrating literacy skills across subjects and grade levels is one of the many ways that DepEd regularly reviews and updates the national curriculum to make sure that it reflects the shifting needs of students and society. Early childhood education is given top priority by DepEd, which provides initiatives like Kindergarten and the Early Language, Literacy, and Numeracy Program (ELLN) to get kids ready for reading and writing. DepEd has launched several reading initiatives, including Brigada Eskwela and National Reading Month, which encourage community participation in fostering literacy and supplying reading materials to schools with collaboration from different stakeholders.

Based on the 2019 Functional Literacy, Education and Mass Media Survey, the Philippines' functional literacy rate of the population from 10 to 64 years old is 98.04. However, according to the World Bank's most recent data on learning poverty in 2021, at least nine out of ten Filipino children aged 10 struggle to read and write simple text; the nation also came in last among the 79 nations that took part in a 2018 international reading literacy assessment [2]. This data shows that almost 90 percent of Grades 4 and 5 learners who are commonly 9 to 10 years old had reading difficulties [3].

In the 2019 National Report of the Philippines on Southeast Asia Primary Learning Metrics, it was found that most Filipino Grade 5 students can fluently read various everyday texts such as simple narratives and personal opinions and are beginning to comprehend their meaning. Approximately 63% of Grade 5 students met the expected reading proficiency level at the end of lower primary education. However, over 25% of Grade 5 students fell into the lowest proficiency band in reading literacy, indicating potential challenges in transitioning to more advanced reading. Only 10% of Grade 5 students were able to meet the reading proficiency level at the

end of primary education, where they could identify relationships between words and their meanings. Additionally, the UNICEF report noted that less than 15% of schoolchildren were able to read simple texts, largely due to the 70-week pandemic-related school closure [4].

In a report published by the World Bank in July 2022, it was revealed that nine out of ten Filipino children aged 10 struggle to read simple texts. This places the Philippines among the nations with the highest rate of "learning poverty" in the East Asia and Pacific region and among lower-middle-income economies. The World Bank defines students in Grades 4 and 5 who are unable to read and comprehend brief, age-appropriate texts as learning-deprived. The report estimates that up to 91 percent of children in the nation at late primary age "are not proficient in reading" [5]. These alarming data have prompted the researcher to examine the state of literacy in his school.

During the 2022-2023 school year, approximately one-third of the grade three students at Tulay Elementary School achieved a paragraph level of reading, which was like the number of students who reached the story level. The percentage of students who could comprehend a story was only 20% of the total. Additionally, nine students could only read letters, and 17 students could read words but not stories. Unfortunately, none of the students reached the level of comprehension of local materials. To address this, the school's reading program aims to enhance these reading indicators using contextualized digital strategic intervention materials (CDSIM).

As stated in the Reading Literacy Program in the Elementary Schools | Department of Education [6] the policy that school children are readers by Grade 3 and that no child be promoted to Grade 4 unless he shows mastery of the basic literacy skills are enforced. It is thus assumed that all grade three learners must possess functional literacy in their grade level. Tulay Elementary School supports this policy and developed strategic intervention materials (SIM) to provide remedial activities for pupils with reading difficulties.

Considering the impact of these materials on teaching fundamental skills across various subjects, the researcher spearheaded the creation of contextualized digital strategic intervention materials (CDSIM) to enhance literacy among Grade 3 pupils. Roallos [7]

contributes to existing literacy theories by demonstrating how CDSIM can aid elementary learners in progressing from basic literacy skills to story comprehension. His study emphasizes the significance of context and digital resources in literacy development. According to the literature review, there have been no prior studies on the effectiveness of CDSIM. Therefore, this study was conducted to assess its effectiveness for pupils who have not yet attained a higher level of functional literacy.

Several researchers recognized the SIM as vital instructional material to improve the pupils' achievement in various learning areas. Sinco [8] suggested that using SIM in teaching the identified least learned concepts helped the students achieve higher scores after gaining satisfactory level performance of the Grade 6 students. In Mathematics, Arpilleda [9] concluded that the strategic intervention materials had a positive impact on mastering the identified least-learned competency as reflected in the post-test results of the two groups. The study noted significant differences in the level of performance of Grade 9 students. However, this study used the SIM in printed format while the present study deals with the utilization of digital materials available in the learning management system and slide decks format.

Strategic Intervention Material can also be used in remediation classes in English focusing on developing the least mastered skills of the students. Cordova [10], in her study, concluded that the learners were able to combine logical ideas and sentences with the appropriate use of logical connectors, which led to their excellent performance. In addition, learners were able to develop their passion for reading. The author observed that the learners were enjoying and learning as they went along with the SIM. In this case, the learners had already developed and improved their least mastered skills. Similarly, the present study explored the most essential learning competencies to enhance the pupils' reading skills from basic to functional literacy levels.

In teaching grammar with SIM to Grade 9 students, Dumape [11] observed that there was a significant difference between the pretest and post-test scores and the overall post-test result for the control group remained at the intermediate level, while the experimental group improved to the advanced level. Therefore, the findings of this study indicate that Strategic

Intervention Material (SIM) plays an important role in the present and future education of this generation. This study also used the pre-and post-test design to compare the achievements of the pupils in the CDSIM delivery modalities. The difference is both groups in this study used CDSIM which makes the study interesting.

2. LITERATURE REVIEW

2.1 Innovation, Intervention or Strategy

The Department of Education in the Philippines promotes the utilization of Strategic Intervention Material (SIM) as an educational resource or teaching tool specifically designed to enhance the teaching and learning process. As a multifaceted approach to help pupils become independent and successful learners, Strategic Intervention Material is instructional material designed to re-teach the least mastered concepts and skills. It is materials given to the learners to help them master a competency-based skill that they were not able to develop during regular classroom teaching. It consists of both learning strategies and content enhancement routines [12].

The sections of the intervention materials are the same as the printed learning resources. The content and activities of the proposed materials are segmented into several parts such as cover page, title page, guide card, activity card, assessment card, enrichment card, answer key card, reference card, and back cover [13]. The different parts are laid out on slide decks with an audio-visual enhancement for the interactive presentation. The CDSIM complies with the DepEd standard segments of the intervention material. The guide card motivates the learners and provides a preview of the competency. The activity card presents at least three learning tasks. The assessment card contains the practice exercises and application of the skills that will enable the students to check and monitor their learning of the competency. The enrichment card reinforces the application of skills to new situations. The reference card suggests several references for further study [14].

Each intervention material is different from the common printed SIM or e-copy available in Word or PDF format. The CDSIM has been contextualized and made in a slide presentation to make it more appealing, engaging, and interactive with the learners. The researcher contextualized the intervention materials adapting the themes derived from the previous study on the development and validation of CDSIMs conducted by Roallos [7]. The topic and the corresponding themes are stated below:

Table 1. CDSIM topics and corresponding themes

Contextualized Digital Strategic Intervention Materials	Theme
1. The Sounds You Hear	Domestic Animals
2. Learning the Alphabet and Associate Phonemes (s, a, t, i, p, and n)	Nutritious Foods/
3. Learning the Alphabet and Associate Phonemes (c, k, e, h, and r)	Domestic Animals
4. Learning the Alphabet and Associate Phonemes (m, d, g, and o)	
5. Learning the Alphabet and Associate Phonemes (l, f, b, q, and u)	
6. Learning the Alphabet and Associate Phonemes (j, z, and w)	
7. Learning the Alphabet and Associate Phonemes (v, y, and x)	
8. Short Vowel Sounds in Words with CVC Pattern	Domestic Animals
9. Sight Words in Pictures	Feelings
10. Words with Medial Vowels	Leisure Time with the Family/Friendship
11. Reading and Noting Details	History of Ibaan
12. Reading with Long Vowel Sounds and Noting Details	
13. Reading Words with Initial and Final Consonant Blends	Nutritious Foods
14. Consonant Digraphs	Reading and Story Telling
15. Homonyms and Homographs	Filipino Family Members
16. Inferring the Character's Feelings and Traits	Native Games
17. Character, Setting, and Events	History of Ibaan
18. Drawing Conclusions	Native Games

The CDSIM is designed to support targeted learners in advancing through various learning activities at their own pace or through guided intervention. In the online delivery modality, the child can access the materials through the school Learning Management System (LMS) and their progress at home. The parents facilitated the guided set-up. Another delivery modality is through interactive slide decks facilitated by the teacher in the classroom during remedial time.

Through the learning facilitators and independent study, the learners explore the topics from the sessions on sounds, learning the alphabet, letter combinations, reading, and noting details to reading comprehension skills of inferring character traits, identifying the setting, characters, and events, and drawing conclusions. The learners may repeatedly answer the exercises until they master the competencies needed to become functionally literate.

3. METHODOLOGY

To assess the effectiveness of CDSIM for the literacy development of grade three pupils, the researcher employed the quasi-experimental research design using the pre-posttest method.

3.1 Participants and/or Other Sources of Data and Information

The purposive sampling identifies 17 Grade 3 pupils who utilized the online LMS version of the CDSIM. To identify pupils who participated in the utilization of the offline slide decks intervention modality, the researcher used the simple random sampling method through the Microsoft Excel sheet. Seventeen Grade 3 pupils from the two sections were electronically selected as participants in the study.

3.2 Data Gathering Methods

The study involves three phases in identifying the effectiveness of using CDSIM using the online and offline modalities. These phases are literacy profiling, utilization of intervention materials, and evaluation. Fig. 1 shows the conceptual framework that defines the flow of the study.

In literacy profiling, the researcher constructed a literacy test to identify the pupils' performance in literacy levels 1 to 6 patterned after the Functional Literacy Assessment Tool (FLAT). The researcher-made literacy test which identifies literacy scores is different from FLAT for it classifies the pupils' literacy level. The test-retest correlation of 0.95 indicates good reliability of the instrument. The researcher consulted two subject specialists in the district to validate the contents of the test. Validation reveals that the said test will be able to measure the literacy abilities of the Grade 3 pupils using the FLAT criteria.

To comply with ethical standards, the Grade 3 teachers secured parental consent to involve certain students in the study. Both parties mutually agreed to keep the students' scores confidential and to utilize their data solely for educational purposes. The teachers conducted a functional literacy assessment after the first quarter and administered a researcher-designed literacy test over two weeks.

Throughout the second quarter of the school year, the students made use of the CDSIM. Within the sample group, 17 students utilized the LMS online version of the intervention materials, while another 17 students used the offline materials already downloaded by teachers for classroom use. Students utilizing the LMS were encouraged to engage in independent learning, with the option to seek assistance from parents when working on learning tasks. Teachers conducted classroom-based interventions using television for group sessions and laptops for personalized instruction.
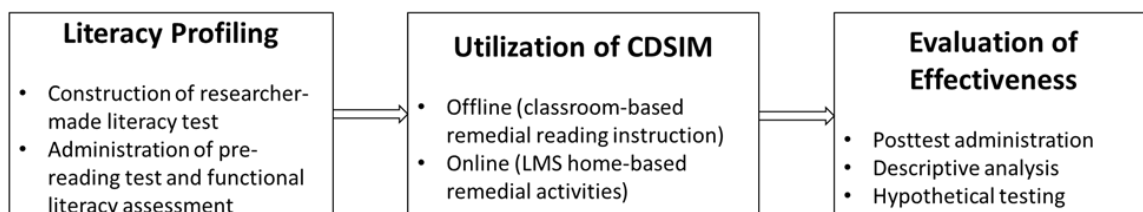

Fig. 1. Conceptual framework of the study

During the first semester, the teachers, along with the school ICT coordinator, conducted a post-test and analyzed the results. The researcher then input the scores and literacy levels into separate MS Excel sheets for further analysis. Descriptive statistical analyses such as frequency, percentage, and mean were used to analyze the literacy levels and scores. To compare the literacy scores and levels of students in both online and offline CDSIM modalities, the researcher utilized the independent samples t-test. Additionally, the independent samples t-test was employed to determine any significant differences in the post-test scores between the two CDSIM modalities. The findings from the statistical analysis were organized, presented, and interpreted accordingly.

4. RESULTS AND DISCUSSION

This section presents the results and reflections of the study. The results are accompanied by the interpretation and analysis of data that serve as bases for the reflections and implications of the study.

4.1 Literacy Levels of Grade 3 Pupils Before and After Utilization of CDSIM by Delivery Modalities.

Table 2 shows the literacy levels of Grade 3 Pupils before and after the utilization of CDSIM

by delivery modalities. The literacy data reveals that most of the pupils have story and story comprehension levels in both the pretest and post-test results.

In the LMS home-based learning model, the pupils showed improvements in literacy levels 1, 4, and 5. The percentage of students with story literacy levels decreased from 47 to 12 percent, while those with story comprehension levels increased from 41 to 82 percent. This data indicates that most Grade 3 pupils were able to fluently read simple stories with 4 to 5 sentences, demonstrating comprehension. These literacy achievements suggest that pupils can enhance their literacy skills at home with parental guidance using the school's LMS.

In the classroom setting using slide decks, most pupils achieved literacy levels 4 and 5. After utilizing CDSIM, the percentage of pupils with story comprehension decreased from 35 percent in the pre-test to 23 percent. However, the number of pupils with story comprehension levels increased from 29 to 65 percent. None of them had proficiency in letter and local material literacy. This data suggests that the offline use of CDSIM by the pupils, combined with the slide decks classroom-based delivery method, can enhance their literacy levels under the guidance of a teacher.

Table 2. Literacy levels of grade 3 pupils before and after CDSIM utilization

Literacy Level	Pretest (Before)		Post Test (After)	
	Frequency	Percentage	Frequency	Percentage
A. LMS Home-based Modality				
Level 1 - Letter	2	12	0	0
Level 2 - Common Word	0	0	1	6
Level 3 - Paragraph	0	0	0	0
Level 4 - Story	8	47	2	12
Level 5 - Story Comprehension	7	41	14	82
Level 6 - Local Material	0	0	0	0
Total	17	100	17	100
B. Slide Decks Classroom-based Modality				
Level 1 - Letter	4	24	0	0
Level 2 - Common Word	2	12	1	6
Level 3 - Paragraph	0	0	1	6
Level 4 - Story	6	35	4	23
Level 5 - Story Comprehension	5	29	11	65
Level 6 - Local Material	0	0	0	0
Total	17	100	17	100

Table 3. Mean reading scores of the grade 3 pupils before and after CDSIM utilization

CDSIM Delivery Modalities	Pre-Test Mean Score	Post-Test Mean Score
LMS Home-based Modality	24.35	28.59
Slide Decks Classroom-based Modality	21.47	25.59
Average	22.91	26.42

Table 4. Difference between the literacy levels of pupils before and after using CDSIM

CDSIM Delivery Modalities	Mean (Pretest/Post Test)	SD (Pretest/Post Test)	df	t-statistic	P-value*	Decision on the H_0	Interpretation
LMS Home-based Modality	4.11 4.76	1.32 0.83	16	-2.52	.02	Reject	Significant
Slide Decks Classroom-based Modality	3.35 4.47	1.62 0.87	16	-4.15	.00	Reject	Significant

4.2 Comparative Reading Scores of the Grade 3 Pupils Before and After CDSIM Utilization by Delivery Modalities

Table 3 presents the pre and post-test reading scores of the Grade 3 pupils by CDSIM delivery modalities. As can be gleaned from the table, the mean scores of pupils have improved in the posttest.

The scores explicitly show that the mean scores of the pupils using the CDSIM in LMS home-based modality are greater than the mean scores upon using the slide decks classroom-based modality in both the pretest and posttest. This difference can be justified by the fact that the home-based modality is facilitated on an individualized strategy while the classroom-based modality is facilitated by groups of learners in the classroom. More attention is given to an individual pupil's reading miscues in the LMS than the group approach.

Also, the pupils improved their literacy scores in the posttest from an average score of 24.35 to 28.59 in the online modality and from 21.47 to 25.59 mean scores in the classroom-based modality. This increase in scores reflects the effectiveness of the CDSIM in both delivery modalities. The improvements also suggest that intervention materials can be used to develop the word recognition and comprehension skills of the Grade 3 pupils.

4.3 Test of Difference between the Literacy Levels of Pupils Before and After CDSIM Utilization

A paired-sample t-test was performed to compare the literacy levels of Grade 3 pupils before and after CDSIM utilization in two delivery modalities. Table 4 shows the mean difference between the literacy levels of pupils before and after using CDSIM through LMS home-based modality and slide decks classroom-based modality.

There was a significant difference between the literacy levels of pupils who used the LMS home-based modality before (M=4.11; SD=1.32) and after using CDSIM (M=4.76; SD=0.83); (t (16) = -2.52; p=.02). Thus, the null hypothesis is rejected. These results suggest that LMS home-based CDSIM delivery modality has an effect in attaining a high literacy level of pupils. Specifically, the significant difference suggests that pupils who are provided intervention materials online through the assistance of parents, their literacy levels increase.

Similarly, there was a notable disparity in the literacy levels of students who had previously utilized traditional slide decks in the classroom (M=3.35; SD=1.62) compared to after using CDSIM (M=4.47; SD=0.87); (t (16) = -4.15; p=.00). This indicates the rejection of the null hypothesis. The average difference suggests that the approach has played a key role in enhancing the literacy levels of Grade 3 students. Moreover, this contrast implies that teachers can implement group interventions using CDSIM in the

classroom, in addition to the individualized teaching approach.

4.4 Test of Difference between the Literacy Scores of Grade 3 Pupils before and after Using CDSIM

A paired-sample t-test was conducted to compare the reading scores of the Grade 3 pupils before and after using CDSIM by delivery modalities. Table 5 presents the difference in the reading test scores.

A notable disparity was observed in the literacy scores of students who utilized the LMS home-based approach before (M=24.35; SD=7.57) and after using CDSIM (M=28.59; SD=5.70); (t (16) = -3.30; p=.00). Consequently, the null hypothesis is rejected. These findings suggest that the LMS home-based CDSIM delivery method has contributed to an improvement in students' reading scores. Specifically, the significant contrast indicates that literacy development can be effectively facilitated online, either independently by the students or with the support of home learning facilitators.

In addition, a notable disparity was observed in the literacy scores of students who utilized the slide decks classroom-based modality before (M=21.47; SD=9.42) and after using CDSIM (M=25.59; SD=6.96); (t (16) = -3.59; p=.00). This discrepancy led to the rejection of the null hypothesis. The average variance suggests that the implementation of CDSIM through the classroom-based modality has had a positive impact on the literacy scores of Grade 3 pupils. Furthermore, this dissimilarity implies that educators can enhance reading comprehension by providing interventions using CDSIM, either on an individual basis or in group settings. These findings regarding the significant difference in pre and post-test literacy scores are in line with

Arpilleda's study [9], which demonstrated the positive influence of intervention materials on mastering the identified least-learned competency, as evidenced by the post-test results of both groups.

4.5 Test of Difference between the Literacy Levels of Grade 3 Pupils after Using CDSIM in LMS Home-based and Slide Decks Classroom-based Interventions

A two-sample t-test was performed to compare the mean of the literacy levels after using CDSIM through the LMS home-based intervention and slide decks classroom-based intervention. Table 6 presents the difference between the post-test literacy levels after using the CDSIM in two delivery modalities.

There was no significant difference in the literacy levels of Grade 3 pupils after using CDSIM under the home-based modality (M=4.47; SD=0.87) and after using slide decks in a classroom-based modality (M=4.76; SD=0.83); (t (32) = -1.00; p = .32). The absence of a significant difference suggests that there is no evidence to conclude that a notable difference exists between the literacy levels of students in the two delivery modalities. This indicates that both CDSIM delivery modalities are likely to yield similar results when provided with assistance from learning facilitators and when interventions are conducted using individualized or group strategies. Utilizing CDSIM for literacy enhancement can help learners progress to the next level of reading. Dumape's study [11], where the experimental group advanced to higher reading levels using SIM, corroborates these findings. Similarly, Strategic Intervention Material (SIM) plays a crucial role in the present and future education of this generation.

Table 5. Difference between the Literacy Scores of the Grade 3 Pupils Before and After Using CDSIM by Delivery Modalities

CDSIM Delivery Modalities	Mean (Pretest/Post Test)	SD (Pretest/Post Test)	*df*	t-statistic	*P-value**	Decision on the H_0	Interpretation
LMS Home-based Modality	24.35 28.59	7.57 5.70	16	-3.30	.00	Reject	Significant
Slide Decks Classroom-based Modality	21.47 25.59	9.42 6.96	16	-3.59	.00	Reject	Significant

*Significant at .05 two-tailed test

Table 6. Difference between the mean of the post test literacy levels in two delivery modalities

CDSIM Delivery Modalities	Mean	SD	*df*	t-statistic	*P-value**	Decision on the H_0	Interpretation
LMS Home-based Modality	4.47	0.87	32	-1.00	.32	Fail to Reject	Not Significant
Slide Decks Classroom-based Modality	4.76	0.83					

*Significant at .05 two-tailed test

5. CONCLUSION

Considering the discussion of the results, it can be concluded that the story-level literacy of Grade 3 pupils improved from pre-intervention to post-intervention comprehension levels after utilizing CDSIM. The literacy scores were notably higher when the intervention was administered using the home-based CDSIM delivery method compared to the classroom-based slide deck modality. Significant disparities were observed in the literacy levels and reading scores of pupils before and after using CDSIM in the two distinct intervention delivery modalities. However, there was no significant difference in the literacy performance levels of pupils between the home-based CDSIM delivery modality and the slide decks classroom-based modality.

6. REFLECTIONS AND RECOMMENDATIONS

From the discussion of results and conclusions drawn in this study, it can be inferred that the school CDSIM is effective in enhancing the Grade 3 pupils' literacy. Both delivery modalities in helping interventions pupils raise their functional literacy levels. However, from the study sample, only one had the local material level which is the ultimate objective of using the CDSIM. Thus, this study recommends the production of additional strategic intervention materials focusing on comprehension. This research recognizes the importance of literacy skills extending beyond basic reading abilities to include critical analysis and interaction with various texts and information. It emphasizes the need for the development of educational materials that specifically target comprehension skills, as this is essential for attaining functional literacy.

The study likewise reveals that the LMS home-based delivery modality of CDSIM elicits better performance than the slide decks classroom-based modality. This implies that the teachers must concentrate more on individualized instruction in using the SIM and let the pupils explore by themselves during remedial time. However, it does not mean that LMS modality is better than using slide decks in the classroom. Both modalities must be used effectively to cater to learners with different literacy levels in class. The study acknowledges the importance of maintaining a balance between individual exploration and teacher-facilitated interventions, allowing for differentiated support based on pupils' literacy levels and their progress in using intervention materials.

The significant differences between the literacy levels and scores of Grade 3 pupils before and after using the CDSIM indicate that the intervention materials are effective in leveling up the pupils' basic literacy. It can be assumed that these CDSIM modalities cater to the diverse learning needs of pupils through differentiated interventions. The contextualization of the materials enables the pupils to connect between their learning experiences and life situations, thus promoting better comprehension and retention. Therefore, it can be recommended the utilization of the CDSIM in other grade levels for pupils with reading difficulties. Appropriate modalities must be adopted depending on the learning conditions and internet connectivity of the pupils.

The non-significant difference between the Grade 3 pupils' literacy levels in the post-test suggests that either of the two delivery modalities, online and offline, can be used to enhance reading literacy. Teachers and pupils must be given a chance to choose what fits their needs and abilities. This result elucidates the importance of providing teachers with multiple opportunities to achieve literacy skills among pupils based on their access to technology or internet connectivity. It emphasizes the principle that intervention activities must be accessible to all learners which are appropriate to needs and contexts.

For further research, the methodology of using pre and post-test design is recommended in ascertaining the effectiveness of instructional materials. The design proves to be an anchor for data-driven decision-making where measurable data are assessed because of instructional interventions. Furthermore, the study encourages using this approach to measure the effectiveness of interventions by comparing the pupils' performance before and after their implementation.

DISCLAIMER (ARTIFICIAL INTELLIGENCE)

The author hereby declares that freeware personal plans of ChatGPT and Grammarly have been used during the editing of this manuscript. This explanation will include the name, version, model, and source of the generative AI technology and as well as all input prompts provided to the generative AI technology.

Details of the AI usage are given below:

1. Checking grammar
2. Validation of study implications
3. Finding additional references

COMPETING INTERESTS

Author has declared that no competing interests exist.

REFERENCES

1. Howley-Rouse A. Literacy: Why it matters. The education hub; 2023, September 26. Available:https://theeducationhub.org.nz/literacy-why-it-matters/
2. Chi C. A new report shows the drastic economic impact of illiteracy on the Philippines. Philstar.com; 2023, April 3. Available:https://www.philstar.com/headlines/2023/04/03/2256606/new-report-shows-drastic-economic-impact-illiteracy-philippines
3. SEA-PLM 2019 National Report of the Philippines; 2021, March. unicef.org. Available:https://www.unicef.org/philippines/media/2556/file/Southeast%20Asia%20Primary%20Learning%20Metrics%202019%20National%20Report%20of%20the%20Philippines.pdf
4. De Vera B. Lockdown's impact: UNICEF cites poor reading skills among Philippine kids. ANN Asia News Network; 2022, April 1. Available:https://asianews.network/lockdowns-impact-unicef-cites-poor-reading-skills-among-philippine-kids/
5. Cagoco-Guiam R. Rays of hope. Inquirer Opinion. INQUIRER.net; 2022, September 13. Available:https://opinion.inquirer.net/156923/rays-of-hope
6. September 11, 2002 DO 45, s. 2002 – Reading Literacy Program in the Elementary Schools. Department of Education; 2002, September 11. Available:https://www.deped.gov.ph/2002/09/11/do-45-s-2002-reading-literacy-program-in-the-elementary-schools/
7. Roallos L. BRAVE Book of Abstracts 2.0: Development and Validation of Contextualized Digital Strategic Intervention Materials for Functional Literacy Enhancement of Grade Three Pupils: Vol. IV. DepEd Division of Batangas; 2022.
8. Sinco MGM. Strategic Intervention Materials: a tool in improving students' academic performance. Zenodo (CERN European Organization for Nuclear Research; 2020. Acvailable:https://doi.org/10.5281/zenodo.3870630
9. Arpilleda AJ. Strategic intervention material: A tool in enhancing grade nine students' mathematical performance. International Journal of Research Studies in Education. 2021;10(5). Available:https://doi.org/10.5861/ijrse.2021.5051
10. Cordova RC, Grace J, Medina D, Ramos TR, Alejo AR. Effectiveness of competency-based strategic intervention materials in english 7. Mendeley; 2019. https://www.mendeley.com/catalogue/62a9f33b-cbf8-3f90-b29f-ad8c54e27026/
11. Dumape JL. Utilization of strategic intervention material (SIM) In teaching grammar among grade 10 students. The International Journal of Social Sciences and Humanities Invention. 2022;9(08): 7113–7125. Available:https://doi.org/10.18535/ijsshi/v9i08.01
12. Bunagan F. SimTalk (Felix T. Bunagan) [Slide show]. SlideShare; 2014, October 20. Available;https://www.slideshare.net/slideshow/simtalk-felix-t-bunagan/40485734#8

13. Localized Policy Guidelines in Contextualizing Learning Resources. DepEd Cagayan Valley; 2019. Available:https://region2.deped.gov.ph/rm-22-s-2019-rm-22-localized-policy-guidelines-on-contextualizing-learning-resources/

14. Rodrigo R. Importance of Strategic Intervention Materials. IDOCPUB; 2015, October 12. Available:https://idoc.pub/documents/importance-of-strategic-intervention-materials-d4pqdzrvxvnp#:~:text=Importance%20of%20Strategic%20Intervention

---

Peer-review history:
The peer review history for this paper can be accessed here:
https://www.sdiarticle5.com/review-history/124715