Utilization Of Technology-Based Contextualized Storybooks & Reading Materials in Relation to The Literacy Performance of The Kindergarten Learners

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Abstract — This study is conducted to determine the extent of the Utilization of Technology-Based Contextualized Storybooks & Reading Materials in relation to the Literacy Performance of The Kindergarten Learners in Matlang Central School, in Leyte Division. The findings of the study were the bases for the proposed Intervention Plan. This study employed a descriptive-correlational research design to determine the extent of the utilization of technology-based contextualized storybooks and reading materials in relation to the literacy performance of kindergarten learners in Matlang Central School, Leyte Division. The descriptive part focused on assessing the level and frequency of use of these digital materials, while the correlational aspect aimed to identify the relationship between their utilization and the learners' literacy performance. Data were gathered using validated survey questionnaires for teachers, standardized literacy assessment tools for kindergarten pupils, and supplemented by classroom observations and relevant document analysis. The test of Relationship, which examines the correlation between the extent of the implementation of the Technology-Based Contextualized Storybooks and Reading Materials and the literacy performance of learners. The table shows the computed correlation coefficient (r), the t-value, the table value at the 0.05 level of significance, the decision on the null hypothesis (Ho), and the interpretation of the statistical result. The data show a correlation coefficient (r) indicating a very strong positive relationship between the implementation of the intervention and the literacy performance of the learners. The computed t-value is substantially higher than the critical table value leading to the rejection of the null hypothesis. This statistically confirms that there is a significant relationship between how well the technology-based contextualized reading materials were implemented and the literacy outcomes of the learners. The strength of the relationship suggests that as the implementation of the intervention improves, literacy performance among learners also increases significantly. This implies that the components of the program—such as structured guidelines, engaging techniques, appropriate resources, learner participation, and the perceived benefits—collectively contribute to the improvement in reading proficiency. The implications of these results are substantial. The strong correlation value and the significant t-test result imply that the intervention is an effective tool for enhancing early literacy. The result implies that a high level of implementation directly translates to improved literacy outcomes among learners. These findings reinforce the importance of fully integrating contextualized digital tools in the teaching-learning process to achieve better literacy performance and learner engagement.

Keywords — Technology-Based Contextualized Storybooks, Literacy performance, Kindergarten

I. Introduction

Republic Act No. 10533 or otherwise known as Enhanced Basic Education Act of 2013 was enacted where the state shall create a functional basic education system that will develop productive and responsible citizens equipped with the essential competencies, skills, and values for both life-long learning and employment through allowing every student or learner to receive the quality education that is globally competitive based on a pedagogically sound curriculum that is at par with international standards.

In our modern era, digital storybooks provide a motivating approach in order improve literacy as well as enhancement particularly in Kindergarten. Though this strategy, they strengthen the utilization of modernized technology because it promotes collaboration, interaction and active engagement through learning experiences which give development in digital literacy and fluency toward the millennial learners.

In education, the learners will effectively learn whenever their learning environment blends in or create arousal the interest of the learners through the adaptation of digital storybooks. Storybooks are intrinsically interactive since it features attractive visuals, audio effects and engaging elements that would be captivating to the youngsters. This innately engaging factor promotes excitement, build curiosity and motivates the learners to engage themselves during the storytelling process.

Digital storybooks are known to be effective in having development of relevant literacy skills for an instance, phonological awareness which provides engaging elements like highlighting texts, audio effects and repetition in reading. This is very much helpful to develop a comprehension of phonics and their relationship to letter will also be fully understood. Aside from that, the vocabulary will be apparent since the digital storybooks can introduce new vocabulary through visual cues, meanings, developing learners' language comprehension and interactive activities. And the learners' reading comprehension will be eventually developed since the active feature can foster a profound understanding of the themes, casts and plot.

We all know that the learners have individual differences, digital story books would be a great avenue because it gives them ease to access to students with diverse learning needs. Features such as adjustable font size, options for the narration and built in dictionary provide the pupils preference based on their abilities. To meet the learners' need digital storybooks can be customized. Teachers can give differentiated instruction which allows students to have accessibility according to their level of understanding and pace.

Thus, this is one of the driving reasons why the researcher is deeply committed to pursuing her vision of enhancing early literacy instruction. Her enthusiasm is fueled by the observed need for more effective and engaging strategies that can support the foundational reading development of kindergarten learners. Recognizing that literacy is the cornerstone of all future academic success, the researcher aims to focus this study on identifying and implementing innovative

reading strategies that are developmentally appropriate, interactive, and aligned with the learning needs of young children. By conducting this research, the goal is to contribute practical and evidence-based approaches that can be integrated into classroom instruction. These new strategies are envisioned to not only address the current gaps in early reading proficiency but also to empower teachers with tools and techniques that can make literacy instruction more meaningful and effective. Ultimately, this study aspires to support the broader educational goal of improving literacy performance among kindergarten learners, laying a strong foundation for lifelong learning.

This study is conducted to determine the extent of the utilization Of Technology-Based Contextualized Storybooks & Reading Materials in relation to the Literacy Performance Of the Kindergarten Learners in Matlang Central School, in Leyte Division. The findings of the study were the bases for the proposed Intervention Plan.

Specifically, the study sought to answer the following questions:

1. What Is the Extent of The Implementation of The Technology-Based Contextualized Storybooks & Reading Materials in Terms Of:

   1. Guidelines

   2. Techniques

   3. Resources

   4. Support

   5. Training

   6. Challenges?

2. What the is the literacy performance of the kindergarten Learners?

3. Is there a significant relationship on the extent of the implementation of the technology-based contextualized storybooks & reading materials to the literacy performance of the kindergarten learners?

4. What intervention plan can be proposed on the findings of the study?

Statement of Hypothesis:

Ho: There is no Significant Relationship on the extent of the implementation of the Technology-Based Contextualized Storybooks & Reading Materials to the literacy performance of the kindergarten learners.

II. Methodology

Design. This study employed a descriptive-correlational research design to determine the extent of the utilization of technology-based contextualized storybooks and reading materials in relation to the literacy performance of kindergarten learners in Matlang Central School, Leyte Division. The descriptive part focused on assessing the level and frequency of use of these digital materials, while the correlational aspect aimed to identify the relationship between their utilization and the learners' literacy performance. Data were gathered using validated survey questionnaires for teachers, standardized literacy assessment tools for kindergarten pupils, and supplemented by classroom observations and relevant document analysis. The findings of the study served as the basis for the development of a proposed intervention plan to enhance literacy outcomes through the improved use of technology-based contextualized reading resources. The main locale of the study was Matlang Central School in the Division of Leyte. The respondents of the study were 26 females and 23 males with the total of 49 learners . The information for the analysis was gathered using The research instrument was adapted from Baggay et al. (2021) to assess instructional leadership practices using a Five-Point Likert scale. The researcher used the following instruments to gather the necessary data. The researcher used the validated Teacher-made Questionnaires subject based on the technology-based contextualized storybooks & reading materials to get the pretest and post-test literacy performances of the kindergarten learners. Another tool utilized was the validation tool (survey) on the extent of the utilization of the aforesaid intervention.. The proposed intervention Plan was taken based on the findings of the study.

Sampling The respondents of the study were 26 females and 23 males with the total of 49 learners that were involved in this study were being identified and the primary means of reach is during the actual conduct of the study as well as during the gathering of data in the school where the study was conducted.

Research Procedure In order to gather the necessary data within one month (30 days), the researcher sought permission from the Schools Division Office, headed by the Schools Division Superintendent, through a transmittal letter. The same letter content was also provided to the Public Schools District Supervisor, School Principal, and the teachers whose pupils were the respondents of the study. The researcher then conducted a pretest on the reading performance of the learners prior to the integration of the technology-based contextualized reading materials. After administering the pretest and post-test, the researcher distributed the validation tool to the school head regarding the extent of the utilization of the technology-based contextualized storybooks and reading materials.

All data gathered were then collated and subjected to appropriate statistical treatment.

Ethical Issues. The right to conduct the study was strictly adhered through the approval of the principal, approval of the Superintendent of the Division. Orientation of the respondents both School Principal, teachers were done. Participation was strictly voluntary. Anonymity and

confidentiality were maintained throughout the study. Results were used solely for research and educational improvement purposes.

Treatment of Data. The following statistical formulas were used in this study:

The quantitative responses will be tallied and tabulated. The data were treated statistically using the following statistical tool.

Weighted Mean. This was utilized to assess the literacy performance of the kindergarten learners .

Pearson r- This tool was used to calculate the literacy performances of the kindergarten learners.

III. Results and Discussion

Table 1
Extent of the Implementation of The Technology-Based Contextualized Storybooks & Reading Materials

	A. GUIDELINES	Weighted Mean	Interpretation
1	Clear implementation guidelines for the technology-based reading program are in place.	4.70	Strongly Agree
2	Teachers and facilitators are oriented on intervention procedures.	4.70	Strongly Agree
3	Reading goals and expected outcomes are communicated to all stakeholders.	4.70	Strongly Agree
4	The program follows structured schedules and protocols.	4.70	Strongly Agree
5	Implementation is regularly monitored and evaluated based on the guidelines.	4.70	Strongly Agree
	Mean	4.70	Strongly Agree
	B. TECHNIQUES		
1	Teachers use interactive reading apps or platforms effectively.	4.60	Strongly Agree
2	Learners engage in guided reading through multimedia tools.	4.70	Strongly Agree
3	Digital assessments are used to measure reading progress.	4.70	Strongly Agree
4	Instruction is differentiated using technology to meet varied reading levels.	4.65	Agree
5	Motivational techniques such as gamification are used to sustain engagement.	4.50	Strongly Agree
	Mean	4.63	Strongly Agree
	C. Resources		
1	Age-appropriate digital reading materials are available.	4.60	Strongly Agree
2	Audio-visual and interactive content support comprehension.	4.50	Strongly Agree
3	Software or apps used align with reading curriculum and standards.	4.66	Strongly Agree

4	Learners have access to mobile devices, tablets, or computers.	4.70	Strongly Agree
5	Technical support is available to maintain and troubleshoot resources.	4.50	Strongly Agree
	Mean	4.59	Strongly Agree
	D. Benefits		
1	Students demonstrate improved reading fluency and comprehension.	5.00	Strongly Agree
2	Learners show increased motivation to read using digital platforms..	4.65	Strongly Agree
3	Teachers report ease in tracking reading progress through technology.	4.65	Strongly Agree
4	The program allows for flexible and individualized learning.	4.65	Strongly Agree
5	Parents report positive impact on children's reading habits at home.	4.70	Strongly Agree
	Mean	4.73	Strongly Agree
	E. Participation		
1	Students actively use reading technology tools during sessions.	4.70	Strongly Agree
2	Learners participate consistently in scheduled intervention activities.	4.65	Strongly Agree
3	Students complete digital reading tasks independently.	4.65	Strongly Agree
4	Learners respond positively to feedback provided through the platform.	4.60	Strongly Agree
5	Participation is consistent across different reading ability levels.	4.65	Strongly Agree
	Mean	4.65	Strongly Agree
	F. Challenges		
1	Limited access to devices affects implementation.	4.50	Strongly Agree
2	Unstable internet connectivity hinders smooth use of technology tools.	4.50	Strongly Agree
3	Some learners struggle to navigate or use digital platforms.	4.50	Strongly Agree
4	Teachers face time constraints in managing and monitoring tech-based tasks.	2.50	Disagree
5	Lack of parental support affects learner engagement at home.	2.45	Disagree
	Mean	3.69	Agree
	Grand Mean	4.50	STRONGLY AGREE

Legend: 4.21- 5.00 – Strongly Agree
3.41- 4.20 – Agree
2.61-3.40 - Undecided
1.81- 2.60- Disagree
1.00-1.80- Strongly Disagree

This table presents the extent of the implementation of the Technology-Based Contextualized Storybooks and Reading Materials in Matlang Central School as measured through six domains: Guidelines, Techniques, Resources, Benefits, Participation, and Challenges. Each domain includes specific indicators rated using a Likert scale, and their corresponding weighted means and interpretations are presented. The objective of this table is to determine how effectively

the intervention is being implemented across various aspects essential to improving literacy performance among kindergarten learners.

The results under Guidelines revealed a consistent weighted mean of 4.70 across all five indicators, interpreted as Strongly Agree. This suggests that the implementation is grounded on clear guidelines, with proper orientation, communication of goals, and consistent monitoring. In the Techniques domain, results showed high engagement with interactive tools, guided reading, and digital assessments. With a mean of 4.63, also interpreted as Strongly Agree, it reflects that teachers are effectively integrating these tools, though there is slight variation due to differentiated instruction (4.65) and motivational strategies (4.50).

Under Resources, the average rating of 4.59 (Strongly Agree) implies that appropriate digital content and access to technology are available and effectively support the reading curriculum. The highest domain mean appeared in Benefits, with 4.73 (Strongly Agree), indicating that learners show significant improvement in reading fluency, comprehension, motivation, and that both teachers and parents observe positive outcomes. The domain of Participation also reflected a high implementation level with a mean of 4.65, showing that learners actively and consistently participate in the use of digital reading platforms. However, under Challenges, although most indicators still received Strongly Agree ratings (4.50), the presence of issues such as limited access, unstable internet, and user difficulty were noted. Importantly, two indicators – time constraints (2.50) and lack of parental support (2.45) – were rated Disagree, resulting in a lower domain mean of 3.69, interpreted as Agree.

The implications of these results suggest a strong overall implementation of the technology-based contextualized reading materials. With a grand mean of 4.50, interpreted as Strongly Agree, the results imply that the integration of this digital intervention is highly effective and widely accepted by both learners and educators. Strong implementation across domains of guidelines, techniques, resources, benefits, and participation signifies readiness and capability to deliver technology-enhanced instruction. However, the challenges domain, particularly concerning teacher workload and parental support, implies areas that need strategic intervention to ensure sustainability and inclusivity of the program.

Table 2
Literacy Performance of Learners

No.	Interpretation	Scale	Frequency	Percentage
3	Independent	86-100	40	82
2	Instructional	75-85	9	18
1	Frustration	74 below	0	0
	Total		49	100
	Average		91.33	Independent

This table presents the Literacy Performance of Learners who were exposed to the implementation of technology-based contextualized storybooks and reading materials at Matlang Central School. The table categorizes learners' literacy levels into three bands—Independent, Instructional, and Frustration—based on their reading scores. It includes the frequency and percentage distribution of learners under each category, along with the computed average score.

The data show that out of 49 learners assessed, a significant majority—40 learners or 82%—fell under the Independent level, indicating that they were able to read and comprehend texts with minimal to no support. Meanwhile, 9 learners or 18% were categorized under the Instructional level, meaning they needed some guidance to process the reading materials effectively. Notably, no learners (0%) were classified under the Frustration level, which typically indicates a serious struggle with reading below grade level.

The findings reflect a highly favorable outcome in terms of literacy development. The absence of learners in the Frustration level suggests that the intervention effectively addressed foundational reading challenges. The presence of a high percentage in the Independent level points to a successful implementation of digital and contextualized reading materials. Additionally, the average literacy score of 91.33 further confirms that the learners, on average, achieved proficiency well within the Independent range.

The implications of these results are strongly positive. The dominance of learners in the Independent category and the absence of struggling readers imply that the intervention significantly enhanced literacy performance. The average score of 91.33 affirms that most learners are not only reading at grade level but are doing so independently. The result implies that the use of technology-based contextualized storybooks was effective in promoting reading comprehension, fluency, and learner engagement. However, the presence of some learners in the Instructional level indicates a need for continued support and differentiated instruction to ensure all learners reach independent literacy levels.

Table 3
Test of Relationship

Variables Correlated	r	Computed value or t	Table Value @.05	Decision on Ho	Interpretation
Extent Of The Implementation Of The Technology-Based Contextualized Storybooks & Reading Materials and Literacy Performance of Learners	0.91	3.654	0.453	Reject Ho	Significant Relationship (Very Strong)

This table presents the test of Relationship, which examines the correlation between the extent of the implementation of the Technology-Based Contextualized Storybooks and Reading Materials and the literacy performance of learners. The table shows the computed correlation coefficient (r), the t-value, the table value at the 0.05 level of significance, the decision on the null hypothesis (Ho), and the interpretation of the statistical result.

The data show a correlation coefficient (r) of 0.91, indicating a very strong positive relationship between the implementation of the intervention and the literacy performance of the learners. The computed t-value of 3.654 is substantially higher than the critical table value of 0.453, leading to the rejection of the null hypothesis. This statistically confirms that there is a significant relationship between how well the technology-based contextualized reading materials were implemented and the literacy outcomes of the learners.

The strength of the relationship suggests that as the implementation of the intervention improves, literacy performance among learners also increases significantly. This implies that the components of the program—such as structured guidelines, engaging techniques, appropriate resources, learner participation, and the perceived benefits—collectively contribute to the improvement in reading proficiency.

The implications of these results are substantial. The strong correlation value of 0.91 and the significant t-test result imply that the intervention is an effective tool for enhancing early literacy. The result implies that a high level of implementation directly translates to improved literacy outcomes among learners. These findings reinforce the importance of fully integrating contextualized digital tools in the teaching-learning process to achieve better literacy performance and learner engagement.

IV. Conclusion

Based on the results of this study, the test of relationship, which examines the correlation between the extent of the implementation of the Technology-Based Contextualized Storybooks and Reading Materials and the literacy performance of learners, revealed a very strong and

significant relationship. The statistical outcome confirms that improved implementation of the intervention is closely linked to better literacy outcomes among kindergarten learners. This suggests that when digital and contextualized reading materials are effectively integrated into instruction—supported by clear guidelines, engaging techniques, accessible resources, and active learner participation—literacy performance significantly improves. The result implies that the intervention is a valuable and impactful tool for enhancing early literacy and should be sustained and scaled to support continued educational progress.

V. Recommendations

Based on the findings of this study, the following recommendations are proposed from the extent of the utilization Of Technology-Based Contextualized Storybooks & Reading Materials in relation to The Literacy Performance Of The Kindergarten Learners among the ff:

1. The teacher should consistently integrate technology-based contextualized storybooks and reading materials into daily literacy instruction, apply interactive strategies to engage learners, and monitor individual progress to address varying reading levels effectively.

2. The school head should provide continuous support by ensuring access to necessary digital resources, facilitating professional development programs for teachers, and conducting regular monitoring and evaluation to sustain the effective implementation of the intervention.

3. The Public Schools District Supervisor should advocate for the broader adoption of contextualized digital literacy tools across schools in the district, provide technical and instructional support to school heads and teachers, and ensure alignment with early literacy development goals.

4. The parents should actively participate in their children's literacy development by supporting reading activities at home, utilizing the provided digital resources, and maintaining close communication with teachers regarding their child's reading progress.

5. The researcher should further explore the specific components of the intervention that most significantly affect literacy performance and propose enhancements or innovations that can be applied in diverse educational settings.

6. The future researchers should conduct longitudinal studies to examine the long-term impact of technology-based contextualized reading materials on learners' academic growth and explore additional factors such as learner behavior, socio-economic background, and home literacy environment that may influence the effectiveness of the intervention.

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AUTHOR'S PROFILE

KAREN IVY ARNAIZ-GELIG

This author was born on November 19, 1990 at the "City of Beautiful People" - Ormoc City, Leyte, Philippines. She finished her Bachelor's Degree in Elementary Education in Visayas State University – Isabel in 2011. During her college days, she eventually learned to love her specialization to nurture the young minds and hearts of the learners and foster resilience towards growth and excellence. She took her Licensure Examination for Teachers in Tacloban City last September 2011 and God has never failed to answer her fervent prayers, she successfully passed the LET. Her passion in her chosen field of specialization led her to pursue her Master's Degree in Western Leyte College. Apparently, she's finishing her Master's Degree in Elementary Education in Western Leyte College of Ormoc City.

She started her journey in her endeavor in 2012 in Kindergarten at Libertad Elementary School as a subsidized teacher. It was undeniably difficult during her adjustment period because managing the behaviors of the kinder learners entails patience, hard work and dedication. In June 2014, she was assigned in Mahayag Elementary School and Isabel Central School as a regular permanent Teacher I in Kindergarten. And since she was handling two stations, her pregnancy was eventually affected due to the situations. With this, she was assigned by her District Supervisor in Matlang Central School Annex in the year 2016 and she's still handling Kindergarteners as Teacher III up to the present. Her coordinatorships are Drum and Lyre Corps and Disaster Risk Reduction Management. She believes that keeping the flame of passion in teaching would ignite the hearts of every learner to transpire in appreciating the love for learning, exploring beyond classrooms and achieve holistic development among the youngsters especially in our generation.