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EFFICACY LEVEL OF DIGITAL MULTIMEDIA INTEGRATION AND LEARNERS' READING SKILLS

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ABSTRACT

This study examined the effectiveness of integrating digital multimedia in instruction and its relationship to learners' reading skills in District VI of the Malaybalay City Division during the School Year 2025–2026. Using a descriptive-correlational research design, it evaluated five instructional aspects: multimedia presentation modality, coherence between visuals and text, pacing and segmentation, alignment of content and images, and the frequency of guided practice sessions. Data were collected from Key Stage 1 teachers through a researcher-developed survey and from learners' Comprehensive Rapid Literacy Assessment (CRLA) scores, and were analyzed using frequency, percentage, mean, standard deviation, and Pearson r. Results indicated that teachers perceived the implementation of multimedia integration as very highly effective across all indicators. Despite this, most learners were still classified under the needs practice reading level in the CRLA, suggesting limited fluency and automaticity. The analysis also revealed no significant relationship between the perceived effectiveness of digital multimedia and learners' actual reading performance. This implies that although multimedia tools can enhance engagement and help manage cognitive load, they do not necessarily lead to improved reading proficiency. The study therefore concludes that digital multimedia serves as a supportive instructional aid, but its impact depends on factors such as learner readiness and proper instructional alignment. It recommends that teachers incorporate explicit teaching strategies and repetitive practice rather than relying solely on technology for engagement, and that school leaders provide professional development on digital pedagogy to help educators effectively use multimedia tools to

support the development of foundational reading skills and achieve grade-level reading competence.

KEYWORDS: *Digital Multimedia Integration, Key Stage 1, CRLA, Digital Pedagogy, Malaybalay City*

INTRODUCTION

The primary challenge within Philippine elementary schools involved Key Stage 1 learners who struggled significantly with foundational literacy competencies, particularly regarding word identification and reading comprehension. Many learners continued to depend heavily on strenuous manual decoding or speculative reading, which severely hindered their reading fluency and overall cognitive grasp of the material. This deficit in reading skills widened the existing academic divide, given that literacy served as the essential gateway to all other academic areas. Observations indicated that conventional, text-heavy reading interventions often failed to resonate with children raised in a digital era. Consequently, the integration of dynamic visual and auditory elements, such as those utilized in PowerPoint presentations, represented a vital transition toward transforming passive instruction into a stimulating, multi-sensory engagement, thereby necessitating a timely investigation into the efficacy level of digital multimedia integration.

In relation to these instructional challenges, the demand for innovative reading methodologies found its basis in legal mandates, including the 1987 Philippine Constitution, which guaranteed the right of every citizen to quality education, and DepEd Order No. 20, s. 2018 (The Phil-IRI), which required the remediation of reading difficulties at the primary level. Various investigations suggested that technological tools could effectively address these mandates. For instance, Hwang and Wu (2019) found that multimedia tools increased learner participation and conceptual understanding. Similarly, Alipon (2021) emphasized that a focused, technology-driven intervention successfully addressed specific literacy gaps, including fluency and decoding processes.

Despite the fact that prior research affirmed the general advantages of technology in education, a distinct gap remained concerning the precise, measurable impact of basic digital multimedia (PowerPoint) on the development of two specific areas: word recognition velocity and comprehension among young Filipino learners in Key Stage 1. A majority of the current literature focused on high-cost, specialized software or targeted older learners exclusively. There was a notable lack of localized, experimental data that detailed the

influence of ubiquitous tools like PowerPoint, which teachers frequently utilized in private school settings. Therefore, this study aimed to fill that void by providing empirical evidence of the direct connection between the efficacy level of digital multimedia integration and quantifiable improvements in learners' reading skills, offering a practical and affordable instructional model.

Furthermore, this investigation held significant value as it moved beyond the mere use of technology for its own sake. The project generated empirical, evidence-based results that supported the systematic inclusion of digital multimedia in early literacy curricula, particularly in private schools where resource availability varied. Key Stage 1 teachers stood to gain immediate advantages from the results, as the study demonstrated that a functional, efficient, and replicable reading method accelerated literacy growth. Additionally, the outcomes assisted school administrators and curriculum designers in identifying low-cost instructional improvements. Ultimately, this work benefited the learners by establishing a successful path for bettering word recognition and comprehension, thus equipping them with the vital literacy tools necessary for success in advanced grade levels and enduring academic growth.

Theoretical Framework of the Study

The theoretical foundation of this study was anchored on Cognitive Load Theory (CLT) (Sweller, 1988), as the efficacy level of digital multimedia integration through PowerPoint primarily relied on the management of the restricted working memory capacity of the learners. Cognitive Load Theory maintained that instructional design improved learning when it reduced extraneous cognitive load, which referred to mental energy unrelated to schema formation, while simultaneously increasing germane cognitive load, which focused on profound understanding and the construction of mental schemas. The employment of PowerPoint to synthesize and coordinate text, graphics, and audio permitted the application of principles such as the modality effect and redundancy effect. For Key Stage 1 learners, carefully structured slides decreased cognitive pressure by highlighting essential data, such as focusing on a specific word for identification tasks or linking text with a relevant visual aid to support learners' reading skills, which directly aided the transfer of new literacy competencies into long-term memory.

Significance of the Study

The researcher conducted this study with the firm belief that the findings yielded significant benefits for several specific groups of stakeholders:

To the learners, this study held substantial importance because these individuals functioned as the primary recipients of enhanced pedagogical techniques. By assessing the efficacy level of digital multimedia integration through PowerPoint, the inquiry sought to confirm an engaging, multi-sensory, and efficient instructional method that targeted the fundamental hurdles in word recognition and reading comprehension. Ultimately, a validated digital strategy accelerated the mastery of vital literacy competencies, which transformed struggling readers into fluent and active participants and established a necessary foundation for achievement in all succeeding grade levels to improve learners' reading skills.

To the teachers, the results of this study provided them with empirical data that supported the efficient and functional application of a widely available tool like PowerPoint within their daily literacy lessons. The research identified specific optimal practices, including appropriate pacing, visual signaling, and the use of diverse modalities that decreased the complexity of designing instruction. This evidence-based direction permitted teachers to differentiate their reading lessons with certainty, conserved critical preparation time, and heightened their professional expertise in merging technology to satisfy the various requirements of Key Stage 1 learners.

To the Department of Education (DepEd), this study offered the Department of Education (DepEd) vital, localized information regarding an economical, scalable, and easily applied technology-assisted intervention. In view of the mandate of the Department to elevate early literacy statistics, the project provided a framework for incorporating fundamental digital resources into both remedial and standard literacy programs nationwide. The confirmation of the efficacy level of digital multimedia integration informed the creation of official teaching manuals, uniform training programs, and policies for the distribution of resources in primary schools to bolster learners' reading skills.

To the parents, this study provided them with a sense of confidence concerning the success of the literacy strategies employed within the school. The outcomes translated into functional, data-driven suggestions for home-based assistance, which demonstrated to parents how to utilize basic digital devices, such as home computers or tablets, to strengthen the word identification and understanding abilities of the child. This fostered a more robust collaboration between the home and the school that focused on steady and successful literacy growth.

To Valencia Colleges (Bukidnon) Incorporated (VCI), this study strengthened the standing of the school as a forward-thinking entity dedicated to academic high standards and data-informed operations. The favorable academic results that stemmed from the verified effectiveness of this strategy functioned as a standard for the incorporation of technology within early childhood instruction. This alignment ensured that the school remained at the forefront of innovative educational practices that directly impacted the efficacy level of digital multimedia integration.

To the future researchers, this study served as a primary resource for them by isolating and quantifying the instructional design elements of digital multimedia specifically within the framework of Key Stage 1 literacy. Subsequent researchers used the research structure, the confirmed tool, and the observations as a starting point to examine more intricate strategies, evaluate the success of alternative digital systems, or contrast the impact of PowerPoint across various grade levels or academic subjects. These future efforts continued to expand the understanding of how such tools influenced learners' reading skills.

Definition of Terms

The researcher operationally defined the following terms to provide clarity for the study:

Content-Image Congruence. Content-Image Congruence represented the specific extent to which the accompanying graphics or illustrations related directly and non-redundantly to the displayed text, which the researcher evaluated using a developed checklist to assess visual relevance. This metric ensured that the efficacy level of digital multimedia integration remained high by aligning visual aids with the instructional goals of the lesson.

Frequency of Guided Practice Sessions. Frequency of Guided Practice Sessions referred to the total number of organized, teacher-led, or group meetings held each week where the PowerPoint reading intervention actively engaged the Key Stage 1 learners, as documented in the official classroom log. These sessions provided the necessary consistency to monitor the progression of learners' reading skills over the specified duration of the implementation.

Key Stage 1 Learners. Key Stage 1 Learners refers to students in the foundational years of basic education, specifically those in Kindergarten to Grade 3.

Level of the Reading Skills of the Learners. Level of the Reading Skills of the Learners indicated the quantifiable score that Key Stage 1 learners achieved on a standardized or researcher-constructed reading assessment both before and after the intervention. This score reflected a combined measurement of Word Recognition Accuracy and Speed along with the

Reading Comprehension Score, as derived from the results of the Comprehensive Rapid Literacy Assessment (CRLA).

Multimedia Presentation Modality Multimedia Presentation Modality described the arrangement of sensory inputs, such as the use of visual text alone or the simultaneous application of visual text and human-voice audio narration, which the teachers utilized in the PowerPoint slides during the literacy intervention. This variable directly impacted the efficacy level of digital multimedia integration by determining how the learners processed information.

Pacing and Segmentation Frequency. Pacing and Segmentation Frequency denoted the speed at which the teachers introduced new information, such as text or concepts, and the specific number of separate chunks or slides into which the reading instruction was divided. The researcher measured this through instructional time logs to ensure that the delivery favored the cognitive capacities of the learners.

Visual and Text Coherence (Signaling). Visual and Text Coherence (Signaling) referred to the degree to which teachers intentionally applied visual cues, such as bolding, arrows, or color-coding, to emphasize the target word or critical data on the PowerPoint slide. This strategy aimed to improve learners' reading skills by guiding their attention to the most relevant parts of the digital presentation, as verified through teacher observations or a checklist.

Research Methodology

This study was performed by applying the descriptive-correlational research design. It delved on the efficacy of digital multimedia integration in enhancing word recognition and reading skills of the Key Stage 1 learners in District VI Malaybalay City Division, SY 2025-2026.

Data on the level of efficacy of digital multimedia integration in enhancing word recognition and reading comprehension were gathered by using an adapted questionnaire and level of the reading skills of the Key Stage 1 learners were based on their CRLA Result- Quarter 3 of School Year 2025-2026.

Research Locale

This study was conducted within District VI of the Malaybalay City Division during the School Year 2025-2026. Malaybalay City, officially recognized as the City of Malaybalay, functioned as a component city and the capital of the province of Bukidnon in the Philippines. According to the 2020 census, the city maintained a population of 190,712

individuals. This demographic setting provided a diverse environment for examining the efficacy level of digital multimedia integration among various schools within the division.

In connection with its regional identity, the city held the title of the South Summer Capital of the Philippines, a distinction it shared with Marawi. The geographical boundaries of the locale included the municipality of Impasugong to the north, Lantapan to the west, Valencia and San Fernando to the south, and Cabanglasan and Agusan del Sur to the east. Additionally, Malaybalay served as the host for the annual Kaamulan Festival from mid-February to March 10, which represented a major cultural celebration for the community. Such local events often influenced the scheduling of academic activities aimed at improving learners' reading skills during the school year.

Geographically, Malaybalay City occupied the central portion of Bukidnon. The Pantaron Range and Cabanglasan bordered the area to the east, while Mount Kitanglad and Lantapan situated themselves to the west. Furthermore, Impasugong stood to the north, with Valencia City and San Fernando located to the south. The city accessed the nearest seaport and airport facilities in Cagayan de Oro, which remained approximately 91 kilometers away. Politically, the administration subdivided Malaybalay into 46 barangays organized into five geographical districts, namely the Poblacion District, North Highway District, South Highway District, Basakan District, and Upper Pulangi District.

Respondents of the Study

The respondents of the study were the public-school teachers in District VI Malaybalay City Division, SY 2025-2026. These teachers work in various elementary and secondary schools under the jurisdiction of this district, which includes schools such as Laguitas Elementary School, Bendulan Elementary School, Mapayag Integrated School, Aglayan Elementary School, Magsaysay Elementary School, and Cabangahan Elementary School. The teachers serve diverse communities within the district, catering to learners from both urban and rural barangays of Malaybalay City. Table 1 presents the distribution of respondents by school.

Table 1. ***Distribution of Respondents by School.***

School	Total Population (N)	Number of Respondents (n)
Laguitas Elementary School	13	13
Bendulan Elementary School	7	7
Mapayag Integrated School	17	17
Aglayan Central School	34	34
Magsaysay Integrated School	29	29
Cabangahan Elementary School	13	13
Total	113	113

Sampling Procedure

This study utilized the complete enumeration sampling procedure, which meant that the researchers included every teacher within District VI of the Malaybalay City Division as a participant. Rather than selecting a specific sample subset, the study gathered information from the total population of teachers in this district, which ensured that the inquiry captured all perspectives and professional experiences related to the efficacy level of digital multimedia integration in teaching.

Building upon the advantages of this approach, the method eliminated sampling bias and permitted more precise and exhaustive data collection concerning the development of learners' reading skills, specifically in word recognition and reading comprehension among Key Stage 1 learners. Complete enumeration proved especially suitable given that the population size remained manageable, as the process provided detailed insights into the entire group instead of relying on extrapolation from a smaller sample. Consequently, this strategy produced a thorough evaluation that represented the collective professional experience of all public-school teachers in District VI of the Malaybalay City Division

Research Instrument

The researcher patterned her instrument of this study from the work of Ms. Carolyn Gullayan Corales (2025) from her study titled Leveraging Digital Learning Resources to Enhance Reading Comprehension of Grade 1 Learners of Atok Elementary School.

It was a survey-questionnaire which was composed of two parts.

Part I was about the level of efficacy of digital multimedia integration in enhancing word recognition and reading comprehension. Columns for the choices were based on the Five-Point Likert Scale. The respondent simply checked the column for his/her chosen answer.

Part II was on the level of the reading skills of the Key Stage 1 learners based on their CRLA result.

Scoring Procedure

The data were interpreted using the rating scales below. For the level of efficacy of digital multimedia integration in enhancing word recognition and reading comprehension, the mean was interpreted using the Five-Point Likert Scale shown below:

Scale	Range	Indicator	Description
5	4.20-5.00	Very High Efficacy	The integration is consistently and significantly effective, resulting in maximum enhancement of both word recognition and reading comprehension skills among

			learners.
4	3.40-4.19	High Efficacy	The integration is frequently effective, resulting in a strong and noticeable improvement in word recognition and reading comprehension.
3	2.60-3.39	Moderate Efficacy	Integration is sometimes effective, resulting in moderate but inconsistent improvement in reading skills, benefiting some learners more than others.
2	1.80-2.59	Low Efficacy	Integration is rarely effective, resulting in minimal or negligible improvement in reading skills, often overshadowed by challenges.
1	1.00-1.79	Very Low Efficacy	Integration is not at all effective, failing to enhance word recognition or comprehension, and may even hinder the learning process.

The level of the reading skills of the learners in Key Stage 1 was rated and analyzed using the CRLA rating scale below:

Reading Profile	**Support Level/Indicator**	**Description**
Grade Ready	Mastery	The learner has mastery of previous grade level concepts and skills; they are ready to learn new, on-grade-level content and skills.
Light Refresher	Needs Practice	The learner has a firm grasp of previous grade level concepts and skills but needs further practice to improve accuracy and fluency.
Moderate Refresher	Needs Assistance	The learner does not have a firm grasp of previous grade level concepts and skills and needs a lot of assistance and practice to bridge the learning gap.
Full Refresher	Needs Direct Instruction	The learner demonstrates significant difficulties and requires direct, intensive instruction on previous grade level concepts and skills, necessitating a comprehensive support program.

Statistical Treatment of Data

The following statistical tools were used in this study:

Mean and standard deviation were applied to determine the level of efficacy of digital multimedia integration in enhancing word recognition and reading comprehension.

Percentage and frequency count were utilized to determine the level of the reading skills of the Key Stage 1 learners.

Pearson r Product-Moment Correlation Coefficient or Pearson r was used to check the significant relationship between level of efficacy of digital multimedia integration in enhancing word recognition and Key Stage 1 learners' reading skills.

SUMMARY

This study was conducted to find the efficacy of digital multimedia integration in enhancing word recognition and reading comprehension in District VI Malaybalay City Division, SY 2025-2026. Specifically, this study determined the level of efficacy of digital multimedia integration in enhancing word recognition and reading comprehension in terms of multimedia presentation modality, visual and text coherence, pacing and segmentation frequency, content-image congruence, and frequency of guided practice sessions, the level of the reading skills of the learners in Key Stage 1 based on Comprehensive Rapid Literacy Assessment (CRLA), significant relationship between level of efficacy of digital multimedia integration in enhancing word recognition and Key Stage 1 learners' reading skills.

This study was performed by applying descriptive-correlational research design. The data needed were gathered by using a researcher-made survey questionnaire. The respondents of this study were delimited to the teachers in District VI Malaybalay City Division, SY 2025-2026. The data were analyzed with the descriptive statistics such as frequency count, percentage, mean, standard deviation, and Pearson r Product Moment Correlation Coefficient.

FINDINGS

This study uncovered the following findings:

There was a very high level of efficacy of digital multimedia integration in enhancing word recognition and reading comprehension in terms of multimedia presentation modality, visual and text coherence, pacing and segmentation frequency, content-image congruence, and frequency of guided practice sessions among the teacher-respondents.

Majority of the Key Stage 1 learners were in the "needs practice" reading level based on Comprehensive Rapid Literacy Assessment (CRLA),

There was no significant relationship between level of efficacy of digital multimedia integration in enhancing word recognition and Key Stage 1 learners' reading skills.

CONCLUSIONS

The conclusions drawn in this study stem from the aforementioned findings.

This study assessed the efficacy level of digital multimedia integration across five instructional dimensions to enhance learners' reading skills. Findings revealed very high efficacy in all areas, particularly modality and pacing, which confirms that dual-channel delivery and structured segmentation serve as powerful pedagogical scaffolds. Despite these high perceptions, the lack of statistical correlation with assessment scores suggests that

external developmental factors also influence literacy. Teachers should therefore balance digital tools with personalized interventions to maximize learning outcomes in schools.

This study assessed the learners' reading skills in Key Stage 1 through the Comprehensive Rapid Literacy Assessment. Findings revealed that most learners occupied the "needs practice" level, possessing foundational skills but lacking necessary fluency. This result highlights that while schools effectively prevent literacy failure, a critical need exists for targeted digital reinforcement. Teachers must therefore utilize high-repetition multimedia tools to bridge the gap between basic decoding and the automaticity required for grade-level reading mastery.

This study investigated the relationship between the efficacy level of digital multimedia integration and the learners' reading skills in Key Stage 1. Findings revealed no significant statistical link, indicating that high teacher perceptions of technology do not automatically yield improved assessment scores. This implies that while digital tools optimize engagement and reduce cognitive load, actual proficiency depends on external factors like learner readiness. Ultimately, schools must move beyond basic technology usage toward a more refined, data-driven digital pedagogy.

Recommendations

The findings and conclusions of this study include the following recommendations:

Teachers may strategically align multimedia design with specific literacy objectives to ensure high engagement translates into actual decoding and comprehension gains. It is recommended that schools prioritize digital tools featuring high-repetition word drills and frequent, brief guided practice sessions to build reading automaticity. By focusing on consistent, supervised reinforcement, teachers can effectively bridge the gap for learners who possess foundational skills but require more intensive practice to achieve grade-level fluency.

School heads may support specialized training workshops that empower teachers to design digital multimedia tools specifically for fluency development. It is recommended that they encourage the teachers prioritize interactive reading activities featuring frequent, brief guided practice sessions to enhance the efficacy level of digital multimedia integration. By focusing on repetitive word recognition drills, schools can effectively transition learners from the "needs practice" category to full reading mastery and improved comprehension across Key Stage 1.

School heads may implement professional development focusing on advanced digital pedagogy to ensure multimedia tools directly target literacy deficits. It is recommended that

they encourage the teachers integrate specific formative assessments within digital sessions to monitor the progress of the learner effectively. By addressing individual readiness and socio-economic gaps through a more balanced instructional approach, administrators can better translate high teacher engagement into measurable improvements in learners' reading skills and overall academic performance.

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