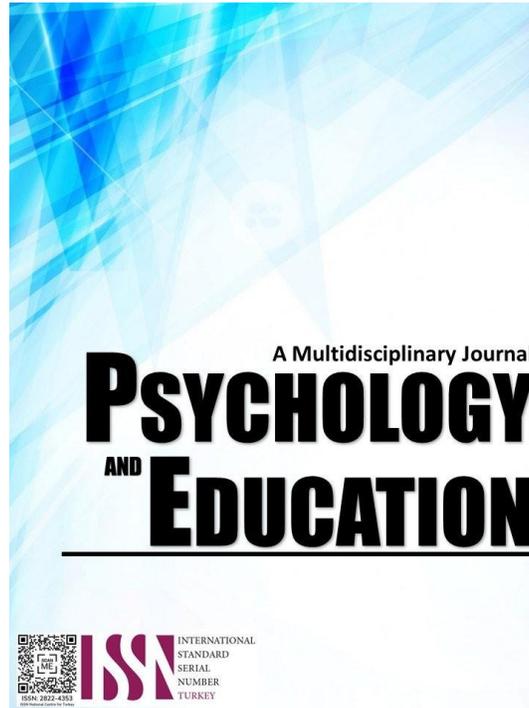


EFFECTIVENESS OF DIGITAL LITERATURE IN IMPROVING THE LEVEL OF READING COMPREHENSION OF GRADE 6 LEARNERS



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Effectiveness of Digital Literature in Improving the Level of Reading Comprehension of Grade 6 Learners

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Abstract

This study focused on improving the reading levels of Grade 6 learners using digital literature at Jose L. Perez Memorial School. The respondents were identified based on the Phil-IRI test results, which were verified by a teacher-made test. The LRMDS validated the teacher-made test. This study employed a quasi-experimental research design to investigate the significant effect of digital literature use on learners' reading comprehension levels. The intervention used was digital literature, which is ready-made stories in digital format or videos with subtitles. The analysis's findings attested to the effectiveness of digital literature as an intervention program in improving the reading comprehension level of Grade Six learners. The respondents' scores during the pretest were described as frustrated based on the Phil-IRI, while this was also identified using the teacher-made, validated pretest. Following the implementation of the intervention program, the post-test learners' scores garnered proficient remarks. Therefore, it is highly recommended to be involved in the school's reading program.

Keywords: *reading levels, comprehension levels, digital literature, learners*

Introduction

The Philippines continues to face a longstanding educational challenge, characterized by declining reading performance among basic education learners, as evidenced by international and national assessments. The 2018 Programme for International Student Assessment (PISA) reported that the Philippines ranked lowest among 79 participating countries in reading, with 80% of Filipino learners failing to meet the minimum proficiency level (De la Fuente, 2023). This concern is reflected in local diagnostic tools, such as the Philippine Informal Reading Inventory (Phil-IRI), where Grade 6 results from Jose L. Perez Memorial School revealed that 56% of learners were at the frustration and instructional levels, indicating serious deficiencies in comprehension (Navarro, 2023). Reading comprehension, a multidimensional cognitive process involving decoding, vocabulary, fluency, and schema activation, is essential for academic achievement, critical thinking, and lifelong learning (Clements, 2023). Its decline poses a threat not only to individual learner development but also to national competitiveness and the formation of human capital. Addressing this urgent problem necessitates the adoption of innovative, learner-centered interventions.

Digital literature is defined as literary content presented through digital formats such as videos with subtitles. It has been shown to enhance engagement, promote multimodal processing, and improve comprehension performance, especially among struggling readers (Yamac, 2019). The use of such digital tools is supported by the constructivist theory, which asserts that learners actively create meaning by interacting with stimuli through varied sensory modalities, thereby deepening understanding and retention (Kurt, 2021). Digital literature refers to any literature that is presented in a digital format. This can include e-books, interactive stories, and games. (Navarro, 2023) Digital literature can be a highly engaging and motivating way for students to learn. It can also provide students with opportunities to interact with text in new and innovative ways. In this study, digital literature will be limited to literary pieces in video formats with subtitles as intervention material. Research has shown that digital literature can be an effective tool for improving reading comprehension. For example, a study by Leu et al. (2018), cited in "How Digital Reading Differs from Traditional Reading: An Action Research," found that students who used digital literature in their classrooms had significantly higher reading comprehension scores than those who did not (Yamac, 2019).

Moreover, this initiative aligns with the legal and institutional mandates of the Department of Education, including Republic Act No. 10533 or the Enhanced Basic Education Act of 2013, which emphasizes the integration of technology and differentiated instruction to meet diverse learning needs, as well as the Every Child a Reader Program (ECARP) and Phil-IRI, which require schools to implement targeted reading interventions.

In response to these policy directives and identified learning gaps, this study aims to enhance the reading comprehension of Grade 6 learners by utilizing digital literature in the form of video-based stories with subtitles. Specifically, it aims to assess learners' initial comprehension levels, implement a structured digital literature intervention over six weeks, and evaluate its effectiveness in enhancing reading comprehension skills, thereby contributing to curriculum innovation and providing an evidence-based approach to strengthening literacy outcomes in Philippine basic education. The downloaded videos were reviewed, analyzed, and studied by the school LRMDS team and the school head. Based on their evaluation, the downloaded videos will give educational merit to the learners. These materials are aligned with the sixth-grade curriculum. A total of 6 intervention materials were administered to the study respondents over a period of 6 weeks. During the implementation, learners developed their comprehension skills through formative assessments administered by the researcher during digital literature sessions. The post-test was administered after the intervention had been completed. Intervention was conducted on a separate schedule that served as part of the school's reading program. Intervention

sessions were conducted from Monday to Friday, following the digital literature sessions after class.

Research Questions

The general objective of the study was to ascertain and analyze the effectiveness of digital literature in enhancing the reading comprehension of Grade Six learners at Jose L. Perez Memorial School, SY 2023-2024. To attain the general purpose of the study, the following research was mapped out:

1. What are the results of pre-test assessment on the level of comprehension level of the Grade Six learners be described before using digital literature in teaching?
2. What is the level of comprehension level of the Grade six learners after the use the digital literature?
3. Is there a significant difference in the learners' reading comprehension level after utilizing digital literature?
4. What is the implication of the findings of this study in terms of improving the learner's level of comprehension in the Phil IRI?

Methodology

Research Design

This study employed a quasi-experimental research design to investigate the effectiveness of digital literature, specifically video-based stories with subtitles, in enhancing the reading comprehension levels of Grade 6 learners. The design was employed by administering a pre-test to identify learners who demonstrated frustration and instructional reading levels based on the Phil-IRI results. These identified learners were then exposed to the digital literature intervention over a prescribed period, after which a post-test was conducted using the same assessment tool. The comparison of learners' pre-test and post-test comprehension scores enabled the researcher to evaluate the extent to which the intervention contributed to measurable improvement. The use of this design directly aligns with the research objective of establishing whether digital literature can significantly enhance reading comprehension skills among struggling readers in a real classroom setting, where random assignment is not feasible.

Respondents

The respondents of this study were Grade Six learners enrolled at Jose L. Perez Memorial School during the academic year. A total of 17 learners were purposively selected based on specific inclusion criteria derived from the results of the Philippine Informal Reading Inventory (Phil-IRI) Group Screening Test and the validated teacher-made pretest. The selection criteria were as follows: (1) learners who scored within the frustration or instructional level in the Individual Phil-IRI Assessment, indicating difficulty in comprehension; (2) learners whose scores in the validated teacher-made test fell within the "developing" proficiency level; and (3) learners who regularly attend reading intervention programs of the school. These criteria ensured that only those who demonstrated significant comprehension deficiencies were included, making them appropriate subjects for assessing the effectiveness of the digital literature intervention. The use of purposive sampling was appropriate for this quasi-experimental study, as it allowed the researcher to focus on learners who would most likely benefit from the intervention and provide measurable outcomes aligned with the study's objective of improving reading comprehension through digital literature.

Instrument

To gather the data necessary to answer the research questions, the study utilized two primary instruments: (1) the Philippine Informal Reading Inventory (Phil-IRI) Group Screening Test and (2) a validated teacher-made reading comprehension test administered as both pre-test and post-test. The Phil-IRI Group Screening Test, a standardized tool provided by the Department of Education, was initially administered to all Grade Six learners to assess their baseline reading comprehension levels in terms of accuracy, fluency, and understanding. The results were used to identify learners who fell under the frustration and instructional levels, thereby qualifying them as respondents for the intervention phase of the study.

Following the identification of respondents, the researcher developed a teacher-made reading comprehension test specifically aligned with the content of the digital literature (video stories with subtitles) used in the intervention. This instrument served both as the pre-test and post-test to measure changes in comprehension levels before and after the intervention. The test consisted of reading passages followed by multiple-choice and open-ended questions designed to assess literal, inferential, and critical comprehension skills, directly aligned with the study's research objectives.

To ensure content validity, the instrument underwent expert validation by the school's Learning Resource Management and Development System (LRMDS) team and the School Head, who evaluated the test for relevance, clarity, and alignment with curriculum standards. Additionally, the test was pilot-tested with Grade Six learners who were not part of the study to establish reliability and refine any ambiguous items.

In the pre-test phase, the instrument measured the learners' initial comprehension level, providing benchmark data to determine their classification as independent, instructional, or frustrated readers. The same validated instrument was administered as the post-test after the six-week digital literature intervention to determine the effectiveness of the treatment. The improvement in scores between the pre-

test and post-test provided the quantitative basis for answering the research questions related to the impact of digital literature on reading comprehension performance.

Procedure

The data collection procedure for this study began with the researcher securing administrative approval from the school principal and the Division Research Committee, after which formal authorization to conduct the research was granted. Upon receipt of the acceptance letter, the researcher informed the Grade Six learners and their parents about the study's purpose and procedures and secured written informed consent and assent prior to implementation. The Philippine Informal Reading Inventory (Phil-IRI) Group Screening Test, administered in September 2024, served as the baseline instrument to identify the learners who fell under the frustration and instructional levels, thereby qualifying them as participants. Following this, a validated teacher-made pre-test aligned with the content of the digital literature intervention was administered to determine the learners' initial reading comprehension levels.

The test consisted of passages with corresponding questions that assessed literal, inferential, and critical comprehension. The results were quantified using a rubric validated by the School's Learning Resource Management and Development System (LRMDS) team and the school head. The intervention phase consisted of a six-week digital literature program, utilizing video-based stories with subtitles, administered during scheduled sessions. At the same time, the school head and immediate superior monitored the fidelity of implementation.

After the intervention, the same validated teacher-made test was used as the post-test to measure changes in reading comprehension. The pre-test and post-test scores were encoded, scored, and categorized into proficiency levels (frustration, instructional, or independent) based on established scoring criteria.

The data were then subjected to statistical analysis, including descriptive statistics to summarize performance and inferential statistics, such as a paired-samples t-test, to determine the significance of the improvements. This systematic, step-by-step process enabled the researcher to quantify the impact of digital literature on learners' reading comprehension and directly address the study's research questions.

Data Analysis

To analyze and interpret the data, the researcher employed a descriptive-analytical approach, utilizing a variety of statistical tools. This involved summarizing and interpreting numerical results to identify trends and patterns in learners' reading comprehension performance. The descriptive statistics utilized mean percentage scores to measure the learners' academic performance before and after the intervention. At the same time, proficiency levels (frustration, instructional, or independent) were interpreted based on a standardized descriptive scale aligned with the Phil-IRI and a validated teacher-made test rubric.

The use of inferential statistics was aimed at evaluating the effectiveness of the digital literature intervention. Specifically, a paired-samples t-test was used as the primary statistical tool to compare the pre-test and post-test scores of the same group of learners, enabling the researcher to determine whether the improvement in reading comprehension was statistically significant. The teacher-made test served as the primary instrument for data collection, consisting of structured reading passages with corresponding comprehension questions categorized into literal, inferential, and critical thinking domains.

The scores were quantitatively evaluated using the validated scoring rubric approved by the Learning Resource Management and Development System (LRMDS) evaluators. Through the combination of descriptive statistics and the paired t-test, the study provided both a numerical summary and statistical evidence of the intervention's impact on learners' comprehension levels.

Ethical Considerations

To ensure the validity, reliability, and ethical integrity of the study, multiple measures were implemented throughout the research process. The research instruments, including the digital literature-based teacher-made test and comprehension rubric, underwent content validation by a panel composed of the School Head and the Learning Resource Management and Development System (LRMDS) evaluators to establish content validity. A pilot test was also administered to a group of Grade 6 learners who were not part of the sample, and the results were statistically analyzed to determine the instrument's internal consistency and reliability. Necessary revisions were made based on expert feedback and pilot results to enhance clarity, appropriateness, and alignment with the study's objectives.

Ethical protocols were strictly observed in accordance with institutional research guidelines. The demographic information and reading performance data of the participants were treated with utmost confidentiality and were used exclusively for research purposes. All data were securely stored and permanently deleted upon the completion of the study. Participants and their parents were fully informed of the study's goals, procedures, and expected benefits, and written consent was obtained prior to participation.

The study also upheld the principle of voluntary participation, wherein learners were given the freedom to withdraw at any stage without penalty, supported by a waiver form to document their decision. These measures ensured that the study maintained academic rigor, upheld ethical standards, and produced valid and dependable findings.



Results and Discussion

The study aimed to determine the effectiveness of digital literature in improving the reading comprehension of the Grade Six learners of Jose L. Perez Memorial School SY 2023-2024.

Table 1. *Comprehension Level of Pupil- Participants in Digital Literature Intervention Activities on their Pretest Scores*

Indicator	Mean	Standard Deviation	Verbal Interpretation
Pre-Test	4.59	0.87	Developing

Table 1 presents the pre-intervention comprehension level of the pupil-participants as measured through a teacher-made test aligned with Phil-IRI standards. The mean pre-test score was 4.59 with a standard deviation of 0.87, which falls under the Developing level of proficiency. This result indicates that, prior to the implementation of the digital literature intervention, learners demonstrated limited comprehension skills, particularly in identifying main ideas, drawing inferences, and understanding vocabulary in context. A “Developing” level suggests that learners possess emerging skills but require additional scaffolding and guided practice to comprehend grade-level texts independently (Department of Education, 2021).

The relatively low mean score aligns with studies indicating that struggling readers often require multimodal and technology-mediated supports to improve comprehension (Duke & Cartwright, 2021). Furthermore, the standard deviation of 0.87 suggests moderate variation in performance among learners, implying that although most students clustered around the developing level, there were individuals who performed significantly lower, falling into the frustration level. This performance pattern validates the selection of participants under purposive sampling, as these learners represent those most in need of instructional intervention (Thomas, 2023).

These findings underscore the need for innovative teaching modalities, such as digital literature with audio-visual features, to support learners’ cognitive processing and engagement. According to Nikolopoulou (2023), digital text accompanied by multimedia elements enhances comprehension by simultaneously stimulating auditory and visual channels, thereby aiding in meaning-making. The pre-test score, therefore, establishes a critical baseline that justifies the implementation of the digital literature intervention as a pedagogical response to address comprehension gaps.

Table 2. *Comprehension Level of Pupil- Participants in Digital Literature Intervention Activities on their Posttest Scores*

Indicator	Mean	Standard Deviation	Verbal Interpretation
Post-Test	9.01	1.09	Proficient

Table 2 presents the results of the post-test administered after the implementation of the digital literature intervention. The participants obtained a mean score of 9.01 with a standard deviation of 1.09, corresponding to a Proficient level of reading comprehension. This substantial improvement from the Developing level in the pre-test to Proficient in the post-test indicates that learners demonstrated enhanced comprehension skills such as summarizing information, identifying cause-and-effect relationships, and making inferences using textual and contextual clues. According to Duke & Cartwright (2021), proficiency in comprehension reflects not only the ability to decode text but also the capacity to construct meaning through higher-order thinking processes.

The standard deviation of 1.09, though slightly higher than that of the pre-test, still indicates that the participants’ scores were relatively consistent, affirming that the majority of learners benefited from the intervention. This improvement may be attributed to the features of digital literature, such as embedded visuals and interactive subtitles, which facilitate multisensory learning and enhance knowledge retention (Nikolopoulou, 2023). These digital features align with the cognitive theory of multimedia learning, which asserts that dual-channel processing supports deeper comprehension through simultaneous auditory and visual input (Mayer, 2021).

Furthermore, the increase in mean scores demonstrates the effectiveness of the intervention in transitioning learners from lower-order to higher-order comprehension skills. This finding supports Yamac’s (2019) argument that digital reading environments can significantly improve comprehension outcomes, especially among struggling readers, by increasing engagement and reducing cognitive overload through the use of scaffolded multimedia support. The post-test scores, therefore, provide strong evidence that digital literature is a viable instructional tool in addressing comprehension challenges among elementary learners.

Table 3. *Test of Significant Difference between the Pre-test and Post-test Scores of Learners in using Digital Literature in Improving their Reading Comprehension*

Variables	t-value	p-value	Decision	Interpretation
Pretest and Posttest	23.01	0.001	Reject the Null Hypothesis	Significant

The table shows a t-value of 23.01 and a p-value of 0.001, indicating a significant difference between the learners' scores in the pretest and posttest. This indicates a significant difference between the learners' scores on the pre-test and post-test. Thus, rejecting the null hypothesis. This implies that the intervention, known as Digital Literature, has a significant impact on Grade 6 learners. The results of the study corroborate the findings of Escaro (2020), which highlighted the effectiveness of utilizing digital stories and literature in improving learners' reading comprehension. Moreover, it provides a meaningful approach to enhancing metacognition in the learning

process. This also supports the findings of Jiawook (2022), which suggests that the utilization of digital literature helps learners become independent/proficient in reading. It also strengthens motivation to read, as the integration of reading materials into technological tools aligns with the interests of learners, often referred to as digital natives in 21st-century education. The researcher demonstrated that the Digital Literature intervention activities utilized with pupils were effective in enhancing their comprehension skills. The pupils' interest level increased when they read a story and watched it at the same time. The validator suggested developing localized, or teacher-made, videos of stories to continue motivating learners and to lessen the difficulty learners have with comprehension.

Conclusions

Based on the analysis of the pre-test and post-test scores of the 17 Grade 6 learners who participated in the digital literature intervention, the study found a substantial improvement in their reading comprehension levels. As reflected in Table 1, the pre-test mean score of 4.59, with a verbal interpretation of 'Developing,' indicated that all participants initially demonstrated limited comprehension skills. Following the six-week intervention using digital literature in the form of videos with subtitles, Table 2 revealed a post-test mean score of 9.01 with a Proficient interpretation, demonstrating a remarkable enhancement in comprehension performance. Furthermore, the paired t-test results in Table 3 showed a t-value of 23.01 and a p-value of 0.001, leading to the rejection of the null hypothesis and confirming a statistically significant difference between the pre-test and post-test scores.

These findings suggest that the improvement in reading comprehension may be directly attributed to the use of digital literature as an instructional intervention, aligning with the Constructivist Learning Theory. The use of multimedia elements, such as text, visuals, and audio, likely enhanced learners' engagement and understanding, thereby supporting active knowledge construction. Overall, the study concludes that digital literature is a highly effective tool in improving reading comprehension among elementary learners and can serve as a strategic component in literacy intervention programs.

For Educational Institutions (Schools and Divisions). Schools are encouraged to adopt digital literature as a core component of their reading intervention programs, particularly for learners performing at frustration and instructional levels. The schools and school divisions should conduct professional development sessions to equip teachers with the necessary skills in selecting, evaluating, and implementing digital reading materials effectively. School heads and external stakeholders should invest in digital resources, such as tablets, projectors, and multimedia devices, to support the sustainable implementation of digital learning.

For Policy Makers and Educational Organizations. The schools division and local government units may incorporate digital literature interventions into broader literacy development frameworks at the district or division level. The schools should provide a funding mechanism to ensure equitable access to digital learning materials for all public schools.

For Future Researchers. Future studies may involve larger populations across multiple grade levels or schools to determine the generalizability of findings. Future researchers should investigate the sustained impact of digital literature over more extended periods, which may yield more profound insights into retention and independent reading development. Future researchers may also investigate the impact of digital literature on vocabulary acquisition, critical thinking, writing proficiency, and reading motivation.

References

- Bermejo, R. (2020, February 19). Google. Retrieved from Google: https://www.google.com/search?q=frustration+level+in+reading+comprehension&oq=frustration+level+in+reading+comprehension&gs_lcrp=EgZjaHJvbWUyBggAEEUYOTIKCAEQABiGAXiKBTIKCAIQABiGAXiKBTIKCAMQABiGAXiKBTIKCAQQABiGAXiKBdIBCjEyMzgwajBqMTWoAgCwAgA&sourceid=chrom
- Clements, D. H., & Sarama, J. (2023). *Learning and teaching early reading skills: Foundations for comprehension*. New York, NY: Routledge.
- Clements, J. (2023, October 5). *Teaching Comprehension Research*. Retrieved from OxfordOwl: <https://www.oxfordowl.co.uk/teaching-comprehension/research-tc>
- De la Fuente, J. A. (2023). Understanding the Philippines' reading crisis: An analysis of PISA 2018 results. *International Journal of Educational Development*, 95(2), 102-115.
- Department of Education. (2018). *Implementing guidelines on the administration of the Philippine Informal Reading Inventory (Phil-IRI)*. DepEd Order No. 14, s. 2018. <https://www.deped.gov.ph/>
- Department of Education. (2021). *Phil-IRI manual for teachers*. DepEd.
- Duke, N. K., & Cartwright, K. B. (2021). The science of reading comprehension instruction. *The Reading Teacher*, 74(6), 663–672.
- Escaro, J. P. Utilization of digital stories in improving the reading comprehension of learners with autism spectrum disorder.
- Jiawook, L. (2022). *The Effectiveness of Digital Reading for Motivating Student Reading and Vocabulary Development: Effektiviseringen av digital läsning för att motivera elevernas läsning och ordförrådsutveckling*.



Kurt, S. (2021). Constructivist learning theory. *Educational Technology Journal*. <https://educationaltechnology.net/constructivist-learning-theory/>

Kurt, S. (2021, February 21). Frameworks and Theories. Retrieved from *Educational Technology*: <https://educationaltechnology.net/constructivist-learning-theory/>

Navarro, A. (2023, October 9). Digital Literature Final Project. Retrieved from *Scalar*: <https://scalar.usc.edu/works/digital-literature-final-project/what-is-digital-literature>.

Navarro, M. L. (2023). Digital literature and learner engagement in the 21st-century classroom. *Asia Pacific Journal of Educational Technology*, 12(1), 45–58.

Nikolopoulou, K. (2023). Digital learning and student engagement: Implications for literacy development. *Education and Information Technologies*, 28(1), 1123–1139.

Nikolopoulou, K. (2023, June 22). What Is Purposive Sampling? | Definition & Examples. Retrieved from *Scribbr*: <https://www.scribbr.com/methodology/purposive-sampling/>

Republic Act No. 10533, Enhanced Basic Education Act of 2013, (2013). <https://www.officialgazette.gov.ph/>

Thomas, L. (2023, June 22). Quasi-Experimental Design | Definition, Types & Examples. Retrieved from *Scribbr*: <https://www.scribbr.com/methodology/quasi-experimental-design/#:~:text=Like%20a%20true%20experiment%2C%20a,based%20on%20non%20random%20criteria>.

Thomas, S. (2023). *Research design in educational interventions*. Academic Press.

Yamac, A. (2019). How Digital Reading Differs from Traditional Reading: An Action Research. *International Journal of Progressive Education*, 208-209.

Yamac, A., & Ulusoy, M. (2019). How digital reading differs from traditional reading: An action research study on reading comprehension. *Education and Information Technologies*, 24(1), 627–642. <https://doi.org/10.1007/s10639-018-9784-3>

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