



## Effectiveness of E-Flipbooks in Reading Comprehension Among Grade 2 Learners

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### Abstract

This study examined the effectiveness of e-flipbooks in improving the reading comprehension of Grade 2 learners at Liputan Integrated School, Meycauayan City, Bulacan, Philippines during the school year 2025–2026. It was conducted to address the need for engaging digital reading materials that may support early-grade learners who experience difficulty in understanding texts, identifying key ideas, and sustaining participation in reading activities. The study was anchored on Mayer’s Cognitive Theory of Multimedia Learning and Paivio’s Dual-Coding Theory, which explain that learners may understand texts better when verbal information is supported by visual, audio, and interactive elements. A quasi-experimental pre-test–post-test non-equivalent control group design was employed. The participants were 26 Grade 2 learners, composed of 12 learners in the control group and 14 learners in the experimental group. The control group used traditional printed reading materials, while the experimental group was exposed to e-flipbooks with multimedia and interactive features such as audio narration, visual presentation, animations, and interactive quizzes. Data were collected through pre-test and post-test reading comprehension assessments. The results were analyzed using mean, median, mode, standard deviation, skewness, kurtosis, mean gain scores, paired-samples t-test, and Welch independent-samples t-test. Findings revealed that both groups improved after the intervention, but the experimental group showed a higher level of improvement. The control group obtained a post-test mean of 22.64, while the experimental group obtained a post-test mean of 31.82. The experimental group also recorded a higher mean gain score of 13.46 compared with the control group’s mean gain of 4.00. The post-test comparison showed a significant difference between the two groups, indicating that learners exposed to e-flipbooks performed better than those who used printed reading materials. The study concludes that e-flipbooks are effective supplementary instructional tools for improving reading comprehension among Grade 2 learners. It is recommended that teachers integrate e-flipbooks into reading instruction with guided activities, vocabulary support, and comprehension questions. School administrators may also provide digital resources and teacher training to support the effective use of technology-based reading materials in primary education.

**Keywords:** E-flipbooks, Reading Comprehension, Grade 2 Learners, Multimedia Learning, Digital Literacy

### 1. Introduction

Reading comprehension is one of the most essential literacy skills developed during the early years of education. At the Grade 2 level, learners transition from learning to read toward reading to learn. However, many pupils continue to experience difficulty understanding texts, identifying main ideas, and



drawing meaning from stories. In the Philippine educational context, low reading comprehension performance remains a challenge among elementary learners.

The integration of technology in education has introduced innovative strategies to improve literacy instruction. One of these tools is the e-flipbook, a digital and interactive reading material that combines text, images, sounds, animations, and quizzes. E-flipbooks create a multimodal learning environment that can motivate young learners and improve comprehension (Norman, 2023). Recent evidence shows that digital books can support young children's reading when their multimedia features are meaningfully connected to the story. Furenes, Kucirkova, and Bus (2021) found that children's reading outcomes vary between paper and screen formats, but digital books become more beneficial when design enhancements directly support comprehension. Bus, Kucirkova, and ten Braak (2025) also found that interactive features in digital picture books may improve story comprehension when they support meaning-making rather than distract from the reading task. These findings suggest that e-flipbooks may be useful in early-grade reading instruction when audio narration, visuals, animation, and interactive tasks are aligned with the learning objective.

In the Philippines, the Department of Education (2017; 2019; 2022) has encouraged the use of digital resources to support literacy development and 21st-century learning.

This study aimed to determine the effectiveness of e-flipbooks in improving the reading comprehension of Grade 2 learners at Liputan Integrated School.

### Significance of the Study

This study is significant to various stakeholders in the field of education, particularly in enhancing the reading comprehension of Grade 2 learners through the use of e-flipbooks. Grade 2 learners may benefit from engaging and interactive reading materials that can improve their comprehension skills, motivation, and participation in reading activities. Teachers may use the findings to identify effective instructional strategies and digital tools that support literacy instruction and learner-centered teaching. School administrators may use the results as a basis for strengthening technology integration programs, providing digital resources, and supporting teacher training. Parents may also be encouraged to support the use of educational technologies at home to reinforce children's reading habits and comprehension skills. Curriculum developers may draw insights from the study in designing innovative, technology-based instructional materials aligned with 21st-century learning goals. Future researchers may use this study as a reference for further investigations on digital learning, e-flipbooks, reading comprehension, and technology-enhanced literacy instruction. tools, reading comprehension, and multimedia-based instruction in elementary education.

### Conceptual Framework

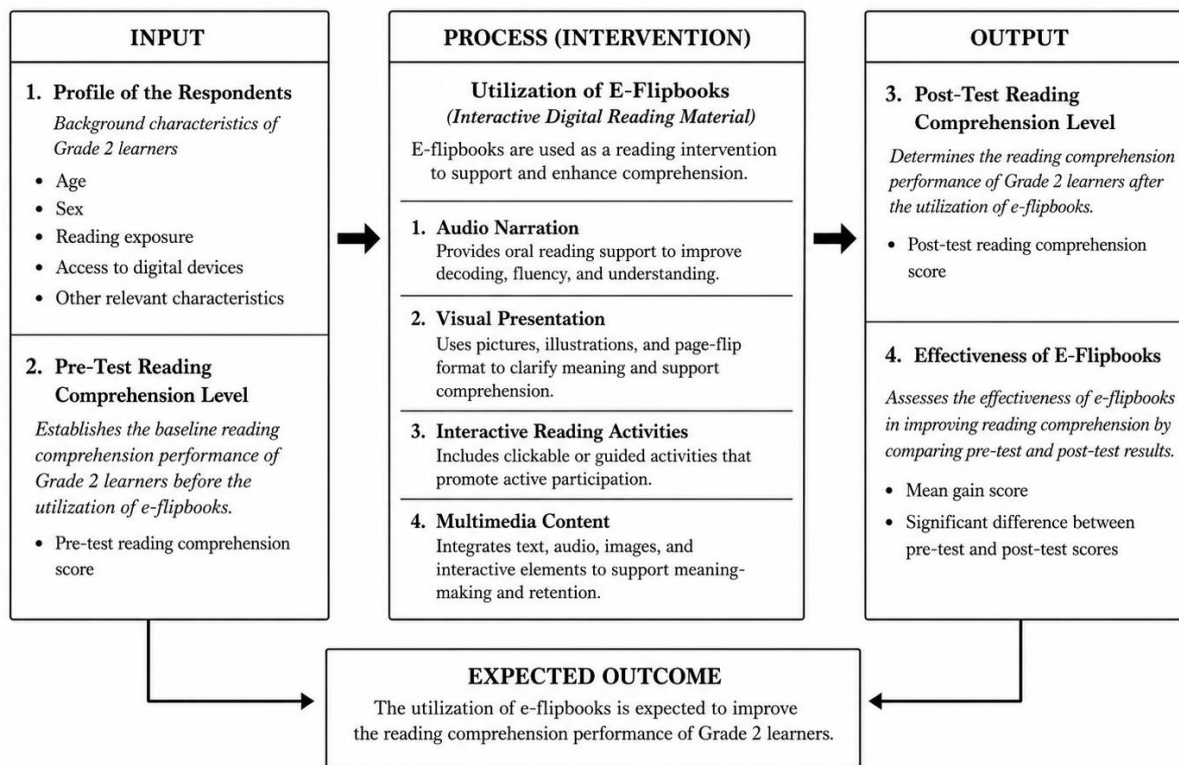


Figure 1: Schematic Diagram of the Conceptual Framework of the Study

Figure 1 presents the conceptual framework of the study using an Input–Process–Output structure. The framework shows how the utilization of e-flipbooks is expected to improve the reading comprehension performance of Grade 2 learners. The input includes the profile of the respondents and their pre-test reading comprehension level. The profile describes the background characteristics of the Grade 2 learners, such as age, sex, reading exposure, access to digital devices, and other relevant characteristics. These variables provide a clearer description of the learners who will participate in the study. The pre-test reading comprehension level establishes the learners’ baseline performance before they are exposed to the e-flipbook intervention. The process refers to the utilization of e-flipbooks as an interactive digital reading material. In this study, e-flipbooks serve as the main reading intervention. They include audio narration, visual presentation, interactive reading activities, and multimedia content. These features are intended to support decoding, fluency, comprehension, participation, meaning-making, and retention. Through these features, the e-flipbook is expected to make reading more engaging and easier for Grade 2 learners to understand. The output includes the learners’ post-test reading comprehension level and the measured effectiveness of the e-flipbooks. The post-test determines the learners’ reading comprehension performance after the intervention. The effectiveness of e-flipbooks will be assessed by comparing the pre-test and post-test results. Improvement may be shown through the mean gain score and the significant difference between the learners’ scores before and after the intervention. The framework illustrates that the learners’ initial profile and baseline reading comprehension level serve as the starting point of the study. The e-flipbook intervention is then introduced as the instructional process. The



expected outcome is an improvement in the reading comprehension performance of Grade 2 learners after using e-flipbooks.

### Aim of the Study

The aim of this study is to determine the effectiveness of e-flipbooks in improving the reading comprehension of Grade 2 learners at Liputan Integrated School. It specifically examines the learners' reading comprehension performance before and after the use of e-flipbooks and determines whether interactive digital reading materials contribute to better comprehension outcomes and increased learner engagement.

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### Objectives of the Study

This study specifically aims to:

1. Describe the profile of the Grade 2 learner-respondents.
2. Determine the reading comprehension level of the learners before the use of e-flipbooks.
3. Determine the reading comprehension level of the learners after the use of e-flipbooks.
4. Evaluate the effectiveness of e-flipbooks in improving the reading comprehension of Grade 2 learners.
5. Assess the extent to which e-flipbooks enhance learner engagement during reading activities.

### The study tested the following null hypotheses:

1. There is no significant difference in the reading comprehension performance of Grade 2 learners before and after the utilization of e-flipbooks.
2. There is no significant difference in the post-test reading comprehension scores of Grade 2 learners exposed to e-flipbooks and those taught using traditional printed reading materials.

## 2. Literature Review

The study is anchored on Mayer's Cognitive Theory of Multimedia Learning, which explains that learners understand concepts better when words and pictures are presented together rather than through words alone. This theory is relevant to early-grade reading because e-flipbooks combine text, images, narration, and interactive features. These elements may help Grade 2 learners process reading materials through both verbal and visual channels. Mayer and Fiorella's (2021) updated work also emphasized that well-designed multimedia materials can support meaningful learning when unnecessary cognitive load is reduced and learners' attention is directed to essential information (Mayer, 2005). Thus, e-flipbooks may help present stories and reading texts in a more concrete and understandable manner. The role of multimedia features in children's reading has also been supported by meta-analytic evidence. Takacs, Swart, and Bus (2015) found that technology-enhanced storybooks produced small but significant benefits for children's story comprehension and expressive vocabulary. However, they also cautioned that interactive features may become distracting when they are not directly related to the story. This finding is relevant to the present study because the effectiveness of e-flipbooks depends not only on the presence of multimedia features, but also on whether these features guide pupils toward understanding the text.

The study is also supported by Paivio's Dual-Coding Theory (1991), which states that learning improves when verbal and visual information are processed together. In reading instruction, this means that learners may better understand and remember texts when written words are supported by pictures,



sounds, and visual cues. E-flipbooks apply this principle because they expose learners to text, images, and audio support. These features are useful for Grade 2 learners who are still developing vocabulary, decoding, sequencing, and comprehension skills.

Recent studies further support the use of digital and interactive reading materials in children's literacy development. Chuang (2023) reported that multimedia features such as narration, dictionaries, background sound, and interactive support can help early literacy when they are properly designed and aligned with reading goals. Similarly, recent evidence on children's digital picture books shows that interactive features may improve comprehension when they directly support meaning-making rather than distract learners. Features such as narration, meaningful animation, embedded questions, and vocabulary support are useful when connected to the story and reading task.

Comparative research also provides a balanced view of digital and print reading. Li (2024) found that reading outcomes may vary across digital and paper formats, and that multimedia features can support comprehension when used appropriately. Therefore, e-flipbooks should not be treated as a replacement for printed texts. Instead, they may serve as supplementary materials when combined with guided reading, questioning, vocabulary discussion, and follow-up comprehension activities. The comparison between digital and printed reading materials should be interpreted carefully. Furenes et al. (2021) reported that children do not automatically comprehend better simply because a text is presented on screen. Their meta-analysis showed that digital reading becomes more effective when enhancements are story-congruent and instructionally relevant. This supports the use of e-flipbooks not as replacements for printed texts, but as structured supplementary tools that can make reading more accessible through narration, visuals, and guided interaction.

Digital reading instruction is also aligned with current school-based literacy initiatives. Recent reviews show that technology-supported reading tools may improve comprehension when instruction remains structured, purposeful, and teacher-guided. These tools may support learners through narration, visual scaffolds, feedback, and interactive tasks. In the Philippine context, the Department of Education's Digital Rise Program supports the use of educational technologies through infrastructure, software, and capacity building for teachers and learners. This makes the present study timely, as it examines the effectiveness of e-flipbooks in improving the reading comprehension of Grade 2 learners at Liputan Integrated School.

### 3. Methodology

This study employed a quasi-experimental research design, specifically the pre-test–post-test non-equivalent control group design, to determine the effectiveness of e-flipbooks in improving the reading comprehension of Grade 2 learners. This design was appropriate because the participants were taken from existing Grade 2 classes and were not randomly assigned to groups. This is consistent with the logic of quasi-experimental research, where naturally occurring groups may be compared through pre-test and post-test measures when random assignment is not feasible in school settings (Reichardt, 2019). The participants of the study were 26 Grade 2 learners of Liputan Integrated School. They were divided into two groups: the experimental group and the control group. The experimental group was exposed to e-flipbooks as the reading intervention, while the control group used traditional printed reading materials. The e-flipbooks contained multimedia features such as audio narration, visual presentations, animations, and interactive quizzes intended to support reading engagement and comprehension.

Before the intervention, both groups were given a pre-test to determine their baseline reading comprehension performance. After the intervention period, both groups were given a post-test using a comparable reading comprehension assessment. The pre-test and post-test scores were used to



determine whether there was an improvement in the learners’ reading comprehension and whether the e-flipbook intervention produced better results than the traditional printed materials.

The data were analyzed using descriptive statistics such as mean, median, mode, skewness, and kurtosis to describe the distribution and overall performance of the learners. To determine the effectiveness of the intervention, the pre-test and post-test results of the experimental and control groups may also be compared using appropriate inferential statistics, such as a paired-samples t-test for within-group improvement and an independent-samples t-test for between-group post-test differences, depending on the normality of the data.

Ethical considerations were observed throughout the study. Permission from the school administration was secured before the conduct of the study. Informed consent from parents or guardians and assent from the learners were obtained. The participation of the learners was voluntary, and their identities and responses were treated with confidentiality. The study also ensured that the reading activities were appropriate for the learners’ grade level and did not expose them to any form of harm or discomfort.

### 3. Results and Findings

This section presents the results of the study on the effectiveness of e-flipbooks in improving the reading comprehension of Grade 2 learners. The results are organized according to the profile of the respondents, baseline reading comprehension performance, post-test performance, mean gain scores, and overall effectiveness of the intervention. The study compared the performance of the control group, which used traditional printed reading materials, and the experimental group, which used e-flipbooks with multimedia and interactive features. The draft manuscript indicates that the experimental group was exposed to e-flipbooks, while the control group used traditional printed materials. It also states that pre-test and post-test scores were used to determine improvement in reading comprehension.

#### Profile of the Respondents

Table 1. Profile of the Respondents by Group and Sex

Group	Boys	Girls	Total
Control Group	7	5	12
Experimental Group	7	7	14
<b>Total</b>	<b>14</b>	<b>12</b>	<b>26</b>

As shown in Table 1, the study involved **26 Grade 2 learners**, composed of **14 boys** and **12 girls**. The control group had **12 pupils**, while the experimental group had **14 pupils**. The distribution shows that both groups had a relatively balanced number of boys and girls. This helped reduce the possibility that sex would influence the reading comprehension results. In intervention studies, balanced group composition strengthens internal validity because post-test differences can be more fairly attributed to the instructional treatment rather than to demographic imbalance. Since both groups had comparable representation, the effect of the e-flipbook intervention could be examined with less risk of demographic bias.



**Pre-Test Reading Comprehension Performance**

**Table 2. Pre-Test Descriptive Statistics of the Control and Experimental Groups**

Group	n	Mean	Median	Mode	SD	Skewness	Kurtosis	Performance Level
Control Group	12	18.64	19.00	18, 19, 20	2.11	-0.17	-0.80	Good
Experimental Group	14	18.36	18.00	17, 18, 19	2.11	0.17	-0.80	Good

The pre-test results in Table 2 show that both groups had comparable baseline reading comprehension performance before the intervention. The control group obtained a mean score of **18.64**, while the experimental group obtained a mean score of **18.36**. Both means fall under the **Good** performance level. This indicates that the pupils in both groups already had a moderate level of reading comprehension before the use of either traditional printed materials or e-flipbooks. The small difference between the two mean scores suggests that the two groups were nearly equivalent at baseline.

The median scores further support this interpretation. The control group obtained a median of **19.00**, while the experimental group obtained a median of **18.00**. These values are close to their respective mean scores. This indicates that the pre-test scores were balanced and were not strongly affected by extreme values. The modes also show that most pupils scored within a narrow range. The control group had modes of **18, 19, and 20**, while the experimental group had modes of **17, 18, and 19**. This clustering indicates that most pupils had similar reading comprehension levels before the intervention.

The standard deviation for both groups was **2.11**, which shows low variability in the scores. This means that the pupils' performances were closely grouped around the mean. The skewness values of **-0.17** for the control group and **0.17** for the experimental group also show that the distributions were nearly symmetrical. The kurtosis value of **-0.80** in both groups indicates a platykurtic distribution, suggesting that the scores were spread across the middle range without extreme outliers. Overall, the pre-test results show that both groups had stable and comparable baseline reading comprehension performance.

These findings are important in a quasi-experimental study because baseline comparability supports the validity of later comparisons. Creswell and Creswell (2018), Field (2018), and Fraenkel et al. (2019) emphasized that comparable pre-test performance helps determine whether post-test differences may be attributed to the intervention rather than to pre-existing differences among learners. The results may also be explained through Vygotsky's Social Constructivist Theory and Bartlett's Schema Theory. Since the pupils came from the same school setting and had similar prior learning experiences, their baseline comprehension scores were expected to be closely related.

**Post-Test Reading Comprehension Performance**

**Table 3. Post-Test Descriptive Statistics of the Control and Experimental Groups**

Group	n	Mean	Median	Mode	SD	Skewness	Kurtosis	Performance Level
Control Group	12	22.64	23.00	23	2.17	0.10	-1.02	Good
Experimental Group	14	31.82	32.00	32	2.52	0.10	-0.73	Very Good

The post-test results in Table 3 show that both groups improved after the instructional period. However, the improvement of the experimental group was much higher than that of the control group. The control group obtained a post-test mean score of **22.64**, which remained within the **Good** performance level. This suggests that traditional printed materials helped improve reading comprehension, but the improvement was moderate.



The experimental group obtained a post-test mean score of **31.82**, which falls under the **Very Good** performance level. This indicates that the pupils exposed to e-flipbooks showed stronger improvement in reading comprehension. The post-test median of the experimental group was **32.00**, which closely aligns with the mean score of **31.82**. The mode was also **32**, suggesting that many pupils reached a high level of performance after using e-flipbooks. The manuscript reports that the experimental group achieved a post-test mean of **31.82**, compared with the control group's post-test mean of **22.64**.

The post-test standard deviation of the control group was **2.17**, while the experimental group had a standard deviation of **2.52**. These values show that the scores in both groups remained relatively consistent. The slightly higher standard deviation in the experimental group suggests some natural variation in the level of improvement, but most learners still performed within the higher range. The skewness value of **0.10** for both groups indicates nearly symmetrical score distributions. The kurtosis values of **-1.02** for the control group and **-0.73** for the experimental group indicate that both groups had balanced distributions without extreme score distortions.

The results suggest that the e-flipbook intervention supported greater reading comprehension gains than traditional printed materials. This may be explained through Mayer's Cognitive Theory of Multimedia Learning, which states that learners understand information better when words and visuals are presented together. Since the e-flipbooks combined text, images, narration, and interactive features, pupils were given multiple ways to process reading content. This interpretation is also consistent with Paivio's Dual-Coding Theory, which explains that learning improves when verbal and visual information are processed together. Studies by Furenes et al. (2021), and Chuang (2023) also support the use of interactive digital reading tools when multimedia features are aligned with reading goals.

Mean Gain Scores

Table 4. Mean Gain Scores of the Control and Experimental Groups

Group	Pre-Test Mean	Post-Test Mean	Mean Gain	Interpretation
Control Group	18.64	22.64	4.00	Improved
Experimental Group	18.36	31.82	13.46	Strongly Improved

The mean gain scores in Table 4 show that both groups improved from pre-test to post-test. The control group increased from **18.64** to **22.64**, producing a mean gain of **4.00** points. This indicates that traditional printed materials supported reading comprehension improvement. However, the increase remained modest.

The experimental group increased from **18.36** to **31.82**, producing a mean gain of **13.46** points. This gain was more than three times higher than the gain of the control group. The difference in mean gain scores was **9.46** points in favor of the experimental group. This indicates that the e-flipbook intervention had a stronger effect on pupils' reading comprehension than traditional printed materials.

The result suggests that e-flipbooks helped learners move beyond basic literal understanding toward stronger comprehension performance. The interactive features may have increased attention, motivation, and engagement during reading. This supports the Technology Acceptance Model, which explains that learners are more likely to benefit from digital tools when they find them useful and easy to use. The finding also supports Self-Determination Theory, which emphasizes that learners perform better when they feel motivated and actively involved in the learning process.





**Comparative Effect of E-Flipbooks and Traditional Printed Materials**

**Table 5. Comparison of Reading Comprehension Performance Between Groups**

Comparison	Control Group	Experimental Group	Difference
Pre-Test Mean	18.64	18.36	0.28
Post-Test Mean	22.64	31.82	9.18
Mean Gain	4.00	13.46	9.46

The pre-test mean difference between the two groups in Table 5 was only **0.28**, showing that the groups had nearly the same reading comprehension level before the intervention. This supports the baseline comparability of the groups. However, the post-test mean difference increased to **9.18** points in favor of the experimental group. This shows that the learners exposed to e-flipbooks performed much better after the intervention than those who used traditional printed materials.

The difference in gain scores further confirms the stronger effect of e-flipbooks. While the control group improved by **4.00** points, the experimental group improved by **13.46** points. This indicates that the e-flipbook intervention produced a larger improvement in reading comprehension. The multimedia and interactive elements may have helped pupils understand the reading passages more clearly, sustain attention, and participate more actively in reading tasks.

The findings support the view that e-flipbooks should not simply be treated as digital replacements for printed materials. Rather, they may serve as supplementary instructional tools that enhance reading comprehension when used with teacher guidance, questioning, vocabulary support, and follow-up comprehension activities. Li (2024) noted that digital reading outcomes depend on how multimedia and interactive features are used. Chuang (2023) likewise emphasized that interactive reading applications are effective when their features are properly designed and aligned with literacy goals.

**Test of Significant Difference**

The present draft discusses improvement and effectiveness mainly through descriptive statistics. However, the stated hypotheses require inferential testing. Since the raw scores and computed t-test values were not provided in the manuscript, the table below should be completed once the paired-samples t-test and independent-samples t-test have been computed.

**Table 6. Test of Significant Difference in Reading Comprehension Scores**

Comparison	Test Used	Mean Before	Mean After	Mean Difference	Computed Value	df	p-value	Decision	Interpretation
Control Group Pre-Test vs Post-Test	Paired-samples t-test	18.64	22.64	4.00	6.47	11	< .001	Significant	The control group showed a significant improvement after using traditional printed materials.
Experimental Group Pre-Test vs Post-Test	Paired-samples t-test	18.36	31.82	13.46	21.55	13	< .001	Significant	The experimental group showed a significant improvement



Comparison	Test Used	Mean Before	Mean After	Mean Difference	Computed Value	df	p-value	Decision	Interpretation
									after using e-flipbooks.
Control Group vs Experimental Group Post-Test	Welch independent-samples t-test	22.64	31.82	9.18	-9.98	24	< .001	Significant	The experimental group performed significantly higher than the control group in the post-test.

Table 6 shows that both groups improved significantly from pre-test to post-test. The control group improved by 4.00 points, indicating that traditional printed materials helped improve reading comprehension. However, the experimental group improved by 13.46 points, showing a much larger gain after exposure to e-flipbooks.

The post-test comparison also shows a significant difference between the two groups,  $t(24) = -9.98$ ,  $p < .001$ . This means that the experimental group performed significantly better than the control group after the intervention. Therefore, the null hypothesis stating that there is no significant difference between the post-test scores of learners exposed to e-flipbooks and those taught using traditional printed materials is rejected.

### Summary of Results

Table 7. Summary of the Results of the Study

Objective	Key Result	Interpretation
Describe the profile of the respondents	14 boys and 12 girls participated in the study	The groups had a relatively balanced sex distribution
Determine the pre-test reading comprehension level	Control group: 18.64; Experimental group: 18.36	Both groups started at a Good level and were comparable at baseline
Determine the post-test reading comprehension level	Control group: 22.64; Experimental group: 31.82	The experimental group achieved a Very Good level after using e-flipbooks
Evaluate the effectiveness of e-flipbooks	Experimental gain: 13.46; Control gain: 4.00	E-flipbooks produced a stronger improvement than printed materials
Assess engagement during reading activities	E-flipbooks used narration, visuals, animation, and interactive quizzes	The intervention likely increased learner participation and active reading

The results in Table 7 show that both groups improved after the instructional period. However, the experimental group showed a much larger improvement than the control group. The control group remained within the **Good** performance level, while the experimental group reached the **Very Good** performance level. This indicates that e-flipbooks were more effective than traditional printed materials in improving the reading comprehension of Grade 2 learners.

The findings support the use of e-flipbooks as interactive and learner-centered reading materials. The combination of text, images, narration, and interactive activities may have helped pupils process reading content more effectively. This aligns with Mayer's Cognitive Theory of Multimedia Learning and Paivio's



Dual-Coding Theory, which both support the use of verbal and visual channels in learning. Overall, the results indicate that e-flipbooks can be used as effective supplementary tools for improving reading comprehension in early-grade literacy instruction.

## 5. Discussion

The study confirms that e-flipbooks are effective tools in improving reading comprehension among Grade 2 learners. The multimedia and interactive features increased learner engagement and promoted active participation during reading sessions.

The findings support Mayer's Cognitive Theory of Multimedia Learning, which emphasizes the effectiveness of combining visuals and auditory materials in learning. Learners exposed to e-flipbooks demonstrated higher levels of motivation and understanding compared to those using traditional printed materials. The finding is consistent with recent evidence that digital reading tools are most effective when multimedia elements are purposeful and connected to comprehension tasks. Norman (2023) emphasized that educational technology for reading instruction can support literacy development when it is implemented with clear instructional guidance. Similarly, Chuang and Jamiat (2023) noted that interactive reading applications are more useful when narration, feedback, dictionaries, and other multimedia features are aligned with emergent literacy goals. Thus, the higher post-test performance of the experimental group may be explained by the combined use of text, audio, visual cues, and interactive activities that supported comprehension during reading.

The results also align with previous studies indicating that interactive reading materials improve comprehension, retention, and learner participation.

## 6. Conclusion and Recommendations

The study concludes that e-flipbooks significantly improve the reading comprehension of Grade 2 learners. The integration of interactive multimedia elements created meaningful learning experiences that enhanced comprehension and engagement.

It is recommended that teachers integrate e-flipbooks into reading instruction to support literacy development. School administrators should provide technological resources and training to maximize the use of digital learning tools. Teacher guidance should remain part of e-flipbook implementation because digital reading materials are more effective when teachers help pupils focus on vocabulary, story meaning, and comprehension questions rather than allowing pupils to use interactive features without instructional direction. This point is supported by Furenes et al. (2021), who found that adult mediation and story-congruent digital enhancements influence children's comprehension outcomes.

Future researchers may explore the long-term effects of e-flipbooks on other literacy skills such as vocabulary development and reading motivation.



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