

Development of Canva-Based Digital Teaching Materials Integrated with Flipbook for Reading Comprehension in Multigrade Classroom at CLC SD Ladong, Kuching, Sarawak

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ABSTRACT

Multigrade learning at CLC SD Ladong, Simunjan, Kuching, Sarawak still faces challenges related to the limited availability of teaching materials that meet students' learning needs, which affects students' reading comprehension skills. This study aimed to develop Canva-based digital teaching materials integrated with Flipbook that are feasible, practical, and effective in supporting reading comprehension learning. The study employed a *Research and Development (R&D)* method using the ADDIE model, consisting of the stages of *analysis, design, development, implementation, and evaluation*. The research subjects were students in multigrade classes III and IV at CLC SD Ladong. Data were collected through observations, interviews, questionnaires, and reading comprehension tests. Product feasibility was evaluated through material and media expert validation, while practicality was measured through teacher and student response questionnaires. Effectiveness was analyzed using a *one-group pretest-posttest* design, followed by the Wilcoxon Signed Rank Test and N-Gain analysis. The findings revealed that the developed teaching materials achieved the category of highly feasible, with material expert validation scores of 61/70 and media expert validation scores of 73/80. Teacher responses reached 93% and student responses 97.2%, indicating a highly practical category. The Wilcoxon test results showed a value of $Z = -4.429$ with Asymp. Sig. (2-tailed) = 0.000 (< 0.05), indicating a significant improvement. The N-Gain score was 0.82 (81.7%), categorized as high. Therefore, the Canva-Flipbook-based digital teaching materials were proven to be feasible, practical, and effective in improving reading comprehension skills among multigrade students.

1. INTRODUCTION

The Merdeka Curriculum places literacy as a primary competency in Indonesian language learning at the elementary school level. One of the important literacy skills to develop is reading comprehension skills because this ability plays a role in helping students understand, interpret, and obtain information from reading texts. According to Tarigan (2015), reading is the process of obtaining the message conveyed by the writer thru written language, while Dalman (2020) states that reading comprehension emphasizes the thinking activity to understand the meaning of the reading thoroughly. Somadayo (2011) adds that reading comprehension is an active process that involves the ability to connect prior knowledge with information in the text. Furthermore, Abidin (2021) explains that reading comprehension skills not only focus on reading fluency but also on students' ability to critically understand the content, main ideas, and messages of the reading. According to Rahim (2019), reading comprehension skills are a crucial foundation in the development of students' academic abilities because almost the entire learning process requires reading activities. Reading comprehension skills are a crucial foundation for students' academic success at the next level of education (Balantekin, 2025). This is reinforced by Burns et al. (1996) who state that reading is the main foundation in acquiring knowledge and building students' thinking skills. In addition, Nurgiyantoro (2010) explains that low reading comprehension skills will impact students' ability to

understand other subject matter. According to Anderson (1972), reading comprehension involves the processes of decoding, interpreting, and evaluating the meaning of the text, so appropriate teaching strategies are needed for students to understand the reading material optimally. However, the reading comprehension skills of elementary school students are still relatively low. UNESCO data (2024) shows that most elementary school students still have difficulty understanding simple texts. Fiester's (2010) research also explains that students' reading ability at the end of third grade is an important predictor of future academic success. This condition highlights the importance of using innovative media and teaching materials in reading comprehension instruction. According to Mayer (2009), the use of learning multimedia that combines text, images, and interactive visuals can help students understand the material more effectively compared to conventional learning. Additionally, Munir (2017) explains that digital learning materials can enhance students' motivation because they are more flexible, interactive, and easily accessible.

The development of digital technology provides opportunities for the development of innovative learning media, one of which is thru the use of Canva and Flipbook. According to Patmasari et al. (2024), Canva is a digital design platform that can help teachers create engaging and creative visual learning media. Fitria (2024) states that digital Flipbook media can increase students' interest in reading because it provides an interactive learning experience that resembles a real book. Furthermore, Sari & Yatri (2023) explain that interactive digital learning materials effectively enhance student engagement in elementary school learning. Recent research also shows that the use of interactive digital media can enhance the reading comprehension skills of elementary school students. The research by Sakinah & Nuroh (2025) shows that the use of digital Flipbooks can enhance students' reading comprehension skills because the material is presented in a more engaging and interactive manner. Additionally, the research by Widodo et al. (2025) states that learning media based on Canva and Flipbook effectively enhances students' conceptual understanding thru more innovative and enjoyable visual presentations. International research by Roemintoyo & Budiarto (2021) in the *Journal of Educational Technology* explains that the use of digital flipbooks in reading instruction significantly enhances reading engagement and comprehension among elementary school students. Another study by Alqahtani et al. (2022) in the *International Journal of Emerging Technologies in Learning* shows that interactive multimedia-based learning media can enhance student motivation and learning outcomes in literacy education. Additionally, research by Tedla & Chen (2024) in *Education and Information Technologies* states that the integration of digital visual media in reading instruction helps students understand the content of texts more quickly and enhances critical thinking skills.

The problem was found among students in combined III and IV classes at CLC SD Ladong, Simunjan, Kuching, Sarawak. Based on the results of observations and interviews, reading instruction still uses conventional methods with limited and less interactive teaching materials. This condition becomes even more complex because the learning is conducted in the form of multi-grade classes, where one teacher teaches more than one grade level simultaneously. According to Little (2006), multigrade learning requires appropriate strategies and media to optimally accommodate the diverse learning needs of students. This opinion is supported by UNESCO (2015), which states that the success of multigrade learning is greatly influenced by the teacher's creativity in developing innovative teaching materials and learning media. Several previous studies have focused more on the use of Flipbook or Canva separately in general learning. However, research on the development of digital teaching materials based on Canva integrated with Flipbook for reading comprehension learning in the context of multigrade classes in CLC is still very limited. Thus, there is a research gap in the development of digital teaching materials tailored to the characteristics of multi-grade students, particularly in the CLC environment. Based on this issue, this study employs a Research and Development (R&D) approach using the ADDIE model to develop Canva-based digital teaching

materials integrated with Flipbook that are feasible, practical, and effective in improving reading comprehension skills of multi-grade III and IV students at CLC SD Ladong, Simunjan, Kuching, Sarawak.

2. METHODS

This research uses the Research and Development (R&D) method with the ADDIE development model, which includes the stages of Analysis, Design, Development, Implementation, and Evaluation. The research aims to develop digital teaching materials based on Canva integrated with Flipbook for reading comprehension skills learning for multi-grade students. The research was conducted in 4 CLCs in the Kuching area, Sarawak, Malaysia. For the research subjects, they were students in combined III and IV classes, aged 8 to 9 years, who are in the concrete operational stage of development, thus beginning to understand cause-and-effect relationships, make predictions, and comprehend simple reading materials. In addition to the students, the class teacher, subject matter experts, and media experts were also involved in the product validation process. In this case, all students have diverse reading abilities with limited learning environments, particularly in terms of the availability of teaching materials and access to technology. Most students are not yet accustomed to using digital learning materials intensively, so the development of the Canva-Flipbook media is aimed at enhancing engagement, motivation, and reading comprehension skills. The following explains the research subjects in the table below.

Table 1. Number of Research Subjects

Name of CLC	Number of Students (n)	Grade III	Grade IV
CLC Batu Lintang	3 Students	1P	L2
CLC Retus Rantau	10 Students	5P	5P
CLC Sebakong	15 Students	L5,P2	5L,3P
CLC Ladong	25 Students	L5,P5	8L,7P
amount (L)	25		
amount (P)	28		
Total	53		

The analysis stage is conducted thru observation and interviews to identify learning needs and the complexity of students' reading comprehension. The design stage includes the preparation of materials, storyboards, open material displays, and research instruments. Next, in the development stage, the teaching materials were created using the Canva application and integrated into a Flipbook, then validated by subject matter experts and media experts. The implementation stage was carried out in 3 different CLCs, namely thru one-to-one trials at CLC Batu Lintang, small group trials at CLC Retus Rantau, field trials at CLC Sebakong, and implementation trials or field tests at CLC Ladong. The one-to-one trial stage involved 3 students and 1 teacher, the small group trial stage involved 10 students and 1 teacher, while the field trial stage involved 15 students and 1 teacher. The implementation test was conducted on 25 students from combined grades III and IV at CLC SD Ladong. The selection of subjects was carried out by considering the characteristics of students in combined classes and their diverse reading comprehension abilities. The evaluation stage is conducted to determine the feasibility, practicality, and effectiveness of the product. Data collection techniques used include observation, interviews, questionnaires, and reading comprehension tests. Data in this study were analyzed using qualitative and quantitative analysis techniques. Qualitative data obtained thru observations, interviews, and validator suggestions were descriptively analyzed to illustrate learning needs and product improvements. Quantitative data were obtained from expert validation results, teacher and student response questionnaires, as well as pretest and posttest results.

Data analysis was conducted using descriptive statistics to determine the feasibility and practicality levels of the product in percentage form. The effectiveness of the product is analyzed using normality tests, paired sample t-tests, and N-Gain calculations. Additionally, a Paired Sample t-Test was conducted using SPSS to determine the significant difference between pretest and posttest results. Before conducting the hypothesis test, a normality test was first performed using the Shapiro-Wilk test. If the data is not normally distributed, the analysis is continued using the Wilcoxon Signed Rank Test. N-Gain data is calculated using the following formula

$$N\text{-Gain} = \frac{\text{skor postes} - \text{skor pretes}}{\text{Skor Maksimum Ideal (SMI)} - \text{skor pretes}}$$

Table 2. N-Gain Value Levels

Range Score	Category
> 76	Effective
56 – 75	Fairly Effective
40 – 55	Less Effective
< 40	Ineffective

3. RESULTS AND DISCUSSION

RESULT

3.1 Product Test Results

3.1.1 Results of the One-to-One Trial

One-on-one trials were conducted in the early stages of product implementation, involving 3 students and 1 classroom teacher. This stage aims to determine the readability level, ease of use, and initial student response to the digital teaching materials based on Canva integrated with Flipbook. The results can be seen in the table below..

Table 3. One-To-One Trial Test Results

Subject	Aspects Being Evaluated	Result	Category
3 students	Media Display	Very Practical	Good
3 students	Ease of Use	Easy to Use	Good
1 teacher	Media Suitability	Assisting learning	Good

3.1.2 Results of the Small Group Trial

A small group trial was conducted involving 10 students and 1 class teacher. This stage aims to determine the practicality level of the integrated Canva-based digital teaching materials. The results can be seen in the table below.

Table 4. Results of the Small Group Trial

Subject	Aspects Being Assessed	Result	Category
10 students	Media Display	Very Practical	Good
10 students	Ease of Use	Easy to Use	Good
1 teacher	Media Suitability	Assisting learning	Good

3.1.3 Field Group Trial Results

Field trials were conducted on students in combined III and IV classes at CLC SD Ladong, Simunjan, Kuching, Sarawak. This stage aims to determine the effectiveness of using digital teaching

materials based on Canva integrated with Flipbook in improving students' reading comprehension skills. For more detailed results, please refer to the table below.

Table 5. Results of the Field Group Trial

Aspect	Value	Percentage	Category
Material Expert	61	87,1%	Very Worthy
Media Expert	73	91,2%	Very Worthy
Teacher's Response	93	93%	Very Practical
Student Response	97,2	97,2%	Very Practical

3.1.4 Product Effectiveness Results

Based on the results of trials and effectiveness analysis, the Canva-based digital teaching materials integrated with Flipbook are declared very feasible, practical, and effective for improving reading comprehension skills of dual-class students. For clarity, please refer to the following table.

Table 6. Product Effectiveness Test Results

Analysis	Results	Category	Remarks
Pre Test Score	55	Sufficient	Before Media Use
Post-Test Score	82	Good	After Media Use
Normality Test	Sig = 0.004 < 0.05		followed by the Wilcoxon Signed Rank test
Wilcoxon Test	rango medio 13.00 rango solar 325.000 differences	Good	The existence of score differences
N-Gain	0,82 (81,7%)	High	Effective Product Usage

DISCUSSION

The research results show that the digital teaching materials based on Canva integrated with Flipbook developed meet the criteria of being feasible, practical, and effective for use in teaching reading comprehension skills to students in combined III and IV classes at CLC SD Ladong, Simunjan, Kuching, Sarawak. Material expert validation received a score of 61 out of a maximum score of 70, while media expert validation received a score of 73 out of a maximum score of 80, categorized as very feasible. The results of the practicality test showed a positive response from teachers and students toward the use of digital teaching materials. The percentage of teacher responses reached 93% and student responses were 97.2%, both categorized as very practical. The product is deemed capable of increasing students' interest in learning thru an attractive, interactive, and user-friendly visual display in dual-classroom learning. As seen in the following table. In addition, the research results show that digital teaching materials received very positive responses from teachers and students, making them practical for use in the learning process. These findings reinforce the opinion that the use of digital technology in education can help teachers create a more effective and innovative learning environment, particularly in improving the reading comprehension skills of elementary school students. The improvement in students' reading comprehension skills is influenced by the use of digital teaching materials that combine visual elements, text, and interactivity within a single learning medium. The attractive display created using the Canva application and the interactive Flipbook feature can enhance students' interest and motivation in

learning during dual-class sessions. This is supported by the opinion of Patmasari et al. (2024), who state that Canva is a digital-based design application that can help teachers create engaging and interactive visual learning media. Additionally, according to Rahmawati et al. (2022), the use of multimedia-based digital teaching materials can enhance student engagement in the learning process because the material is easier to understand thru a combination of text and images. The use of Flipbook in this study also provides a more engaging learning experience compared to conventional open materials. In line with Fitria's (2024) opinion, digital Flipbook media can enhance students' learning motivation because it provides a more interactive and flexible reading experience. Furthermore, according to Sari & Yatri (2023), interactive digital learning materials are effectively used in elementary school education because they help students understand the material independently and improve their learning focus. In multi-classroom learning, the use of open digital materials helps teachers manage heterogeneous learning. This is reinforced by the opinion of Wahyuni & Haryanti (2024) who state that the use of digital media in multilevel learning can help teachers create more effective, adaptive, and student-centered learning. Thus, digital teaching materials based on Canva-Flipbook can be an innovative solution to improve the reading comprehension skills of elementary school students, especially in multi-class learning. Here are some final views of the Canva materials integrated with Flipbook.



Figure 1. Front and back cover



Figure 2. Title cover



Figure 3. Reading Text



Figure 4. Game Practice Page

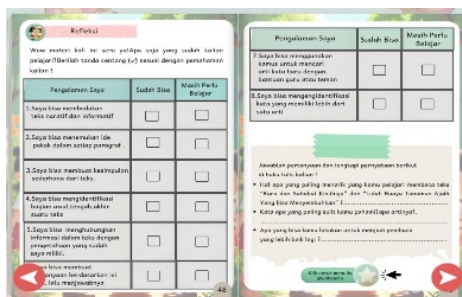


Figure 5. Reflection

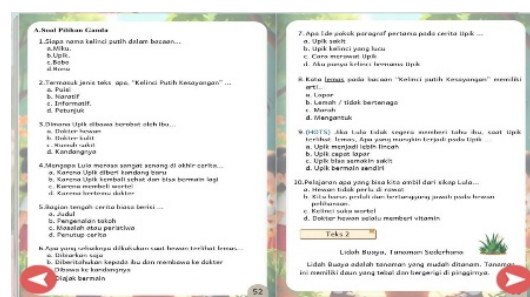


Figure 6. Evaluation



Figure 7. Flipbook-Canva Teaching Material visible on the screen (cover)

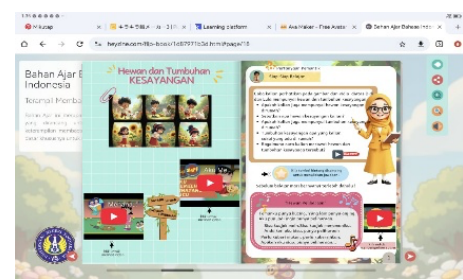


Figure 8. Flipbook-Canva Teaching Material visible on the screen (aperception)

4. CONCLUSION

This research produced a digital teaching material based on Canva–Flipbook that is feasible, practical, and effective for use in teaching reading comprehension skills to third and fourth-grade students at CLC SD Ladong, Simunjan, Kuching, Sarawak. The results of expert validation indicate that the product falls into the very feasible category, while the practicality test results show a very positive response from both teachers and students. Additionally, the effectiveness test results demonstrate an improvement in students' reading comprehension skills after using the Canva–Flipbook-based digital teaching materials, as evidenced by a high N-Gain score. Thus, the developed teaching materials can be used as a learning medium to support the reading comprehension learning process in combined classes.

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