

Implementation of culturally responsive teaching based digital media to enhance reading skills of elementary school students

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ABSTRACT

This research aims to (1) Describe the implementation of digital media with culturally responsive perceptions to improve the reading skills of fourth-grade elementary school students and (2) describe the supporting and inhibiting factors in the application of digital media with culturally responsive perceptions in reading instruction in fourth-grade elementary school. This research uses a classroom action research design conducted in two cycles. The subjects of the study are 15 fourth-grade elementary school students. The research procedures include planning, action implementation, observation, and reflection stages. Data collection techniques are observation, interviews, tests, and documentation. Data is analyzed descriptively quantitatively and qualitatively based on the improvement of scores and student engagement. The research results show that the application of digital media based on Culturally Responsive Teaching improves students' reading skills from the pre-cycle to cycle I and cycle II. The improvement is evident in students' literal, interpretive, and evaluative understanding aspects. Media that connects the reading content with the students' culture has been shown to enhance interest and active participation in the learning process. The conclusion of this study states that the Culturally Responsive Teaching-based learning approach supported by digital media can create a more meaningful, contextual, and inclusive learning experience. This research contributes to the development of pedagogical practices in elementary schools by integrating digital technology and culturally responsive learning approaches. These results can serve as a reference for teachers, media developers, and education policy makers in designing literacy strategies that are relevant to the social and cultural contexts of students.

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Introduction

Language skills are an individual's ability to communicate effectively (Arianto et al., 2024). In learning a language, there are four essential basic skills that students must master, namely listening, reading, writing, and speaking (Pratiwi & Widyaningrum, 2022; Sukanah & Rahayu, 2021). One of the important skills in language teaching is reading skills. Reading is the process used to absorb and understand the ideas conveyed through writing (Harianto, 2020; Pratiwi et al., 2025). This process involves observing words and phrases and searching for meanings. Essentially, reading is a way to explore new ideas and gain insights from written words. Reading is a complex activity that must be modeled, instructed, practiced, and taught consistently, so as to help readers understand the books they are studying (Khasawneh & Belton, 2025; van Moort et al., 2025; Wang et al., 2021). Reading is the activity of articulating words and understanding the

meanings of those words; this activity involves a variety of quite complex skills, such as learning, thinking, synthesizing, and problem-solving, aimed at helping readers comprehend information (Nurmalawati, 2017; Suparlan, 2021). Thus, it can be concluded that reading is about decoding text and understanding its meaning simultaneously.

Reading skills in elementary schools become the foundation or determining factor for students' learning success (Stiegler-Balfour et al., 2023). Reading is a very important skill in education, especially in the teaching and learning process, so without reading ability, students will have difficulty following lessons (Paramita et al., 2022; Yanti et al., 2018). Sugiarsih (2018) emphasizes that reading is a very important skill in education, especially in the teaching and learning process, so without reading ability, students will experience difficulties in following lessons. In conclusion, reading skills are very important in education because they support students' understanding in obtaining information and ideas, making it the foundation of learning success, especially in elementary school. Without good reading skills, students will struggle to follow lessons and access information (Daulay & Nurminalina, 2021).

Given the current conditions, reading skills, especially at the elementary school level, tend to be low. This is in line with the results of the 2016 survey of The World's Most Literate Nations, which showed that the reading interest in Indonesia is very low, ranking 60 out of 61 countries, thus making this reading ability issue reflect a significant challenge in improving national literacy in Indonesia (Hasanah & Silitonga, 2021). The low reading skills and student learning outcomes are caused by boring conventional teaching methods and a lack of innovative strategies (Astia, 2020). Students experience difficulties in understanding reading materials (Muliawanti et al., 2022). In line with the research conducted by Bili et al. (2023), it is also explained in their study that the lack of attention and reading services such as reading houses contributes to the low reading abilities of students, resulting in many children being unable to read well and a high repetition rate in second grade. By examining several research results conducted by experts, it can be observed that the level of reading skills in Indonesia still shows low results, which poses a challenge in efforts to improve national literacy.

Some problems were also found in one of the schools in Madiun Regency, particularly in reading skills. In this study, the researcher employed several methods to further identify the issues at hand. The first method was through observation during the teaching and learning process, where the researcher observed that most students were not able to read simple texts fluently. When the teacher asked the students to read, some students looked confused and could not pronounce the words correctly. There were students struggling to understand the text that the students read when the teacher provided reading material about folklore; most students appeared confused when asked about the content of the story. Many of the students could not explain the main character or answer simple questions about the plot.

Learning media plays a very important role and has many benefits in teaching and learning activities (Widyowati et al., 2020). Media has many benefits especially in learning, as it can be used to convey a message (material) to the recipient (students) which can stimulate students' thoughts/attention towards a lesson (Uner & Roediger, 2018; Weng et al., 2018). Learners using media can create new experiences that can increase students' enthusiasm in participating in learning (Rosmiati et al., 2024). One of the media that can be used by teachers in reading instruction is digital media (Adventyana et al., 2023). The application of digital media is very suitable to be implemented in reading lessons, especially on narrative text material that is interesting and relevant to students. This digital media is equipped with interactive elements such as images, sounds, and videos that can enhance students' understanding and interest in reading (Utomo, 2023; Wityastuti et al., 2022). This digital media integrates a Culturally Responsive approach, which ensures that the chosen narrative texts can depict various cultural backgrounds of the students, making it important for students to feel connected to the material, so they are more motivated to read and understand the content of the text (Fitriah et al., 2024).

The application of digital media in the form of this flipbook is very suitable for reading lessons, especially on narrative text materials that are interesting and relevant to students. This flipbook can be equipped with interactive elements such as images, sounds, and videos that can enhance students' understanding and interest in reading. In this lesson, the researcher used a Culturally Responsive approach which ensures that the selected narrative texts can represent the diverse cultural backgrounds of the students. This is important so that students feel connected to the material, thus motivating them more to read and understand the content of the text.

After reading the narrative text contained in the flipbook, students will be asked to retell the story in their own words. Retelling is a language skill that involves the process of re-expressing the content of a reading, story, or information that has been heard or read using one's own words. Retelling is not just memorizing or repeating exactly, but emphasizes understanding the content of the text as well as the ability to reorganize that information in a coherent, logical, and easily understandable manner. The activity aims

to train memory, comprehension of reading, and the ability to convey information both orally and in writing effectively.

The advantage of this research is the creation of digital media with culturally responsive perception, where this media is structured according to the needs of fourth-grade elementary school students in Madiun Regency. This research also integrates digital media with culturally responsive perception, whereas most existing research has focused on one of them. Moreover, the culture highlighted in this research is the culture of Madiun Regency. Based on the background of the problems above, the objectives of this research are (1) to describe the implementation of digital media with culturally responsive perception to improve reading skills of fourth-grade elementary school students and (2) to describe the supporting and inhibiting factors in the application of digital media with culturally responsive perception in reading learning in fourth-grade elementary school.

Method

Research Design

This research uses the Classroom Action Research approach of the Kemmis and McTaggart model, which consists of four stages: planning, implementation, observation, and reflection in each cycle.

1. Planning

Researchers and classroom teachers identified students' low reading ability in narrative texts with local cultural nuances, then designed actions through the development of digital comics based on Culturally Responsive Teaching (CRT).

2. Implementation: The teacher carries out the learning process according to what has been planned.

3. Observation

During the learning process, observations are made regarding student engagement, interactions among students, and students' responses to digital media.

4. Reflection

After each cycle is completed, researchers and teachers reflect on the results of the actions through analysis of observations, interviews, and student test scores to assess improvements in reading ability. The findings from Cycle I reflections serve as the basis for improvements in the next cycle to make learning more effective can be seen in Fig. 1.

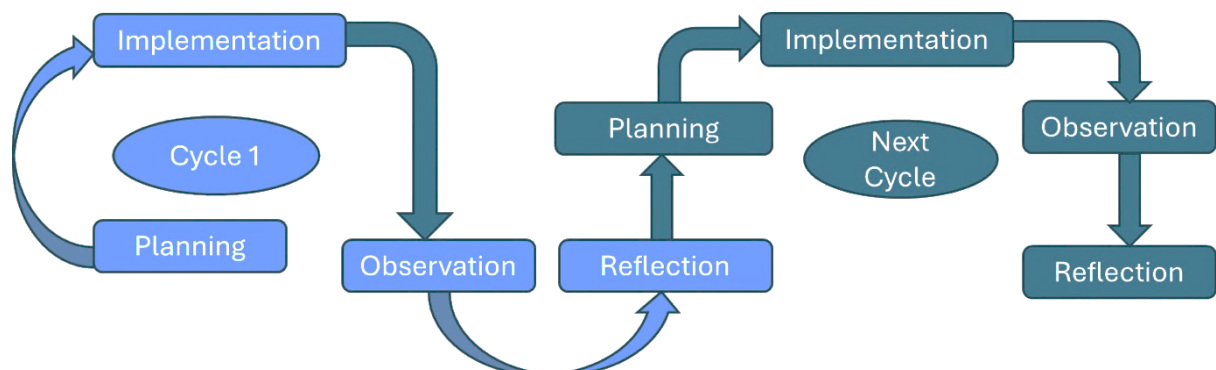


Fig.1. Research stages

Participant

The subject of this research is the teachers and students of the 4th grade at Balerejo 2 Elementary School, Madiun Regency. There is one teacher. The students number 15, consisting of 10 male students and 5 female students. The age range of the students is 10 - 11 years.

Data Collection

The data collection techniques in this research are observation, interviews, tests, and documentation. First, Observation. The observation in this study was conducted on reading learning using digital media that integrated culturally responsive pre-assessments for fourth-grade elementary school students. The researcher observed the teacher and students during the learning process with the material being applied. Second, Interviews. Interviews in this study were conducted with fourth-grade elementary school teachers to understand students' reading and comprehension, as well as the factors that influence learning. Third, Tests. The tests in this study were reading tests. Fourth, Documentation. The purpose of documentation is to complement the data collected by observers regarding students' discussion activities and the classroom

atmosphere during learning. The documentation in this research consists of learning tools, digital media displays with culturally responsive appreciation, and student learning achievement data from initial data.

Data Analysis

Data analysis is conducted descriptively using both quantitative and qualitative methods. The quantitative data in the form of test results is analyzed by calculating the average, percentage of learning completeness, and improvement from cycle to cycle. Data analysis techniques are divided into two: analysis using qualitative methods and analysis using quantitative methods, with the distinction that qualitative analysis does not involve data that needs to be calculated, while quantitative analysis does involve data that needs to be calculated. Qualitative data collection can be conducted through observation, in-depth interviews, document studies, and focused group discussions (Karimah et al., 2023). Meanwhile, quantitative data collection is a type of data collection in the form of numbers and employs analytical techniques to test hypotheses, draw conclusions, and understand the relationships between the studied variables (Susanto et al., 2024). Learning completeness is determined based on the Minimum Completeness Criteria, which is ≥ 75 . Qualitative data from observations and interviews are analyzed through the stages of data reduction, data presentation, and conclusion drawing to observe trends in changes in student learning behavior.

Success Indicator

The success of the action is determined by two main criteria, quantitatively at least 80% of students achieve scores above the Minimum Completion Criteria (≥ 75) and qualitatively the increase in active student participation in reading activities, both individually and in groups, as well as the emergence of enthusiasm in understanding narrative texts based on local culture.

Results and Discussion

1. The implementation of digital media with culturally responsive preconceptions can improve the reading skills of fourth-grade elementary school students

The Results and Discussion section is a crucial part of a scientific article where authors present their research findings, interpret their significance, and contextualize them within the existing body of knowledge. This section highlights the implications of the research and demonstrates how it addresses the stated research objectives and gaps.

a. Pre-Action

Pre-actions in classroom action research play a crucial role in ensuring that the research process runs smoothly and is well-structured. This initial stage includes three main steps: determining the focus of the research, conducting a preliminary study on action research, and performing assessments and reflective evaluations of the research.

1) Conducting Preliminary Study

In this stage, an observation was conducted on the reading activities of fourth-grade students at Balerejo 2 Elementary School. The results of the observation revealed issues with students' reading skills, especially in reading folklore. In the preliminary study stage, a review of previous research relevant to the topic of folklore learning and local culture was performed. This research will examine various learning approaches that have been implemented in the context of teaching folklore. In this preliminary study, the theories underlying both learning models are also discussed, as well as their impact on students' understanding of the teaching material. In addition, the researcher conducts an analysis of the successes and challenges faced by teachers in implementing culturally-based learning.

2) Conducting Reflective Assessment and Evaluation of the Research

At this stage, an assessment is conducted on the state of the class before the implementation of the cycle begins. The assessment is carried out through a pre-test aimed at measuring students' initial understanding of reading folktales. Additionally, evaluation is conducted to assess the level of student engagement in discussions and participation during the learning process. This assessment is to measure the extent to which students understand the story they read. Student participation in discussions observes how actively students engage in class discussions about cultural values contained in the folklore. This assessment will provide an overview of students' readiness to follow a more interactive learning approach in subsequent cycles. The data of students' scores before the implementation in Table 1.

Table 1. Table 1 Results of Student Scores Pre-Action

<i>Num</i>	<i>Name</i>	<i>Value</i>	<i>Status</i>
1	AHCM	80	Completed
2	AAN	60	Not Completed
3	AFM	50	Not Completed
4	ANPA	70	Not Completed
5	ASR	80	Completed
6	DNF	60	Not Completed
7	EA	60	Not Completed
8	IGM	70	Not Completed
9	IAA	50	Not Completed
10	IPS	80	Completed
11	MFA	80	Completed
12	NMU	70	Not Completed
13	PRK	80	Completed
14	SAA	60	Not Completed
15	SEH	40	Not Completed
Total		990	-
Average		66	-

Based on the table above, it can be concluded that the total score from the pre-implementation is 990 with an average of 66, indicating that there are 5 students who have successfully passed, and 10 students who have not passed. Based on the graph of the students' pre-test scores above, there are 67% of students who have not passed, and 33% of students who have passed, with a total of 15 students. This becomes a consideration that classroom action cycle 1 needs to be conducted.

b. Cycle 2

1) Planning In Cycle 1

The learning objective is to teach 4th-grade elementary school students about narrative texts through the story 'The Legend of Telaga Sarangan.' The media used is a digital flipbook, which serves as a visual aid in delivering the material. The main learning goal is for students to be able to identify the elements of narrative texts (characters, setting, plot, message), as well as explain the meaning, structure, and characteristics of narrative texts.

2) Implementation

The learning steps begin with the teacher opening the lesson by greeting the students and conducting an ice breaker. After that, the teacher explains the learning objectives and introduces the material through a flipbook media. The teacher explains the material about narrative texts, including the structure and characteristics of narrative texts. Students read the story 'The Legend of Telaga Sarangan'. Students are then given practice questions to evaluate their understanding of the reading text. The teacher reinforces the content and structure of the text and encourages the students to reflect on that day's lesson.

3) Observation

The observation was carried out by paying attention to student involvement during the learning process. The researcher observed whether the students were enthusiastic about the story and understood the content of the narrative text well. In addition, the teacher also assessed the students' answers through practice question sheets. In Cycle 1, the assessment was conducted to measure students' understanding of the material that had been taught. Assessments and scores were given based on the question sheets. The maximum score for this assessment is 100 with a Minimum Mastery Criteria of 75; scores above 75 are considered complete, while scores below 75 are considered incomplete. Table 2 are the results of students' scores in Cycle 1.

Table 2. Results of Student Scores Cycle 1

<i>Num</i>	<i>Name</i>	<i>Value</i>	<i>Status</i>
1	AHCM	90	Completed
2	AAN	80	Completed
3	AFM	60	Not Completed
4	ANPA	70	Not Completed
5	ASR	80	Completed
6	DNF	70	Not Completed
7	EA	60	Not Completed
8	IGM	70	Not Completed
9	IAA	70	Not Completed
10	IPS	80	Completed

<i>Num</i>	<i>Name</i>	<i>Value</i>	<i>Status</i>
11	MFA	80	Completed
12	NMU	70	Not Completed
13	PRK	90	Completed
14	SAA	80	Not Completed
15	SEH	80	Completed
Total		1130	-
Average		75,33	-

Based on the data presented in the table and graph, the average score from cycle 1 is 75.33, indicating that there are 7 students who successfully achieved scores that meet the passing criteria, with a percentage of students who passed being 47%. Meanwhile, there are 8 students who did not pass, with a percentage of 53% who have scores below the Minimum Completion Criteria of 75.

4) Reflection

Based on the observation results of the learning model implemented in Cycle 1, there was a significant increase from the data in the pre-cycle, with an average of 73.55 showing that 5 students with a percentage of 33% had completed, while in Cycle 1, it rose to 11 students with a percentage of 53% who successfully achieved completion. This indicates that despite efforts to improve, many students still have not reached the expected scores. The results of Cycle 1 show that although classroom actions have been taken, many students have not yet completed. Therefore, it is necessary to conduct an evaluation and improvement of the approach used, and perhaps the next cycle is needed to address the shortcomings present in Cycle 1.

c. Cycle 2

1) Planning

Based on the reflection results of Cycle 1, several improvement steps need to be taken in Cycle 2. The second cycle aims to enhance student engagement and understanding of folk tales through a more interactive and contextual approach. In this cycle, the story of Retno Dumilah is used as discussion material, while the text of the Origin of Reog Ponorogo is used for individual assessments. The learning model implemented is Problem Based Learning (PBL) with a Culturally Responsive approach, which connects learning with local culture. The learning objectives include the ability to identify the structure of narrative texts, recognize intrinsic elements, and relate the content of the story to local cultural values.

2) Implementation

The learning steps begin with the teacher opening the lesson by greeting the students and doing an ice breaker. The teacher then asks the students about their prior knowledge of folktales from East Java, explains the learning objectives, and introduces the material using a digital flipbook. The teacher reads an excerpt from the story of Retno Dumilah and presents the dilemma of the main character. Students are divided into small groups to read the text in full, analyze the elements of the story, and develop solutions to the conflict in the story. Group discussions are facilitated with worksheets, and the results of the discussions are presented in front of the class. After that, students work on individual assessments in the form of a quick quiz based on the reading 'The Origin of Reog Ponorogo' to evaluate each student's understanding. The teacher concludes the lesson, provides reinforcement about the values of local culture and narrative structure, and encourages students to reflect on what they learned that day.

3) Observation

Observation shows a significant increase in student engagement. In group discussions, students appeared more involved and demonstrated critical thinking skills as well as teamwork abilities. When presenting the discussion results, some students seemed confident and were able to express their opinions. Individual assessments using the reading "The Origins of Reog Ponorogo" showed that the majority of students could identify the structure and content of the text well. Table 3 are the assessment scores from cycle 2.

Table 3. Results of Student Scores Cycle 2

<i>Num</i>	<i>Name</i>	<i>Value</i>	<i>Status</i>
1	AHCM	85	Completed
2	AAN	88	Completed
3	AFM	80	Completed
4	ANPA	80	Completed
5	ASR	90	Completed
6	DNF	78	Completed
7	EA	85	Completed
8	IGM	85	Completed
9	IAA	80	Completed

<i>Num</i>	<i>Name</i>	<i>Value</i>	<i>Status</i>
10	IPS	80	Completed
11	MFA	90	Completed
12	NMU	82	Completed
13	PRK	80	Completed
14	SAA	88	Completed
15	SEH	78	Completed
Total		1249	
Average		83,3	

Based on the data in the table above, the average score from cycle 2 is 83.3, indicating that all students achieved passing scores, with the percentage of students passing being 100%. This shows that cycle 2 has gone well.

4) Reflection

The teacher's reflection on the second cycle indicates that the Problem Based Learning model has successfully encouraged students to be more active and reflective in their learning. Student involvement has increased, especially because they feel that the stories discussed are close to their lives and culture. The combination of group discussions and individual assessments also provides a more comprehensive understanding of the students' comprehension. However, time management needs to be considered so that all groups have sufficient presentation time. Overall, the second cycle shows success in improving the quality of learning and students' mastery of the material. Fig. 2 is a comparison between the pre-cycle, cycle I, and cycle II.

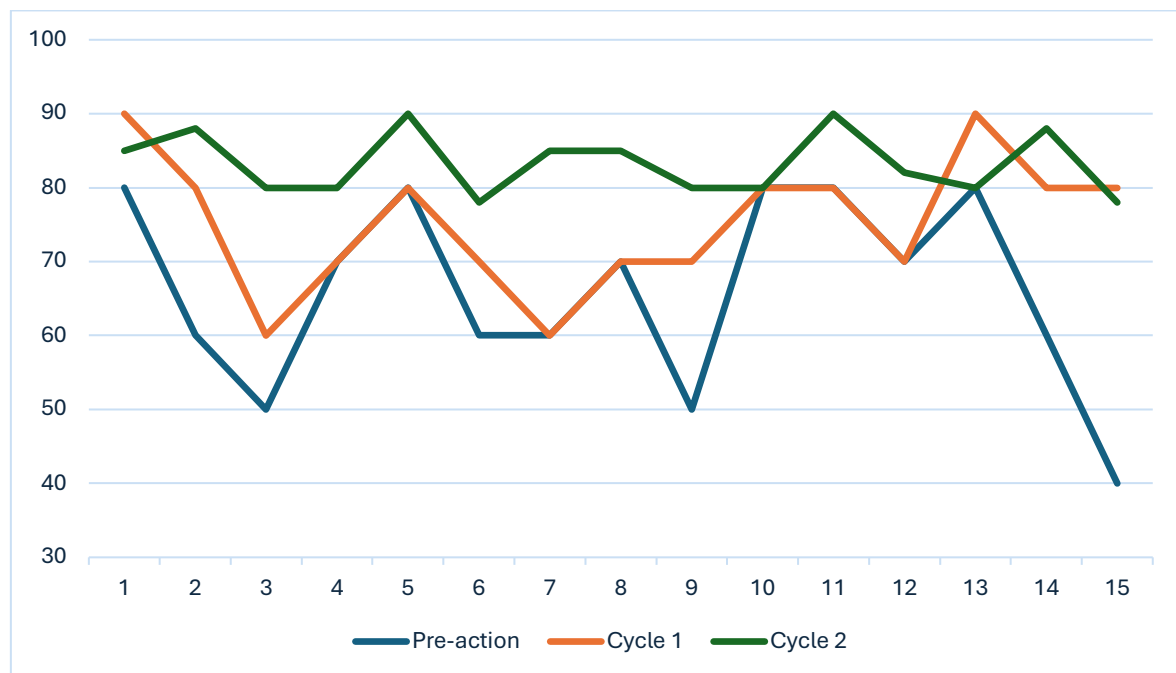


Fig. 2. Comparison between pre-cycle, cycle I, and cycle II.

2. Supporting and inhibiting factors in the implementation of digital media with Culturally Responsive Teaching (CRT) apperception in reading instruction in the fourth grade of elementary school

Data on supporting and inhibiting factors were obtained through classroom learning observations and in-depth interviews with teachers involved in the actions. Data analysis shows that the implementation of digital media based on Culturally Responsive Teaching is influenced by several aspects that directly or indirectly affect the effectiveness of learning implementation.

a. Supporting Factors

Based on the results of observations and interviews, several factors that support the successful implementation of culture-based digital media in reading instruction were identified, including: First, the active involvement of students in reading activities. Observation results indicated that students appeared more enthusiastic and focused when reading digital texts containing folklore, characters, and cultural

symbols familiar to them. The teacher also emphasized that using content close to students' lives makes it easier for them to understand the reading material and encourages them to express their opinions during discussions. As seen in this quote, "Students will respond more quickly and be happier if the story content is close to their culture" (Fourth Grade Teacher). Second, teachers' creativity in developing culture-based digital media. Observations show that the media developed by teachers have an attractive visual appearance and facilitate active student participation during learning. Third, readiness of facilities and school support. The school provides technological devices such as laptops, LCDs, and internet access that support the implementation of digital-based learning. Support from the principal and colleagues also helps smoothen the implementation of actions. Fourth, the suitability of the media with the principles of culturally-based learning. From observations, it is seen that students find it easier to relate the content of the text to their own life experiences, such as folklore.

b. Inhibiting Factors

Although positive results were observed, several challenges were encountered during the implementation of digital media based on Culturally Responsive Teaching, including: First, the limited digital literacy skills of some students. Observations showed that some students were still not familiar with using digital devices, such as swiping the screen, clicking on links, or opening learning applications. The teacher explained that this causes the learning time to be longer because technical guidance needs to be provided first. Secondly, there is variation in students' cultural backgrounds. Observations show that not all students come from the same cultural background. Some students who are not from the local area are less familiar with the cultural context in the text, so the teacher needs to provide additional explanations to ensure that these students can understand the content of the reading well. Third, student motivation and concentration. Digital media can indeed attract attention, but it is not uncommon for it to become a source of distraction. Students are easily diverted by visual displays or interactive features that are less relevant to the learning objectives.

This research shows a significant improvement in the reading skills of fourth-grade students at SDN Balerejo 2 through the implementation of digital media based on Culturally Responsive Teaching (CRT). The results from the pre-cycle, cycle I, and cycle II indicate a significant improvement, both in terms of the percentage of completeness and the average score of the class. This indicates that the use of learning media that is responsive to the cultural backgrounds of students contributes to creating a more meaningful and contextual learning environment. The involvement of local culture in the presentation of reading texts and digital visualization allows students to connect their learning experiences to everyday life. In this case, learning becomes more personal and relevant, as emphasized by Yangambi (2025) who studied the effectiveness of digital culturally adaptive learning in elementary school environments. He found that media incorporating local cultural elements increases students' ownership of the material being studied and encourages active participation.

This finding is also supported by Arini et al. (2025) who developed CRT-based interactive media and found that the reading skills of students in the experimental class were significantly higher than those in the control class. This interactive media not only conveys information but also provides space for students to understand, respond to, and interpret reading according to their cultural context. Culture-based learning at the elementary school level requires a commitment from all educational elements and school members to create learning that meets students' needs by involving cultural elements. This emphasizes the importance of teachers understanding students' cultural backgrounds to develop effective literacy strategies (Patras et al., 2023). Mahardika et al. (2025) developed culture-based animation media for multicultural learning in elementary schools and found that students found it easier to understand the content of reading and demonstrated high enthusiasm during the learning process.

Udmah et al. (2024) The implementation of Culturally Responsive Teaching (CRT) in elementary school lessons has a significant impact on students' humanistic literacy. Culturally Responsive Teaching helps teachers design learning experiences that are more relevant by considering the cultural backgrounds of students. For example, teachers can choose topics related to local cultural values, such as local wisdom in environmental management or traditions of respecting nature. Culturally responsive teaching designs that take culture into account are crucial in primary education. This method appreciates the cultural diversity of students and creates an atmosphere that values students' identities. Teaching that is aligned with students' cultural backgrounds can enhance their understanding and academic outcomes. Culturally Responsive Teaching also prepares students to live in a multicultural society by teaching principles of social justice and cross-cultural understanding (Bostwick et al., 2025). By using an interdisciplinary approach, teachers can develop media that reflects students' cultural identities, broadens understanding, and fosters social empathy.

Fitriani et al. (2024) researched a Javanese culture-based learning module used to enhance students' reading comprehension. This study is relevant to this research because it demonstrates that learning media

based on local wisdom can build a strong relationship between students and texts. The findings are consistent with Lepasere et al. (2025), who examined Culturally Responsive Teaching in fourth-grade elementary classes and developed culture-based enrichment modules. The results showed an increase in students' reading interest and reading interpretation skills.

These findings further strengthen that the success of digital media in improving reading skills is not solely due to visualization and interactivity, but also due to its connection to the values, norms, and life experiences of students (Degner et al., 2022; Oakley, 2024). Overall, the results of this study not only support previous findings but also provide new empirical contributions at the elementary school level, particularly in the context of developing culturally based learning media. The success of digital media in enhancing reading skills through a Culturally Responsive Teaching approach proves that this method can be an effective strategy in improving the quality of student literacy in a sustainable and contextual manner (Yoon, 2023).

From the aspect of novelty, this research provides a scientific contribution in the form of developing digital media that directly integrates local cultural elements of elementary school students into the reading learning process. Most previous studies have only emphasized the development of technology-based media or the strengthening of reading skills in general, but not many have explicitly combined the principles of Culturally Responsive Teaching with digital technology in the context of Indonesian elementary schools. By presenting reading texts and activities based on local culture (such as traditions, folk games, or social habits), this media not only stimulates reading skills but also fosters cultural awareness and positive affection towards the learning material. Another contribution is the presentation of empirical data based on classroom actions in public school environments, which provides a concrete picture of how culturally responsive teaching-based digital media can be implemented in schools with limited resources.

This finding also indicates that the success of implementing digital media based on Culturally Responsive Teaching is greatly influenced by teacher readiness, school environment support, and students' ability to utilize technology. Supporting factors such as teacher creativity and active student engagement are the main drivers of improved reading learning outcomes. Meanwhile, inhibiting factors such as time constraints, digital literacy, and student learning motivation become challenges that need to be addressed because they can affect the smoothness of the learning process. These results are in line with the research Pawan et al. (2023) which emphasizes that the success of culture-based learning requires collaboration between teachers, students, and the educational environment to ensure that cultural context is truly integrated into learning activities.

Nevertheless, this study has several limitations that need to be considered. First, the number of research subjects is relatively small, namely only 15 students from one class, so the results of this study cannot yet be generalized to a larger population. Second, the implementation of the actions was only carried out in two cycles, with a limited time frame. The long-term impact of the use of this media has not yet been fully understood.

The implications of this research are that digital media based on Culturally Responsive Teaching serves as scaffolding that strengthens the connection between students' experiences and the learning material. From a practical perspective, teachers are encouraged to start designing learning by considering the cultural diversity of students, not only in terms of content but also in the design of digital media. The development of digital storybooks, animated videos, and interactive infographics based on local culture can be concrete alternatives to enrich literacy learning. Schools can also use the results of this research as a reference for formulating innovative policies in the development of technology-based teaching materials. Additionally, teacher training in developing Culturally Responsive Teaching-based learning media should be part of a program for continuous professional competency enhancement.

Conclusion

This study shows that the implementation of digital media based on Culturally Responsive Teaching (CRT) perception can improve the reading skills of fourth-grade elementary school students. Each cycle consists of planning, implementation, observation, and reflection stages conducted continuously to improve the learning process. The research results indicate an increase in students' ability to understand the content of readings after the digital media used is adapted to the cultural context familiar to the students. Integrating local values and stories into digital media makes learning to read more engaging, meaningful, and contextual for students. Furthermore, this study also revealed the factors that influence the successful implementation of digital media based on Culturally Responsive Teaching. Supporting factors include active student involvement, teacher creativity in designing culturally based digital media, school facility support, and the relevance of materials to students' cultural backgrounds. Meanwhile, the inhibiting factors that arise include low digital literacy among some students, differences in cultural backgrounds, and

student motivation. Thus, the implementation of digital media based on Culturally Responsive Teaching perception proves effective in improving students' reading skills while fostering appreciation for culture.

Declarations

- Author contribution** : Afrilia Bayu Ivanka assigned to collect data, and analyze data, assist in writing articles. Cerianing Putri Pratiwi Tasked with planning research, organizing, supervising the course of the research, drafting articles. Ivayuni Listiani tasked with preparing instruments, collecting data, analyzing data, writing articles
- Funding statement** : This research was conducted with financial support from the Directorate General of Research and Development of the Ministry of Higher Education, Science, and Technology under announcement number 0070/C3/AL.04/2025 in 2025, which was translated into a contract with number 059.d/4/C/LPPM/UNIPMA/2025.
- Conflict of interest** : three authors state that they have no competing interests.
- Ethics Approval** : Information on Ethics Approval and informed consent statements are required for all articles published in BAHASTRA since 2025.
- Additional information** : No additional information is available for this paper.

References

- Adventyana, B. D., Salsabila, H., Sati, L., Galand, P. B. J., & Istiqomah, Y. Y. (2023). Media pembelajaran digital sebagai implementasi pembelajaran inovatif untuk sekolah dasar. *Jurnal Pendidikan dan Konseling (JPDK)*, 5(1), 3951–3955. <https://doi.org/10.31004/jpdk.v5i1.11640>
- Arianto, M. J., Sabani, F., Rahmadani, E., Sukmawaty, Guntur, M., & Irfandi. (2024). Penerapan metode bernyanyi dalam meningkatkan keterampilan membaca permulaan siswa sekolah dasar. *Attadrib: Jurnal Pendidikan Guru Madrasah Ibtidaiyah*, 7(1), 23–31. <https://doi.org/10.54069/attadrib.v7i1.711>
- Arini, R., Rosmilawati, I., & Hendrayana, A. (2025). Development of culturally responsive teaching-based interactive media to improve social-emotional skills and learning motivation in primary school students. *Jurnal Paedagogy*, 12(3), 734–743. <https://doi.org/10.33394/jp.v12i3.15425>
- Astia, M. (2020). Analisis Faktor penghambat pembelajaran membaca permulaan di kelas I SD Negeri 93 Palembang. *Scholastica Journal Jurnal Pendidikan Sekolah Dasar dan Pendidikan Dasar (Kajian Teori dan Hasil Penelitian)*, 3(1), 7–12. <https://doi.org/10.31851/sj.v3i1.7553>
- Bili, K. D., Lasmawan, I. W., & Suastika, I. N. (2023). Implementasi layanan membaca gratis meningkatkan kemampuan membaca anak. *Jurnal Pendidikan Dasar Flobamorata*, 4(1), 424–428. <https://doi.org/10.51494/jpdf.v4i1.847>
- Bostwick, K. C. P., Martin, A. J., Lowe, K., Vass, G., Woods, A., & Durksen, T. L. (2025). A framework for teachers' culturally responsive teaching beliefs: Links to motivation to teach Aboriginal curriculum and relationships with Aboriginal students. *Teaching and Teacher Education*, 161(1), 1–12. <https://doi.org/10.1016/j.tate.2025.105020>
- Daulay, M. I., & Nurmnalina. (2021). Pengembangan media komik untuk meningkatkan keterampilan membaca pemahaman siswa kelas IV SDN 41 Pekanbaru. *Jurnal Onoma: Pendidikan, Bahasa, dan Sastra*, 7(1), 24–34. <https://doi.org/10.30605/onoma.v7i1.452>
- Degner, M., Moser, S., & Lewalter, D. (2022). Digital media in institutional informal learning places: A systematic literature review. *Computers and Education Open*, 3(1), 1–11. <https://doi.org/10.1016/j.caeo.2021.100068>
- Fitriah, L., Gaol, M. E. L., Cahyanti, N. R., Yamalia, N., Maharani, N., Iriani, I. T., & Surayanah, S. (2024). Pembelajaran berbasis pendekatan culturally responsive teaching di sekolah dasar. *JoLLA Journal of Language Literature and Arts*, 4(6), 643–650. <https://doi.org/10.17977/um064v4i62024p643-650>
- Fitriani, R., Untari, M. F. A., & Jannah, F. M. (2024). Implementasi pendekatan culturally responsive teaching (CRT) dalam proyek penguatan profil pelajar pancasila di sekolah dasar. *Jurnal Basicedu*, 8(3), 11916–11924. <https://doi.org/10.31004/basicedu.v8i3.7529>
- Hariato, E. (2020). Keterampilan membaca dalam pembelajaran bahasa. *Jurnal Didaktika*, 9(1), 2. <https://doi.org/10.58230/27454312.56>
- Hasanah, U., & Silitonga, M. (2021). Implementasi gerakan literasi sekolah di sekolah dasar. *Jurnal Basicedu*, 5(3). Pusat Penelitian Kebijakan, Badan Penelitian dan Pengembangan dan Perbukuan, Kementerian Pendidikan dan Kebudayaan. <https://doi.org/10.31004/basicedu.v5i3.939>

- Karimah, N. N., Wasliman, I., & Dianawati, E. (2023). Implementasi praktik kerja industri dalam meningkatkan kompetensi lulusan pada SMK. *Wahana Didaktika: Jurnal Ilmu Kependidikan*, 21(1), 247–257. <https://doi.org/10.31851/wahanadidaktika.v21i1.11173>
- Khasawneh, M. A. S., & Belton, B. (2025). Disclosing the effects of automated feedback on reading comprehension, reading motivation, reading engagement, and reading anxiety through personalized technology-enhanced learning. *Computers in Human Behavior Reports*, 20(September), 1–13. <https://doi.org/10.1016/j.chbr.2025.100817>
- Lapasere, S., Julianti, N., Herlina, H., Rizal, R., & Joni Guci, A. A. (2025). Pembelajaran tanggap budaya (Culturally responsive teaching) di kelas iv sekolah dasar. *Attadrib: Jurnal Pendidikan Guru Madrasah Ibtidaiyah*, 8(1), 98–112. <https://doi.org/10.54069/attadrib.v8i1.859>
- Mahardika, K., Syaodih, E., & Djoehaeni, H. (2025). Media digital pada pembelajaran multikultural di sekolah multi-etnis. *Aulad: Journal on Early Childhood*, 8(2), 998–1006. <https://doi.org/10.31004/aulad.v8i2.1202>
- Muliawanti, S. F., Amalian, A. R., Nurasih, I., Hayati, E., & Taslim, T. (2022). Analisis kemampuan membaca pemahaman siswa kelas iii sekolah dasar. *Jurnal Cakrawala Pendas*, 8(3), 860–869. <https://doi.org/10.31949/jcp.v8i3.2605>
- Nurmalawati. (2017). Meningkatkan hasil belajar bahasa indonesia melalui penerapan model pembelajaran make a match. *Global Edukasi*, 1(3), 353–357.
- Oakley, G. (2024). A scoping review of research on the use of digital technologies for teaching reading fluency. *Education Sciences*, 14(6), 1–17. <https://doi.org/10.3390/educsci14060633>
- Paramita, G. A. P. P., Gede Agung, A. A., & Abadi, I. B. G. S. (2022). Buku cerita bergambar guna meningkatkan keterampilan membaca muatan pelajaran Bahasa Indonesia Siswa kelas III SD. *Mimbar Ilmu*, 27(1), 11–19. <https://doi.org/10.23887/mi.v27i1.45499>
- Patras, Y. E., Juliani, A., Nurhasanah, N., Maksum, A., & Hidayat, R. (2023). A review of culture-based learning at primary level in Indonesia. *AL-ISHLAH: Jurnal Pendidikan*, 15(3), 3923–3936. <https://doi.org/10.35445/alishlah.v15i3.3525>
- Pawan, F., Li, B., Dopwell, M. B., Nijati, S., Harris, A., & Iruoje, T. (2023). Culturally and linguistically responsive online teacher learning and professional development. *Online Learning Journal*, 27(4), 171–200. <https://doi.org/10.24059/olj.v27i4.4003>
- Pratiwi, C. P., Irma, C. N., Nur, P., & Kumalasari, I. (2025). The effectiveness of local culture-based digital comic on elementary school students' story reading skills. *EduBasic Journal: Jurnal Pendidikan Dasar*, 7(1), 115–128. <https://doi.org/10.17509/ebj.v7i1.82938>
- Pratiwi, C. P., & Widyaningrum, H. K. (2022). Penggunaan media pembelajaran berbasis audio-visual terhadap keterampilan menulis kelas iv. *FORDETAK: Seminar Nasional Pendidikan: Inovasi Pendidikan di Era Society 5.0*, 112–119.
- Rosmiati, S., Iswara, P. D., & Djuanda, D. (2024). Pengembangan media flipbook audio sebagai media pembelajaran membaca nyaring di kelas ii SD. *Jurnal Onoma: Pendidikan, Bahasa, dan Sastra*, 10(3), 2909–2920. <https://doi.org/10.30605/onoma.v10i3.3985>
- Stiegler-Balfour, J. J., Roberts, Z. S., LaChance, A. S., Sahouria, A. M., & Newborough, E. D. (2023). Is reading under print and digital conditions really equivalent? Differences in reading and recall of expository text for higher and lower ability comprehenders. *International Journal of Human Computer Studies*, 176(1), 1–12. <https://doi.org/10.1016/j.ijhcs.2023.103036>
- Sugiarsih, S. (2018). Peningkatan keterampilan membaca melalui drop everything and read (DEAR) pada siswa sekolah dasar (MI). *Al-Bidayah: Jurnal Pendidikan Dasar Islam*, 9(2), 157–168. <https://doi.org/10.14421/al-bidayah.v9i2.18>
- Sukanah, D., & Rahayu, G. D. S. (2021). Metode pembelajaran inquiry dalam meningkatkan kemampuan menulis teks pidato. *COLLASE*, 4(1), 134–141.
- Suparlan, S. (2021). Keterampilan membaca pada pembelajaran bahasa Indonesia di SD/MI. *Fondatia*, 5(1), 1–12. <https://doi.org/10.36088/fondatia.v5i1.1088>
- Susanto, P. C., Arini, D. U., Yuntina, L., Panatap, J., Soehaditama, & Nuraeni, N. (2024). Konsep penelitian kuantitatif: populasi, sampel, dan analisis data (Sebuah tinjauan pustaka). *Jurnal Ilmu Multidisplin*, 3(1), 1–12. <https://doi.org/10.38035/jim.v3i1.504>
- Udmah, S., Wuryandini, E., & Mahyasari, P. (2024). Analisis desain pembelajaran culturally responsive teaching dalam konteks penguatan literasi humanistik di sekolah dasar. *Jurnal Studi Guru dan Pembelajaran*, 7(2), 749–758. <https://doi.org/10.30605/jsgp.7.2.2024.4272>
- Uner, O., & Roediger, H. L. (2018). The effect of question placement on learning from textbook chapters. *Journal of Applied Research in Memory and Cognition*, 7(1), 116–122. <https://doi.org/10.1016/j.jarmac.2017.09.002>

- Utomo, F. T. S. (2023). Inovasi media pembelajaran interaktif untuk meningkatkan efektivitas pembelajaran era digital di sekolah dasar. *Pendas :Jurnal Ilmiah Pendidikan Dasar*, 8(2), 3635–3645. <https://doi.org/10.23969/jp.v8i2.10066>
- van Moort, M. L., de Bruïne, A., & van den Broek, P. (2025). Reading comprehension in an online world: Challenges, opportunities, and implications for education. *Reading Teacher*, 79(1), 1–14. <https://doi.org/10.1002/trtr.70006>
- Wang, S., Hu, B. Y., & Zhang, X. (2021). Kindergarteners' spatial skills and their reading and math achievement in second grade. *Early Childhood Research Quarterly*, 57, 156–166. <https://doi.org/10.1016/j.ecresq.2021.06.002>
- Weng, C., Otanga, S., Weng, A., & Cox, J. (2018). Effects of interactivity in e-textbooks on 7th graders science learning and cognitive load. *Computers and Education*, 120, 172–184. <https://doi.org/10.1016/j.compedu.2018.02.008>
- Widyowati, F. T., Rahmawati, I., & Priyanto, W. (2020). Pengembangan media pembelajaran membaca mengeja berbasis aplikasi untuk kelas 1 sekolah dasar. *International Journal of Community Service Learning*, 4(4), 332–337. <https://doi.org/10.23887/ijcsl.v4i4.29714>
- Wityastuti, E. Z., Masrofah, S., Haqqi, T. A. F., & Salsabila, U. H. (2022). Implementasi penggunaan media pembelajaran digital di masa pandemi COVID-19. *Jurnal Penelitian Inovatif*, 2(1), 39–46. <https://doi.org/10.54082/jupin.39>
- Yangambi, M. W. (2025). Culturally relevant teaching in the digital age: Student-centered and personalized learning in developing countries. *Creative Education*, 16(01), 71–89. <https://doi.org/10.4236/ce.2025.161005>
- Yanti, N., Suhartono, & Kurniawan, R. (2018). Penguasaan materi pembelajaran keterampilan berbahasa Indonesia mahasiswa S1 Program studi Pendidikan Bahasa dan Sastra Indonesia Fkip Universitas Bengkulu. *Jurnal Ilmiah Korpus*, 2(1), 72–82. <https://doi.org/10.33369/jik.v2i1.5559>
- Yoon, B. (2023). Research synthesis on culturally and linguistically responsive teaching for multilingual learners. *Education Sciences*, 13(6), 1–10. <https://doi.org/10.3390/educsci13060557>