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The Effect of the Cooperative Integrated Reading and Composition (CIRC) Learning Model on Elementary School Students' Reading Comprehension Skills

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Abstract

Limited research has examined cooperative learning models that integrate reading and writing activities to improve students' literacy competencies, although low reading comprehension skills remain a significant issue among fifth-grade students at UPTD SD Negeri 28 Parepare, where conventional learning methods have commonly been used. This study aims to describe students' reading comprehension skills taught with and without the Cooperative Integrated Reading and Composition (CIRC) model and to analyze the effect of the CIRC model on fifth-grade students' reading comprehension skills at UPTD SD Negeri 28 Parepare. A quantitative approach with a quasi-experimental design using a balanced control group was employed, with samples selected through a random grouping technique. Data were collected using pretests and posttests. The data were analyzed through descriptive and inferential statistics, including normality tests, homogeneity tests, N-Gain analysis, and an independent samples t-test. The findings indicate a significant difference in reading comprehension skills between the experimental and control groups, with the experimental group achieving a higher average score. The independent samples t-test further supported this

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result, showing a significance value (Sig. 2-tailed) below 0.05, which indicates that the CIRC learning model had a significant effect on students' reading comprehension skills. The study concludes that integrating reading and writing activities through heterogeneous group interaction effectively improves students' reading comprehension compared to conventional learning methods. These findings contribute to the development of cooperative learning strategies and extend the literature on integrated literacy instruction at the elementary school level. The study also provides practical implications for educators to adopt collaborative and activity-based learning models such as CIRC to create more meaningful literacy learning experiences, while further research is recommended to examine the application of this model across different educational levels.

Keywords: CIRC Model; Reading Comprehension; Cooperative Learning; Literacy Instruction; Elementary Education

INTRODUCTION

This research begins with the issue of low reading comprehension skills among elementary school students in Indonesia, which significantly impacts national literacy quality. This statement is supported by the findings of the Programme for International Student Assessment (PISA) 2022, which showed that Indonesian students' literacy remains very inadequate, reflected in an average score of 383, placing Indonesia in 67th place among 81 countries (OECD, 2023). This condition indicates that students' capacity to understand text content, absorb information, and construct meaning from reading is still less than optimal due to the learning process that tends to be one-way and the limited use of specific learning models that train reading skills.

This condition is in line with the problems raised byIsrawaty et al., (2025)which shows that domi. A similar phenomenon was also found clearly in fifth grade students at UPTD SD Negeri 28 Parepare, where students' reading comprehension skills were still below the minimum completion criteria (KKM) of 75. Based on initial data, this low skill can be seen from the completion rate in grade V.1 which only reached 48% and grade V.2 at 52%, which confirms that students still experience great difficulty in analyzing the contents of the text and capturing information accurately.

Based on these conditions, improvements are needed in the learning process to improve students' reading comprehension skills in order to achieve effective and

meaningful results. The Cooperative Integrated Reading and Composition (CIRC) learning model is an appropriate alternative solution to improve the quality of this learning process. This model helps students master collaborative reading techniques, so that understanding of the text's content is not merely received passively but is constructed together through structured team activities. The implementation of this model is supported by the theoryRifa'i et al., (2024)which confirms that the CIRC model is very effective in strengthening literacy in elementary schools because its activities encourage social interactions that help students collectively analyze the meaning of texts, ultimately improving students' reading comprehension skills. Thus, the implementation of the CIRC model is expected to facilitate students' understanding of the concepts and messages contained in the reading.

Several previous studies have shown that the CIRC learning model, when used to improve students' reading comprehension skills, is considered to have a positive contribution.Nawawulan et al., (2023)The application of the CIRC model has been proven to help improve students' reading comprehension skills. In line with this,Arisqa & Anas (2025)showed a significant increase in students' average scores. Then the results of the studyNani et al., (2022)also showed that students who were taught by applying the CIRC model had an increase in students' reading comprehension skills.

However, the majority of existing research still focuses on the model's general efficacy and has not examined its implementation in real-world learning situations in schools with specific literacy barriers. Research specifically examining the application of the CIRC model in transforming passive learning patterns into active learning patterns is still very limited. Furthermore, research testing the model's effectiveness as a concrete solution to achieving the Minimum Competency Criteria (KKM) of 75 in specific elementary school settings is also limited. Therefore, further research is needed to determine the extent to which the CIRC model at the UPTD of SD Negeri 28 Parepare addresses the gap between learning theory and the reality of students' low reading comprehension.

The novelty element in this study is the application of the Cooperative Integrated Reading and Composition (CIRC) learning model which focuses on improving the reading comprehension skills of fifth grade students, which emphasizes testing the effectiveness of the model on literacy mastery achievements through experimental design in the real teaching and learning process in the classroom. The integration of group reading activities

through the CIRC model is expected to make it easier for students to interpret messages and master vocabulary in depth through group collaboration.

Theoretically, the application of the CIRC learning model is a substantial increase in literacy competency, because as a systematically structured method, this model aims to improve reading comprehension, writing, and other linguistic aspects that are very relevant to be applied at the elementary education level.(Prihatmojo & Rohmani, 2020)On the other hand, the CIRC model is one of the most effective approaches applied to the learning process at the elementary school level because it has been proven to significantly improve students' ability to understand the content of reading.(Syafitri & Mansurdin, 2020). Furthermore, this model is able to make effective use of time through cooperative teams to integrate reading instruction to improve text reading skills, vocabulary mastery, and spelling as a whole.(Riadi, 2021)Therefore, the application of the CIRC learning model, which is linked to students' literacy needs, is expected to optimize the improvement of students' reading comprehension skills.

Based on this description, this research focuses onThe use of a cooperative learning model that integrates reading and writing activities in an integrated manner to improve students' literacy competencies. Meanwhile, this study aims to determine the description of students' reading comprehension skills taught with and without the Cooperative Integrated Reading and Composition (CIRC) model, as well as to analyze the effect of the CIRC model on the reading comprehension skills of fifth-grade students at UPTD SD Negeri 28 Parepare.

METHOD

Types of research

This research applies a quantitative approach with a quasi-experimental research design.Waruwu et al., (2025)Quantitative research is a research approach that utilizes numerical data to answer research questions. This approach focuses on objective measurement, systematic data collection, and the application of statistical analysis to test hypotheses or explain specific phenomena.Abdullah et al., (2020), an all-experimental or quasi-experimental design is a method in which the control and experimental groups are conducted without randomization procedures. This approach was used to examine the

effect of the Cooperative Integrated Reading and Composition (CIRC) learning model on students' reading comprehension skills.

Research Design

*Nonequivqlent control group design*be the design in this research.Rejeki et al., (2021)The design includes two groups: an experimental group and a control group. The experimental group was subjected to an intervention using the Cooperative Integrated Reading and Composition (CIRC) model, while the control group underwent a conventional method without any such intervention. Both groups underwent a pretest before the intervention, followed by a posttest after the intervention to evaluate differences in students' reading comprehension skills.

Participants & Sampling Techniques

This research was conducted at the UPTD of SD Negeri 28 Parepare, focusing on students from grade V. The sample consisted of 42 students, allocated into two different groups, specifically grade V.2 (experimental group) consisting of 21 students and grade V.1 (control group) consisting of 21 students. Sampling used the cluster random sampling method. Sudjana & Ibrahim(Machali, 2021)Cluster random sampling is a technique that involves selecting specific groups or classes from a random selection of units. This research was conducted during the even semester of the 2025/2026 academic year, with a duration of approximately three weeks.

Instruments & Data Collection

This study used an instrument consisting of a reading comprehension skills test that included a pretest and a posttest. Arikundo(Sinaga et al., 2022)A test is defined as a systematic set of instruments or tasks that serve to evaluate the knowledge competency and intellectual capacity of individuals or groups. This study used conventional assessment methods. In line with this,Hasni et al., (2024) states that a conventional score is the total number of correctly answered items, where the score is calculated by adding up all participant responses on a test. The development of this test instrument is based on reading comprehension skill indicators and has passed validity and reliability testing stages before being used in the study. The data collection procedure was carried out by administering a pretest before the intervention and then administering a posttest after the intervention to both groups.

Data analysis

The data analysis used descriptive and inferential statistical techniques. Descriptive statistics were used to assess students' reading comprehension skills, and inferential statistics were used to assess the hypotheses proposed within the research framework.(Razali et al., 2023). Before conducting hypothesis testing, an initial prerequisite assessment is carried out, which includes tests for normality and homogeneity. Sugiyono(Angraeni et al., 2022)Inferential statistical analysis facilitates the processing and analysis of sample data to draw conclusions about the population and is also used as a means of testing research hypotheses. Furthermore, hypothesis testing is conducted through the application of independent sample t-tests to examine the impact of the Cooperative Integrated Reading and Composition (CIRC) learning model on students' reading comprehension skills. Furthermore, the N-gain test serves as an evaluation tool to measure improvements in the results.(Akbar et al., 2023). After completion of hypothesis testing, the next phase involves calculating the effect size to ascertain the magnitude of the impact given using Cohen's formula.

RESULTS

Key Findings

The results of the study revealed differences in the reading comprehension skills of students involved in learning through the Cooperative Integrated Reading and Composition (CIRC) model and students who followed conventional learning methods. In the experimental group, the average post-test scores showed high results compared to the control group. Furthermore, the results of the improvement analysis, as determined by the N-Gain test, showed that the experimental group showed a relatively superior improvement classification compared to the control group. These results imply that the implementation of the CIRC model significantly contributed to the improvement of reading comprehension skills.

In addition, the test results show that the calculated t value exceeds the t table ($2.233 > 2.021$), which leads to the rejection of the hypothesis (H0) and the acceptance of the alternative hypothesis (H1). Thus, it can be concluded that the use of the CIRC learning model has an influence on the reading comprehension skills of fifth grade students.

Data Visualization

Negative/Anomalous Data

The experimental and control groups implemented two approaches to learning. The experimental group used the Cooperative Integrated Reading and Composition (CIRC) learning model, while the control group implemented conventional learning.

Figure 1. Learning activities in experimental class Figure 2. Learning activities in control class

Table 1. Average Pretest and Posttest Scores

Class	Number of Students	Pretest Average	Posttest Average
Experiment	21	58.86	90.33
Control	21	59.24	84.43

The table above shows that the posttest results had a higher average in the experimental class compared to the control class.

Table 2. N-Gain Test Results

Class	Average N-Gain	Category
Experiment	0.74	Tall
Control	0.63	Currently

Based on the table mentioned, it is shown that the average N-Gain value recorded in the experimental group exceeds the value of the control group. This indicates that the increase in students' reading comprehension skills in the experimental group was significantly greater than that in the control group.

Students' Reading Comprehension Skills	Equal Variances Assumed	df	t	Sig(2-tailed)
		40	2,233	0.032

The data presented in the table above shows that the significance value is less than 0.05, thus indicating a statistically significant change between the experimental group and the control group.

The results of students' reading comprehension skills in the experimental group were superior to those in the control group.

DISCUSSION

Results Analysis

The research findings indicate that the implementation of the Cooperative Integrated Reading and Composition (CIRC) learning model has a significant impact on improving fifth-grade students' reading comprehension skills. This statement is evidenced by a significant increase in the average post-test score of the experimental group compared to the control group, as well as the results of the independent sample t-test, which revealed a significance value (Sig. 2-tailed) of less than 0.05. Furthermore, the calculated results also show that the calculated t exceeds the table t (2.233 > 2.202), thus leading to the rejection of H0 and acceptance of H1. Furthermore, to assess the improvement in reading comprehension skills, the N-Gain test was used, revealing that the experimental group created higher classifications compared to the control group. In addition, an effect size analysis was conducted to ascertain the extent of the influence of the CIRC model resulting in a Cohen's d value of 0.81, which is categorized as high. These findings collectively indicate that the implementation of the CIRC model has a significant impact on students' reading comprehension skills.

Research findings indicate that the CIRC model can help students improve their reading comprehension skills, particularly in understanding the intrinsic elements of a story. The CIRC model, which emphasizes collaborative reading and writing activities, can simplify the analysis of complex story components into a more focused approach, making it easier for students to identify elements such as characters, plot, and setting, which in turn improves reading comprehension skills. In accordance with this,Yuningsih, (2024)proves that the implementation of CIRC is more effective than conventional models such as lectures and question and answer because this model is able to improve students' collaborative skills and collective understanding. In addition, Miliawati(Oktaviani, 2021)stated that the application of the CIRC model has been proven to improve the reading comprehension skills of fifth grade students, especially in mastering the structure and content of the text as a whole.

Literature Comparison

The research findings align with the conclusions drawn by Nawwulan et al. (2023) that the application of the CIRC model has been shown to help improve students' reading comprehension skills. Similarly, Arisqa & Anas (2025) showed a significant increase in students' average scores. Furthermore, the research results of Nani et al. (2022) also showed that students taught using the CIRC model experienced improvements in their reading comprehension skills.

This study confirms previous findings that advocated the implementation of this learning model. The difference lies in the focus of intensive application of the CIRC model on fifth-grade students to assess its effectiveness on their reading comprehension skills. Compared to previous research, this study places greater emphasis on mastery of text structure and content, tailored to the learning needs of students in that grade.

Implications

The results of this study yield several significant insights, both theoretically and practically. From a theoretical perspective, these results support the proposition that implementing a collaborative and integrated learning model can enhance the effectiveness of text comprehension. Practically, implementing the CIRC model can be an option for educators in creating an interactive and meaningful reading learning environment for students.

Furthermore, the systematic syntax of the CIRC model can facilitate students' understanding of the structure and content of complex texts, thereby increasing their engagement in classroom literacy activities. Therefore, it is important for educators to utilize and implement structured cooperative learning models in the context of reading activities to optimize students' comprehensive reading comprehension skills.

Limitations

Limitations of this study include the relatively limited sample size and the limited application of the model to a specific primary education institution, making the findings unsuitable for broad generalization. Furthermore, this study focused exclusively on a single instructional topic, specifically on the intrinsic elements of stories, resulting in an incomplete representation of the overall Indonesian language learning landscape.

Further research is expected to incorporate a broader sample, covering academic achievement levels, as well as applying the Cooperative Integrated Reading and Composition (CIRC) model to more varied literacy learning materials in addition to the intrinsic elements of the story.

CONCLUSION

Summary of Research Results:

This study shows that the implementation of the Cooperative Integrated Reading and Composition (CIRC) learning model has a significant impact on the reading comprehension skills of fifth-grade students. This is supported by a comparative analysis of the average learning outcomes observed in the experimental group, which exceeded the control group. Furthermore, findings derived from the independent sample t-test showed a significance value (Sig. 2-tailed) of less than 0.05. Further calculations showed that the calculated t value exceeded the t-table value (2.233 > 2021), thus facilitating the rejection of the null hypothesis (H0) in favor of the alternative hypothesis (H1). In addition, the improvement in reading comprehension skills, as evaluated through the N-Gain analysis, revealed a substantial increase relative to the control group.

Contribution to Science:

This research significantly contributes to the development of structured cooperative learning models, particularly the application of the Cooperative Integrated Reading and Composition (CIRC) model in the context of elementary school literacy education. Furthermore, the findings support the proposition that utilizing collaborative and systematic learning strategies can improve students' reading comprehension skills while fostering deeper and more meaningful learning experiences in mastering the intrinsic elements of stories.

Recommendations for Further Research:

Further research is expected to be able to apply the use of the CIRC model to literacy materials at various educational levels by involving a wider range of subjects in order to be able to generalize research results more optimally.

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