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The Effect of the CIRC (Cooperative Integrated Reading and Composition) Learning Model on the Basic Literacy Skills of Fourth Grade Students at SDN Inpres

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A B S T R A C T

This study aims to analyze the effect of the Cooperative Integrated Reading and Composition (CIRC) learning model on the basic literacy skills of fourth-grade students at SDN Inpres Lesu. The research employed a quantitative approach with a one-group pretest-posttest design involving 10 students. Data were collected through literacy tests, observations, and documentation. The pretest results showed an average score of 53.9, which increased to 77.9 in the posttest. The Shapiro-Wilk normality test indicated that the data were normally distributed ($p > 0.05$), allowing for further analysis using a paired sample t-test. The test results yielded a significance value of 0.000 ($p < 0.05$), indicating a significant difference before and after the treatment. The implementation of CIRC proved effective in enhancing students' reading, comprehension, and written expression skills through collaborative group work. These findings suggest that interactive and cooperative learning strategies such as CIRC are highly applicable in Indonesian language instruction at the elementary school level to strengthen students' literacy.

1. Introduction

Education is the foundation for developing quality human resources, equipping individuals with cognitive, affective, and psychomotor skills that continue to develop continuously (Santoso et al., 2023). In the modern era, education is a crucial component in fostering individual knowledge of global societal life. Law No. 20 of 2003 on the National Education System, Article 1, Point 1, emphasizes that education is a conscious and planned effort to create a conducive learning environment, encourage the development of students' potential, and shape characters who are faithful, pious, have noble character, are competent, creative, independent, democratic, and responsible (Budiani, 2019). Knowledge is also important in religious education, as stated in the Qur'an, Surah Al-Mujadillah,

Verses 10-11, which indicates that knowledge is the path to glory and success (Zuhriah, 2021).

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At the elementary school level, particularly in Indonesian language subjects, reading is a primary focus. This process involves understanding the content of texts, where students connect new information to prior knowledge and experiences (Somadayo, 2011). Field observations indicate that many students, even at higher levels, often struggle not only with reading but also with understanding the content or meaning of what they read (Rahman, 2020). Monotonous teacher methods lead to low student participation and decreased enthusiasm for learning (Khaatimah & Wibawa, 2017).

To address this, an innovative and sustainable learning approach is needed. One promising model is Cooperative Integrated Reading and Composition (CIRC), which integrates reading, writing, and speaking in a collaborative learning environment (Slavin, 2010; Asri et al., 2022). CIRC encourages students to work in small groups, discuss, exchange ideas, and help each other understand the material (Oktafiani et al., 2018; Nurhidayah et al., 2017). Now, there is a wealth of new empirical evidence from Indonesia supporting the effectiveness of this model. CIRC significantly improves students' basic literacy skills (Dewi et al., 2024; Roysa & Sumaji, 2023). CIRC is even more effective than the Jigsaw model in developing students' abilities not only in reading text but also in understanding the meaning of what is read (Sukma, 2023). In fact, the Elementary School Scientific Journal (2024) noted that the implementation of CIRC led to significant improvements in reading outcomes at the elementary school level.

At first glance, it may sound like an old method, but in reality, CIRC can stimulate learning enthusiasm, build self-confidence, and foster student independence (Kusumawardani et al., 2020). This resonance can be especially useful when combined with digital approaches (Kabriati Amaliah, 2025). Game-based learning through Educaplay improves reading comprehension. This approach is also useful in the context of limited teaching materials (Anwas et al., 2022). The quality of textbooks in some regions still varies widely, so methods like CIRC can help bridge the gap in access and material quality.

2. Methodology

This study used a quasi-experimental method with a one-group pretest-posttest design. In this study, only one class was used, namely one group of students was given an initial test (pretest), then given treatment using a game-based learning model, after which a final test (posttest) was given to determine differences in students' reading literacy skills before and after the treatment. The reference for observing students' reading literacy skills was primarily based on those presented in Table 1.

Table 1. Research Design

Pre-test (O_1)	Treatment (X)	Post-test (O_2)
O_1	X	O_2

From Table 1, O_1 is a pretest in the form of a questionnaire where students learn without the CIRC learning model, X is the treatment using the CIRS learning model, and O_2 is the administration of a posttest to one group of students. The subjects used in this study were 10 fourth-grade students of SDN Inpres LESU with the sampling technique used was saturated sampling. The researcher used a saturated sampling approach where the sampling approach is to use all members of the population as samples.

This study used written statements (questionnaires) to collect data regarding students' literacy skills. The researcher conducted direct observations at SDN Inpres LESU, focusing on the Indonesian language learning activities of fourth-grade students during the learning process. To assess students' literacy skills, questionnaires were administered. The collected data were then used to answer the research problem formulation. After the data were collected, they were analyzed through normality tests and hypothesis testing.

Before the normalization test was conducted, a validity test was first conducted. This test was conducted to ensure that the questionnaire instrument used could accurately measure students' reading literacy skills. In this study, the validity test was conducted in one class by distributing a questionnaire developed based on relevant literacy ability indicators. After all students completed the questionnaire, the data obtained were analyzed using the Pearson Product Moment correlation method with the help of SPSS model 26. A test item was considered valid if it had a significance value (Sig.) of less than 0.05 and showed a strong correlation with the overall score. Items that did not meet these criteria were revised or removed to improve the instrument's precision and accuracy.

After the validation system is complete, the next step is to conduct a reliability test to assess the internal consistency between the items in the questionnaire. The reliability test in this study uses the Cronbach's Alpha method which is then analyzed using SPSS version 26. An instrument is said to be reliable if the Cronbach's Alpha value exceeds 0.60, indicating that the items in the questionnaire have an acceptable level of consistency. Based on the measurement results, all statements whose validity was tested also showed high reliability values, indicating that the instrument is suitable for measuring students' literacy abilities.

After the validity and reliability of the instrument were confirmed, the data were then tested for normality and hypothesis testing. A normality assessment was conducted to determine whether the pre-test and post-test data were normally distributed, which is a prerequisite for selecting an appropriate statistical method. In this case, the Shapiro-Wilk test was used, as it is more suitable for small to medium sample sizes ($n < 50$). Data were considered normally distributed if the significance value (p) exceeded 0.05. The testing criteria were as follows:

a. Data is considered normally distributed if the p-value (sig.) is greater than 0.05.
b. Data is not normally distributed if the p-value (sig.) is below 0.05.

If the data meets these assumptions, hypothesis testing is continued using a paired sample t-test, as this study uses a One Group Pretest-Posttest design, where data are paired (from the same group before and after treatment). This test aims to determine whether there is a statistically significant difference between the average pretest and posttest scores after the implementation of the learning media. The criteria for the paired sample t-test are as follows:

a. H0 is rejected and H1 is accepted if the 2-tailed significance value is >0.05, indicating a significant difference between the pre- and post-treatment periods.
b. H0 is accepted and H1 is rejected if the 2-tailed significance value is <0.05, indicating no significant difference between the pre- and post-treatment periods.

3. Results and Discussion

The CIRC (Cooperative Integrated Reading and Composition) learning model is a cooperative learning model that combines reading and writing skills through heterogeneous group work. Its goal is to improve reading comprehension, practice writing skills, develop collaboration and communication, and get students used to exchanging ideas and providing input. The steps include forming groups, providing reading texts, reading and understanding the texts together, discussing the content of the reading, writing summaries or essays, exchanging written work for input, then presenting the results and closing with feedback from the teacher.

In the first meeting, the learning process was conducted conventionally without the CIRC learning model, resulting in students appearing passive and unenthusiastic. In the second meeting, the teacher used the CIRC learning model, which directly increased student engagement. Students became more active, motivated, and enthusiastic in learning, and the classroom atmosphere became more lively and collaborative. The use of the CIRC learning model has proven effective in capturing students' attention and improving their literacy skills.

Pretest and Posttest Scores

Pretest and posttest were administered to 10 students at SDN Inpres LESU. To determine initial literacy skills, an initial test (pretest) was administered to students before treatment, followed by a final test (posttest). Pretest and posttest data were obtained from distributing a literacy skills questionnaire consisting of 14 statements using a Likert scale consisting of answers: Strongly Agree (SS), Agree (S), Disagree (TS), and Strongly Disagree (STS).

Based on the results of statistical analysis, it can be seen that there is a significant difference between the pretest and posttest scores of students' literacy skills after the implementation of the CIRC learning model. This can be seen from the comparison of the average scores which show a significant increase. The average value of learning motivation before treatment (pretest) was 53.9, while after treatment applying the CIRC learning model (posttest), the average value increased to 77.9. The results of the pretest and posttest in the diagram show a significant increase after the implementation of the treatment. It is known that the average value of students' literacy skills before implementing the CIRC learning model was 53.9, while after implementing the CIRC learning model it increased to 77.9. This indicates an increase in students' literacy skills after the implementation of the CIRC learning model. Can be seen in Table 2.

Table 2. Results of the Pretest and Posttest of Students' Literacy Skills

Student Name	Pretest	Posttest
Alya Radhani	50	72
Anis Riska	55	80
Bashir Muhtar	60	85
Dhani Raihan	48	70
Elang Saputra	52	74
Fransiska Ayu	58	82
Kartika Putri	62	88
M.Imam	54	79
Muh. Rijal	51	76
Zahra sausan	49	73

Normality Test Results

The normality test is a statistical procedure used to determine whether a variable's data is normally distributed. To see the data in a normally distributed state, see Table 3.

Table 3. Normality Test Results

Group	Statistics	p-value	Conclusion
Pretest	0.939	0.540	Data is normally distributed
Posttest	0.960	0.789	Data is normally distributed

Based on the Shapiro-Wilk test conducted using SPSS version 26, the significance value was 0.540 for the pretest and 0.789 for the posttest. These values are greater than the 0.05 significance level, so it can be concluded that the data are normally distributed. Thus, the assumption of normality is met, and the analysis can be

continued using the parametric paired sample t-test. Based on Table 3 above, it shows that the pretest and posttest data are normally distributed, because the Sig value is each > 0.05. This meets the requirements for using parametric tests such as the t-test.

Once the assumption of normality is met, statistical analysis can proceed using the parametric paired-sample t-test, which requires normally distributed data. The consistent distribution of pretest and posttest scores indicates that changes in students' literacy skills can be validly analyzed using this method. This supports the validity of the hypothesis test results, as one of the main assumptions of the t-test has been met.

Hypothesis Test Results

Hypothesis testing in this study used a paired sample t-test, because the research design used was a One Group Pretest-Posttest design, where the compared statistics were obtained from the same group of students under different conditions before and after the implementation of the snakes and ladders game-based learning media. The purpose of this test was to determine whether there were differences in students' literacy ability scores before and after the implementation of the CIRC learning model. The assumption of normality was met with the help of the Shapiro-Wilk test results, which allowed the use of this parametric test to be carried out. The following are the results of the processed data analysis presented in Table 4.

Tabel 4. Paired t-Test Results

Statistics t	p-value	Conclusion
-50.91	2.18×10^{-12}	There are significant differences

A significance value of 0.000 < 0.05 indicates that there is a significant difference between the pretest and posttest results. Thus, H_0 is rejected and H_a is accepted, which means that the use of game-based learning models has a significant influence on students' reading literacy skills.

4. Conclusion

Based on the results of the paired sample T-test, it shows a significance value of 0.000, which is smaller than 0.05 (0.000<0.05), so it can be concluded that there is a significant difference between students' literacy abilities before and after implementing the CIRC learning model. The average difference value (mean difference) of 24.0 indicates that students' literacy ability scores after implementing the CIRC learning model increased significantly compared to before being given treatment. Thus, the application of the CIRC learning model has been proven to have a significant effect on improving students' literacy abilities in the Indonesian Language subject for grade IV of elementary school.

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