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THE IMPLEMENTATION OF COOPERATIVE INTEGRATED READING AND COMPOSITION (CIRC) METHOD IN IMPROVING STUDENT'S READING COMPREHENSION AT SMP MUHAMMADIYAH 2 DEPOK SLEMAN

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Keywords

Research, Reading comprehension, CIRC, Cooperative Learning.

Abstract

The objective of this study is to find out whether there is a significant difference in reading comprehension between students who are taught by using cooperative integrated reading and composition (CIRC) and without using it. CIRC was compared with conventional method in teaching-learning process. This study is a quasi-experimental design (Creswell, 2012). The technique sampling of this study is purposive sampling. The subjects of this study were eight grade students of SMP Muhammadiyah 2 Depok, which consisted of 90 students. They were divided into three classes. Two classes were taken. Class A was as an experimental class and class B was as the control class. The pre-test was given to both classes (experimental class and control class) before the treatment. During the study, the students of the experimental class were taught by using CIRC whereas the control class was taught by using conventional method. The teaching-learning process was carried out for five weeks. At the end of the experiment, the post-test was given to both classes. The data were analyzed by using SPSS14 (Independent Samples- Test). The finding revealed that there is a significant difference between CIRC and conventional method in improving students' reading comprehension. The experimental class is proven to be more effective than the conventional method.

Introduction

Cooperative integrated reading and composition (CIRC) method is an active learning to help students in effective learning and providing students with the skills of collaborating, cooperating, sharing and socializing. CIRC is defined as a classroom learning situation in which students of all levels of performance work together in structured groups toward a shared or common goal. The idea behind CIRC method is student's motivation to help one another to master academic materials. According to

Gupta (2014) CIRC is a method to teach reading, composition, and spelling for elementary level. In CIRC reading, students are taught in reading groups and mixed ability teams to work on a series of cooperative activities, including partner reading, making predictions, identification of characters, settings, problems and problem solutions, summarization, vocabulary, spelling and reading comprehension exercises. CIRC provides a structure to help teachers and students succeed in helping all students become effective readers.

CIRC is a teaching method in which small teams, each with students of different levels of ability, use a variety of learning activities to improve their understanding of a subject. Each member of a team is responsible not only for learning what is taught but also for helping teammates learn, thus creating an atmosphere of achievement. According to Hikmanil (2007) there are four advantages of CIRC method in improving students' writing and reading comprehension. First CIRC is a good method of teaching reading and writing because the students could become more active in the learning process. Second the interaction between students could make the students learn more from others. Then, the activities in CIRC method makes the students get involved in teaching learning process because the students not only interact with the teacher but also with other students. Third, through CIRC method, the students could process as group members who worked together effectively. The last, the students could also help each other in understanding the lesson cooperatively. Therefore, students would get a lot of advantages if the teacher takes CIRC into English reading class.

Literature Review

CIRC has been investigated by some researchers. It has been applied in teaching reading as a method in improving students' reading comprehension. Reading comprehension is an active process and the reader must interact and be engaged with the text. It is also a strategic process which can be taught. As comprehension takes place, words are decoded and associated with their meaning in the reader's memory and phrases and sentences are processed rapidly or fluently enough so that the meanings derived from one word, phrase, or sentence are not lost before the next is processed. Yet, Reading comprehension can be described as understanding a text that is read, or the process of constructing meaning from a text (John, 2002). Gupta (2014) shows that the mean score of students' reading comprehension in the experimental group (CIRC) is higher than the control group of seventh graders. It indicates that students who are taught English through CIRC method can improve students' reading comprehension than the students' who are taught through conventional method in teaching reading. Karafkan (2015) shows that the mean score of students' reading comprehension in CIRC class is more than that of the students' reading comprehension in GI class. It confirms that CIRC

method is effective in enhancing students' reading comprehension than group investigation (GI).

Reading Comprehension

Reading Comprehension is an active process and the reader must interact and be engaged with the text for it to work well. It is also a strategic process which can be taught. As comprehension takes place, words are decoded and associated with their meaning in the reader's memory and phrases and sentences are processed rapidly or fluently enough to that the meanings derived from one word, phrase, or sentence are not lost before the next is processed. Yet, reading comprehension is described as understanding a text that is read, or the process of constructing meaning from a text (John, 2002). Reading Comprehension is the principal of what it means to really read by thinking and understanding and getting at the meaning of a text (Serravallo, 2010). Reading comprehension is often conceptualized as functioning at different levels of sophistication and referred to, for example, as literal, inferential and critical. The most basic level (literal) is where the reader is able to understand the factual information presented in a passage of text – for example, he or she can tell you the name of the main character and what he does for a living because that information is stated explicitly in the text (Westwood, 2008). Reading comprehension is explained as the ability to understand what has been read. Comprehending involves strategies that students learn to use when reading independently. (Hollowed, 2017).

Cooperative Learning

Cooperative learning (CL) is one of the active learning strategy to increase learning effectiveness and providing students with the skills of collaborating, cooperating, sharing and socializing. Cooperative learning may be defined as any classroom learning situation in which students of all levels of performance work together in structured groups toward a shared or common goal. Zuo (2011) CL is the students work together and the responsible for their group learning. Garfield (2013) students can improve their skill, their ability, and even their success at find out the solution of the problem in good group activities. McDonell (1992) said that the cooperative classroom is good for L2 students as it allows them to communicate, collaborate, problem-solve, and think critically. The researches have shown that CL is better learning opportunities. It can increase language practice opportunities for participants, promote positive affective climate, and motivate learners. Gupta & Pasrija (2012) given expression to Cooperative Learning is an efficient technique to make students more active in classrooms and it makes teaching-learning more satisfying, momentous, enjoyable and effective.

Jacobs and Hannah (2004) said that every time two and more individuals interact, the potential for cooperation exists. However, it is only under certain conditions that we can say cooperation does exist. As a highly structured method, cooperative learning encompasses five important elements. These inevitable elements are:

a. Positive Interdependence
   Positive interdependence is the belief that there is a value in cooperating with other students and that both individual learning and performance will be improved as a result of collaboration.
b. Individual Accountability / Personal Responsibility
   Personal responsibility exists when the performance of each member is assessed, and the results of personal responsibility gave impact to the individual and the group score.
c. (Face-to-Face) Promotional Interaction
   The promotional interaction is refers to the act of students encouraging and helping each other to achieve the group's goal.
d. Appropriate Use of Social Skills
   As we know, socially unskilled group members cannot cooperate effectively. These skills vary according to the age of the students and the cultural context. In order for the group members to get their desired aims they must: 1) get familiar with and believe each other, 2) communicate accurately and unambiguously, 3) accept the differences and support each other, 4) resolve conflict constructively.
e. Group Processing
   Group processing occurs when group members think about that the member actions were cooperative and uncooperative and decide which actions should be continued or changed.

Cooperative Integrated Reading and Composition (CIRC)

CIRC is a comprehensive method to teach reading and writing for grades two through eight. CIRC consists of three principal elements: story-related activities, direct instructions in reading comprehension, and integrated writing/language arts. In all of these activities, students work in heterogeneous learning teams. All activities follow the sequences that involve teacher presentation, team practice, independent practice, peer pre-assessment, additional practice, testing, and team recognition (Slavin, 1987).

In CIRC, teachers use reading texts and reading groups in teaching and learning process. The all students are placed to teams consists of two pairs of two different reading groups. While the teacher is working with one reading group, the paired students in the other groups are working on a series of engaging activities, including reading to one another, making predictions about how narrative stories will come out,

summarizing stories to one another, writing responses to stories, and practicing spelling, decoding, and vocabulary. Students work as a team to master "main idea" and other comprehension skills. During language arts periods, students engage in writing drafts, revising and editing one another's work, and finalizing the texts.

Method

Research questions

Q1: How is students' reading comprehension before implementing CIRC method and Conventional method?

Q2: How is the students' reading comprehension after implementing CIRC method and Conventional method?

Q3: Is there any significant difference of students' score of reading comprehension before and after CIRC and Conventional method are implemented?

Q4: Are there any significant differences between CIRC and Conventional method in improving the students' reading comprehension?

Participants

The population of this research was the second grade or eight- year students SMP Muhammadiyah 2 Depok Sleman. They were divided into three classes with 30 students in each class. To determine the number of population of this research, the researcher used the purposive sampling technique because the number of eight-year students was more than 60 students. A sample is a part of a population that is supposed to represent the population's characteristic. According to Singh (2007) sampling is defined as the process of selection of sampling units from the population to estimate population parameters in such a way that the sample truly represents the population. The sampling technique for this study was purposive sampling. It means that certain samples were chosen based on researcher's view that the sample was chosen a representative. Through this technique, two classes were taken and were called as an experimental class and a control class, namely class VIIIA and VIIIC. There were 30 students belonging to the experimental class and 30 students belonging to the control class. In this study, the students in the experimental class were taught English by using CIRC whereas the control group was taught English without using CIRC.

Treatments

a. The students were divided into five groups, each group consist 5 and 6 students with different level of ability.
b. The teacher gives a text (narrative and recount text) to all groups.
c. Students read the text aloud and take a turn with their friend.

d. The teacher asks the students to identify main ideas, understanding causal relations and making inferences.
e. The students list new/difficult words.
f. The teacher asks the students to write a meaningful sentence for each vocabulary word. Then he asks to read the word list aloud to the teacher. The students were not permitted to help one another on these tests.
g. The teacher asks the students to guess the meaning of new words or looked at the dictionary.
h. Students test one another on a list of spelling words and help each other to master the list words.
i. The students discuss the text (narrative and recount text).
j. The students answer the comprehension questions.

Procedures

In order to know the effectiveness of CIRC in this research, there were two techniques used to get valid data. The data were collected by using pre-test and post-test. The pre-test was conducted before the treatments were given. It was applied to both experimental class and control class. The purpose of pre-test was to know the students' ability in comprehending reading text on both groups. The pre-test consisted of 20 multiple choice questions. There were several narrative and recount text passages in the test and the students had to answer the questions based on the text. The post-test was also applied for both classes and was conducted after treatments were given. The purpose of the post-test is to measure the effectiveness of CIRC on students' reading comprehension by looking at students' post-test score. The test used in this post-test was multiple choice questions which consist of 20 numbers. The test in pre-test and post-test was the same. The experimental class and the control class took the same tests. Most of the questions deal with finding out information about paragraph in the text. The test consisted of 20 questions of reading test in which each number had 5 scores for correct answer and 0 for an incorrect answer or not answering.

Operationalization of variables

In this study there were two types of variables which consist of dependent and independent variables.

1. Improvement of student's Reading comprehension was as the dependent variable (Y) because it was influenced by independent variable.
2. CIRC Method was the independent variable (X) that influenced the dependent variables. Independent variable gave a treatment to know whether the independent variable would be affected or not.

Results

The descriptive statistics

The data description of this study deals with the result of the test. This section discusses the test score of the students of the experimental class who were taught by using cooperative integrated reading and composition (CIRC). It is one of the efforts to improve students' reading comprehension. Whereas, the control class was not taught by using CIRC.

As mentioned in the research method, there were pre-test and post-test in this research. For the reading comprehension, the data were collected by giving the students a reading test. The test consists of 20 numbers of multiple choice questions. Here, the correct answer of each item is scored 5 and a false answer of each item is scored zero (0).

From the data of the students' score, the categorization of the was determined as follow. The highest score of both pre-test and post-test is 80- 100. The medium scores is 60-75 and the lowest score is 0- 55. To make it clearer, the following table is the categories of the students' reading comprehension score.

Table 1. The categories of the students' reading comprehension

Score Class	Category
80-100	Highest Score
60-75	Medium Score
0-55	Lowest Score

Data of the pre-test score

The description of the pre- test score of experimental class

The pre-test for the experimental class was held on April 16, 2018. Based on the data analysis of pre-test with the computer assistant SPSS 14 mean, standard deviation, variance, and total scores were found. The following table shows the category of students' reading comprehension based on the result of the reading test (pre-test).

Table 2. The frequency of the students' reading comprehension based on the result of the pre-test.

Score class	Number of students	Percentage	Category
80-100	4	13%	Highest score
60-75	24	80%	Medium score
0-55	2	7%	Lowest score
Total	30	100%	

In the table above, it is clearly seen that there are 4 students (13%) who are in the highest score category, 24 students (80%) who are in the medium category, and 2 students (7%) in the lowest category. The reading test consists of 20 items which have 80- 100 for probable highest score and 0- 55 for the probable lowest score. The data from the frequency distribution of the students' pre-test score show that the highest score of the experimental class is 85 while the lowest score of the experimental class is 50. The mean score of the experimental class is 70.33. The detail information is presented the table below.

Table 3.
The descriptive analysis on the pre-test scores of the experimental class

Mean	SD	Score Max	Score Min	N
70.33	8.889	85	50	30

The descriptive analysis on the reading comprehension test score says that the mean score of the experimental class is 70.33 and the standard deviation of the experimental class is 8.889. Based on the table of category of the experimental class above, the students' reading comprehension is in the medium category. The mean score of the experimental class is 70.33. It lies between the class score of 70-75. Therefore, it is stated that the students' reading comprehension of the experimental class before the treatment is within medium category.

The description of the pre- test score of the control class

The other class employed in this research is the control class. The class consists of students who were not taught English by CIRC during teaching and learning process. Before conducting the test, the teacher taught the students of the control class with the same material by using conventional method. It was meant to avoid the deep gap between the result of students' reading comprehension scores of the experimental class and the control class. The following table shows the category of the students' reading comprehension based on the result of the reading pre-test score of the control class.

Table 4.
Frequency of the students' reading comprehension based on the result of the pre test.

Score class	Number of students	Percentage	Category
80-100	6	20%	Highest score
60-75	23	77%	Medium score
0-55	1	3%	Lowest score
Total	30	100%	

As it can be seen from table 4 above we know that 6 students (20%) belong to the highest category, 23 students (77%) belong to the medium category, and 1 student (3%) belong to the lowest category. The data from the frequency distribution of students' test score shows that the highest score of the control class is 85 while the lowest score is 50. The mean score of the control class is 71.17. The detail information is presented in the table below.

Table 5. Descriptive analysis of the pre-test scores of the control class

Mean	SD	Score Max	Score Min	N
71.17	7.621	85	50	30

The descriptive analysis of the reading comprehension of pre-test score presents that the mean score of the control class is 71.17 and standard deviation is 7.621. Based on the table of the category above, the reading comprehension of the students of the control class is in medium category. The mean score of control class is 71.17 which lies between the score of the class 70-75. Therefore, it can be stated that the students' reading comprehension of the control class is medium category.

The comparison of pre- test between experimental class and control class

Before teaching by using CIRC or without using it, it has to be ensured that students' reading comprehension of both the experimental class and the control class was in the same level. The pre-test was conducted before the researcher began teaching all the materials. The following table describes the statistical data on the pre-test of the students' reading comprehension of the experimental class and control class. The result of the pre-test in the experimental class and the control class was compared. This was done to find out whether or not there was a significant difference in the students' reading comprehension before they were taught by using CIRC for the experimental class and conventional method for the control class.

Table 6. The statistical data the pre-test of students' reading comprehension of the experimental and control class

Data	Experimental Class	Control Class
Number of students	30	30
Sum of Scores	2110	2135
Variance	79.20	58.07
Mean	70.33	71.17
SD	8.889	7.621

The table above notifies that there is no difference between the class category of both experimental class and control class. The total pre-test scores of the experimental class is 2110 and the total pre-test scores of the control class is 2135. In addition, the mean of the pre-test of the experimental class and control class are 70.33 and 71.17 which means that students' reading comprehension of both classes belongs to the medium category. The reason is the mean score of experimental class and control class lies between the class score of 70-75. It means that students' prior knowledge is the medium category.

Data of the post- test score

The description of post-test scores the experimental class

The aim of this description is to find out whether or not CIRC improved the students' reading comprehension of the experimental class. The following table explains the statistical data of the students' reading comprehension based on the result of the post-test of both classes. The data were taken after the students got some treatments. In the table below, it is shown that 24 students (80%) belong to the highest category, 6 students (20%) belong to the medium category, and no one belongs to the lowest category. After checking the statistical data of the pre-test and the post-test, there is no doubt that the students improve their comprehension in reading. The students' reading comprehension of the experimental class based on the result of the post-test is as follow;

Table 7.
The category of the students' reading comprehension of the experimental class after the treatment

Score class	Number of students	percentage	Category
80-100	24	80%	Highest score
60-75	6	20%	Medium score
0-55	-	-	Lowest score
Total	30	100%	

However, this statement should be ensured as the result of the t-test may say differently. Another table below describes the analysis on the result of the reading comprehension after the treatment.

Table 8. Data of the reading comprehension of the experimental class.

Mean	SD	Score Max	Score Min	N
80.83	4.698	90	70	30

The data from the frequency distribution of the students' post-test score inform that the highest score of the experimental class is 90 while the lowest score is 70. The mean score of the experimental class is 80.83, while the standard deviation of the experimental class is 4.698. Based on the score category as displayed on table 7, it can be said that the students' reading comprehension of the experimental class belongs to highest category (very good). The mean score of the experimental class (80.83) lies between class categories 80-90.

The description of post-test score of the control class

In the order to find out whether or not conventional method improved the students' reading comprehension of the control class, the post-test was conducted. The table below shows that the brief data of post-test score of the control class. The data shows that most of students are in medium category.

Table 9.
The Category of the students' post reading comprehension test of the Control class after the treatment.

Score class	Number of students	Percentage	Category
80-100	9	30%	Highest score
60-75	21	70%	Medium score
0-55	-	-	Lowest score
Total	30	100%	

The table above presents that 9 students (30%) belongs to the highest category, 21 students (70%) belong to medium category, and no one student belongs to the lowest category.

Data analysis of the research hypothesis

This study was conducted to find out the difference between students' reading comprehension skill was taught by using CIRC and the students who were taught without using CIRC. This study was done at SMP Muhammadiyah 2 Depok Sleman.

The aim of data analysis based on the hypothesis is to find out the differences between the experimental class and the control class in their reading comprehension skill. The purpose of the hypothesis test is to prove whether or not CIRC has an influence in improving students' reading comprehension at SMP Muhammadiyah 2 Depok. In order to examine the hypothesis of this study, the Independent sample t-test and paired sample test were applied.

The comparison of pre-test and post- test of the experimental class and the control class (Paired Sample Test)

Paired sample t-test is used to determine the effectiveness of the conventional method and Cooperative integrated reading and composition (CIRC) in teaching reading at SMP Muhammadiyah 2 Depok Sleman. The scores of pre-test and post-test of each class were compared to know the improvement between pre-test and post-test of both classes. The data were analyzed by using SPSS 14 to compare the score of the pre-test and the post-test of both classes. The assumption whether the null hypothesis is accepted is if the significance level of t-test is higher than probability significance (Sig < .05). The result is presented in table 11.

Table 10.

The descriptive statistics of experimental class before and after treatment.

SD	Mean	Numbers	Variable
8.899	70.33	30	Pre- Test
4.564	80.83	30	Post- Test

Table 10 indicates that the mean score of the experimental class before the treatment is 70.33, whereas the mean score of the experimental class after treatment is 80.83. It is claimed that the mean score of the experimental class after treatment is the higher than that before the treatment. Therefore, there is a positive effect of CIRC in teaching reading.

Table 11. The paired sample test of the experimental class.

Sig (2-tailed)	df	SD	t_o	Variable
.000	29	6.345	-9. 064	Reading Comprehension

The significant value of the difference between before and after treatment of the experimental class at the significance level of 0.05 is .000 which is less than 0.05 (.000 <0.05). So it can be claimed that there is a significant difference between the mean score of the reading comprehension score before and after treatment by using CIRC. Therefore, CIRC method has the decisive influence on the score of reading comprehension test.

Table 12. The descriptive statistics of control class before and after treatment.

SD	Mean	Numbers	Variable
7.621	71.17	30	Pre- Test
5.713	74.63	30	Post- Test

The table above shows the reading comprehension mean score of a control class without using CIRC. As it is apparent from the table, the mean score of the students' reading comprehension before and after course of the control class is 71.17 before course and 74. 63 after course. So the mean score of control class after the course is the higher than that of before course.

Table 13. The paired sample test of control class.

Sig (2-tailed)	df	SD	t_o	Variable
.000	29	4.577	-4. 188	Paired Differences

The significant value of the difference between before and after course of the control class at the significance level of 0.05 is .000 which is less than 0.05 (.000 <0.05). So it can be said that there is a significant difference between the mean score of the reading comprehension score before and after course without using CIRC of the control class.

The paired sample t-test above explained that CIRC and conventional method is both effective methods in improving students' reading comprehension. There is a significant difference between pre-test and post-test of both classes. However, the mean score the post- test of CIRC (80.83) was higher than that of the conventional method (CM) (74.67). It points out that CIRC method gives more improvement than CM.

The comparison of the effectiveness of two methods in improving students' reading comprehension (independent sample test)

In determining which method is more effective, the conventional method or CIRC method the independent test was used to analyze the data. The hypothesis of this test is to find out whether there is any significant difference between CIRC method and conventional method in improving students' reading comprehension. The test was analyzed by using SPSS 14 (Independent test). The assumption whether the null hypothesis is accepted by seeing the significance level of the test which is higher than probability significance (sig < .05). The result is as follow;

Table 14. The descriptive statistics pre-test of experimental class and control class.

SD	Mean	Numbers	Variable
8.889	70.33	30	Pre- Test E. class
7.621	71.17	30	Pre- Test C. class

The table 14 shows the reading comprehension mean score of experimental class and control class. The mean score of pre-test of the experimental class is 70.33 and the mean score of the control class is 71.17. So the mean score of the experimental class and that of control class is almost the same.

Table 15. The result of the t-test between on the pre-test of the experimental class and the control class.

Sig (2-tailed)	df	t_o	t_t	Variable
.698	58	-3. 90	1.671	Ex and Co Class

Where:

Ex : Pre-test of the experimental class

Co : pre-test of the control class

t_o : t observed value

t_t 5 % : value of t table in the significance level 5%

df : degree of freedom

Sig. : The probability significance

't'-value (1.671) of Table 15 shows the difference in pre-test of the experimental class scores and the control class scores was found to be insignificant. The value of t_o is less than that of t table at the significances level of 5%, i.e. -3.90 < 1.671. The probability significance (sig) is higher than significance level (α) 5%, i.e. (0.698 > 0.05). Thus

hypothesis Ho which says there is no significant difference between CIRC and conventional method in improving students' reading comprehension before experimental class treatment' is accepted. It can concluded that there is no significant difference in the mean scores of reading comprehension achievement of experimental class and control class i.e. initially experimental class and control class was similar in their reading comprehension.

Table 16. The descriptive statistics of post-test of the experimental class and the control class.

SD	Mean	Numbers	Variable
4.698	80.83	30	Post- Test E. class
5.570	74.63	30	Post - Test C. class

The above table shows the reading comprehension mean score of the experimental class of CIRC and control class of CM. As it is evident from the table, the mean score of reading comprehension for the CIRC as the experimental class is 80.83 and for the CM as the control class is 74.63. So the mean score of the experimental class of CIRC is higher than that in the control class.

Table 17. The result of the t-test between the post- test of the experimental class and the control class.

Sig (2-tailed)	df	t_o	t_t	Variable
.000	58	4.619	1.761	Ex and Co Class

The table 17 proved that 't'-value (1.761) for the difference in mean score of the experimental class and the control class of reading comprehension achievement scores in post-test is highly significant at 0.00 level which explains that the experimental class is better than control class in post-test on reading comprehension accomplishment. The value of t_o is higher than that of t table at the significances level of 5%, i.e. 4.169 > 1.671. The probability significance (sig) is less than significance level (α) 5%, i.e. (0.00< 0.05). Thus the hypothesis Ho which says there is no significant difference between CIRC and Conventional method in improving students' reading comprehension is rejected. Thus there is significant difference between students' reading comprehension which is taught by using CIRC method than taught by using conventional method. It can be concluded that CIRC method is more effective than the conventional method in improving students' reading comprehension of students SMP Muhammadiyah 2 Depok.

DISCUSSION

The objective of this study was to investigate the effectiveness of CIRC as a method to teach reading comprehension to the eight graders. The result of this study suggests that CIRC method is more effective than the conventional method in improving students' reading comprehension which confirms the findings by Durkan (2011), Karafkan (2015), Zarei (2012), and Gupta (2014) that revealed results with positive outcomes of CIRC in improving reading comprehension. Durkan (2011) found that CIRC method is more effective than conventional method on teaching reading comprehension and writing skill. Karafkan (2015) said that the CIRC group means score is more than GI (group investigation) group. Therefore CIRC method is better in enhancing students' reading comprehension than GI. Zarei (2012) found the effectiveness of CIRC technique than STAD, and conventional method in improving students' reading comprehension and vocabulary. Gupta and Ahuja (2014) also confirmed the effectiveness of CIRC technique. In their study, the mean gain of the experimental group is the higher than the mean gain in the control group. This confirms that CIRC method is more effective in reading comprehension achievement score. Mubarok and Sofiana (2017) said that CIRC strategy is better than conventional strategy in increasing students' reading ability.

CIRC is one of the cooperative learning (CL) techniques. Keshavarz et al (2014) said that the cooperative classroom certain relationships among all groups. In the group's mates, they can encourage each other and use more ability to obtain group success while in the non-cooperative classroom interdependence is dominant since teaching and learning process. In the CL the students receive encouragement and support from their counterpart. Their counterpart is available to help when they need answer and solution of the problems. The best performance in CL instruction is through CIRC.

Pan (2013) said that students who are taught by using RCL (reciprocal cooperative learning) instruction had significantly higher liking, dedication, self-efficacy, and extrinsic motivation than students who are taught by using conventional instruction. Therefore, in his study 86% of the students confirmed that in the RCL group gave benefit on their reading comprehension, enhanced their score, and increased their confidence.

The other study found that there were many positive effects of cooperative learning in teaching reading. Gaith (2003) said that cooperative learning strategy can improve students' reading comprehension in EFL reading achievement. Myers (2006) argued that cooperative strategy is one the techniques and approaches for improving reading comprehension. Tracy and Barbara (2003) showed that there is a greater understanding and overall comprehension development when children work together sharing their perceptions of text in reading comprehension.

Guvenc (2010) said that there are positive effects on critical thinking, student elaboration, and metacognitive control strategy usage in cooperative learning and learning journal.

In addition, according to Jalilifar (2010) work together and the interaction among groups can increase students' achievement in the classroom.

Conclusions and directions for future research

The finding of this study confirms that there is no significant difference was found in the reading comprehension achievement scores of the experimental class and control class of eighth graders before experimental treatment. However, the students' reading comprehension in the post-test is significant difference. The experimental class was the higher than control class. This implies that students who were taught by using CIRC show significant improvement in their reading comprehension achievement than the students who received instructions through conventional method. And also independent samples test showed that there is the significant improvement of CIRC than conventional method in improving students' reading comprehension at eight graders. This study suggests that students who are taught reading through CIRC benefited more in their reading comprehension improvement than the students who received instructions through the conventional method of teaching reading. Moreover, in order to better understand the positive effect CL technique in teaching reading, the future studies should explore the other technique of CL.

Declaration of conflicting interest

The authors declare that there is no conflict of interest.

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Appendix 1

The descriptive statistics of the experiment class and the control class

		Pre-test C	Pre-test E	Post-test C	Post–test E
N	Valid	30	30	30	30
	Missing	0	0	0	0
Mean		71.17	70.33	74.63	80.83
Std. Deviation		7.621	8.899	5.750	4.698
Variance		58.075	79.195	33.068	22.075
Range		35	35	25	20
Minimum		50	50	60	70
Maximum		85	85	85	90
Sum		2135	2110	2239	2425
Percentiles	25	70.00	63.75	70.00	79.25
	50	70.00	75.00	75.00	80.00
	75	75.00	75.00	80.00	85.00

Frequencies

		Pre-test Control class	Post-test Control class	Pre-test Experimental class	Pro-test Experimental class
N	Valid	30	30	30	30
	Missing	0	0	0	0
Mean		71.17	74.67	70.33	80.83
Std. Deviation		7.621	5.713	8.899	4.564
Variance		58.075	32.644	79.195	20.833
Range		35	25	35	20
Minimum		50	60	50	70
Maximum		85	85	85	90

The frequency of table

The pre-test of the experimental class

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	50	2	6.7	6.7	6.7
	60	5	16.7	16.7	23.3
	65	2	6.7	6.7	30.0
	70	5	16.7	16.7	46.7
	75	12	40.0	40.0	86.7
	80	2	6.7	6.7	93.3
	85	2	6.7	6.7	100.0
	Total	30	100.0	100.0	

The post-test of the experimental class

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	70	1	3.3	3.3	3.3
	75	5	16.7	16.7	20.0
	80	14	46.7	46.7	66.7
	85	8	26.7	26.7	93.3
	90	2	6.7	6.7	100.0
	Total	30	100.0	100.0	

The pre-test of the control class

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	50	1	3.3	3.3	3.3
	60	4	13.3	13.3	16.7
	65	1	3.3	3.3	20.0
	70	11	36.7	36.7	56.7
	75	7	23.3	23.3	80.0
	80	5	16.7	16.7	96.7
	85	1	3.3	3.3	100.0
	Total	30	100.0	100.0	

The post-test of the control class

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	60	1	3.3	3.3	3.3
	65	2	6.7	6.7	10.0
	70	6	20.0	20.0	30.0
	75	12	40.0	40.0	70.0
	80	7	23.3	23.3	93.3
	85	2	6.7	6.7	100.0
	Total	30	100.0	100.0	

Appendix 2

Paired sample T- test

Paired sample T- test of the experimental class

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	pretest	70.33	30	8.899	1.625
	posttest	80.83	30	4.564	.833

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair pretest -	-	6.34	1.158	-	-	-	29	.000

1	postest	10.500	5		12.869	8.131	9.064		

Paired Samples Test

Paired sample T-test of the Control Class

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	pretest	71.17	30	7.621	1.391
	postest	74.67	30	5.713	1.043

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	pretest - postest	-3.500	4.577	.836	-5.209	-1.791	-4.188	29	.000

Appendix 3

Independent sample test

Independent sample test of pre- test score of the experimental class and the control class

Group Statistics

	kelas	N	Mean	Std. Deviation	Std. Error Mean
score	experimental class	30	70.33	8.899	1.625
	control class	30	71.17	7.621	1.391

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
score	Equal variances assumed	.975	.328	-.390	58	.698	-.833	2.139	-5.115	3.449
	Equal variances not assumed			-.390	56.659	.698	-.833	2.139	-5.117	3.451

Independent sample test of post- test scores of the experimental class and the control class

Group Statistics

	Kelas_8	N	Mean	Std. Deviation	Std. Error Mean
Result	experimental class	30	80.83	4.564	.833
	control class	30	74.67	5.713	1.043

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
result	Equal variances assumed	.605	.440	4.619	58	.000	6.167	1.335	3.494	8.839
	Equal variances not assumed			4.619	55.303	.000	6.167	1.335	3.491	8.842