COLLABORATIVE STRATEGIC READING VS RECIPROCAL TEACHING STRATEGY: EVALUATION STRATEGIES FOR IMPROVING INDONESIAN ELEMENTARY SCHOOL STUDENTS' READING COMPREHENSION PERFORMANCE

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Abstract

Previous research has supported strategies of Collaborative Strategic Reading (CSR) and Reciprocal Teaching Strategy (RTS) to enhance reading comprehension performance in different populations but no study has been found to examine the effectiveness of both strategies of reading among elementary students. This study aims to investigate CSR and RTS among elementary students. A quasi-experiment with a non-randomized control group pre-test-post-test design was used by 125 elementary school students and 3 teachers were equally assigned to the intervention and control group. Data collection used the intelligence test (CPM) and the reading comprehension test. Treatment was carried out over ten weeks with nine meetings for each treatment. Results showed that there is a significant interaction effect between treatment and time, $F(1, 36) = 140.27$, $p < .001$, and a main effect of time, $F(1, 36) = 28.50$, $p < .001$. However, there is no main effect of the treatment, $F(1, 36) = 1.11$, $p = .299$. Due to the main effects of Time or Treatment, the post-test score ($M = 18.32$) is higher than the pretest ones ($M = 13.24$), and the score of the RTS group ($M = 13.95$) is like one of the CSR groups ($M = 12.53$). It means that children in the CSR group demonstrated significant improvement over than RTS group and the CSR was more effective than the RTS strategy. The RTS group ($M = 13.95$) is like the one of the CSR groups ($M = 12.53$, $p < .05$) and as expected the score of the CSR group ($M = 19.89$) is higher than that one of the RTS group ($M = 16.7$, $p < .05$). The CSR is a more effective method to improve reading comprehension performance for elementary school students than RTS.

Keywords: collaborative strategic reading; reciprocal teaching strategy; evaluation strategies; elementary school; reading comprehension performance; quasi-experiment

INTRODUCTION

Reading comprehension are essential activities to gain various information in life and mastering subjects at school (Spörer & Brunstein, 2009). If student has not able to comprehend the subject, they will have a problem in the class (Lusnig et al., 2023; Oladele & Oladele, 2016), and may cause failure in getting excellent achievement at school (Beek et al., 2019; Keenan et al., 2006; Kim, 2019; Meixner et al., 2019; Schiefele et al., 2012).

Previous study found that student in elementary school has low reading comprehension (Ahmed Abdel-Al Ibrahim et al., 2023). In Indonesian elementary schools, students frequently demonstrate low reading comprehension due to the conventional, teacher-centered learning methods, characterized by monotony, passivity, and the prevalent use of expository texts in subject books, which often feature complex reading structures, challenging vocabulary, and intricate relationships among ideas (Latifah et al., 2018; Praditha et al., 2017; Suryani, 2014)

and poor student mastery of reading comprehension strategies (Lederer, 2000). One of the factors that influence reading comprehension is reading comprehension strategies. This is supported by research results which prove that reading comprehension strategy intervention can be an effective method for improving students' reading comprehension (Pfost & Heyne, 2022). If students know reading comprehension strategies, they will apply these strategies when reading certain material (Schumm, 2006). In this research, students were trained to be able to apply certain strategies when reading (Schumm, 2006; Spörer & Brunstein, 2009).

The mechanism by which reciprocal teaching strategy (RTS) is guiding students to understand reading the material through the involvement of teachers and more skillful peer to master the strategy of asking a question, concluding, explaining, and forecasting (Oo et al., 2023). According (Lusnig et al., 2023; Oo et al., 2021) RTS makes students learn through cooperation with their teacher and peers and has shown a positive impact on pupil progress (Bosanquet & Radford, 2019) and improve student's reading comprehension skills (Reshadi-Gajan et al., 2020). The second is Collaborative Strategic Reading (CSR), it is a reading method that consists of four meta-cognitive and cognitive methods (Nosratinia & Mohammadi, 2017). The strategy consists of preview, click and clunk, get the gist, and wrap up (Bryant et al., 2000; McCown, 2012). According to Vaughn et al. (2013), CSR is an approach used to improve reading comprehension performance and has shown to be able to improve students' understanding of the text (Bryant et al., 2000; Klingner & Vaughn, 1996; Nosratinia & Fateh, 2017; Vaughn et al., 2013).

The difference between the two reading strategies lies in the involvement of other, more expert people. Where in reciprocal teaching the teacher accompanies students in the process from the beginning and until the end of the discussion, even though there is a change in the discussion leader (more expert peers), while in the collaborative reading strategy, the teacher only provides an introduction about how to apply the collaborative reading comprehension strategy, then the discussion takes place with more expert peers act as group leaders, while the teacher only supervises the entire group. Besides that, there are also differences in the implementation steps. Despite these benefits for reading comprehension, no study examined the effectiveness of CSR and RTS on reading comprehension. The experimental design can help researchers find out which method is more effective for improving elementary school students' reading comprehension. Therefore, this study has two primary goals. First, this study investigated the effect of CSR and RTS on student's reading comprehension performance. Second, this study will identify a better reading comprehension strategy, which is more suitable for elementary school students in Indonesia. The hypothesis of this research is that collaborative strategic reading (CSR) is a more effective method to improve reading comprehension performance for elementary school students than reciprocal teaching strategy (RTS).

METHOD

A quasi-experimental, with equivalent control group design was used: 2 (Treatment: CSR vs RTS) x 2 (Time: Pre-test vs post-test) and second factor is within participant factor. The design of two groups by giving pre-test to both groups (to determine the initial level of understanding of their reading before being treated) and doing post-test to find out the effect of treatment on both groups (Creswell, 2012). Students who participated in this study were recruited in coordination with a government elementary school in Jakarta. The selection of schools is based on the following characteristics: a) the school is a public elementary school with a large and heterogeneous number of students with a classical teaching system, b) the school has 3rd grade elementary school students whose

are starting to be given lessons that require comprehension, so that they are just learning to develop ways of understanding reading. In this way, teaching reading comprehension strategies can be more easily absorbed by students because they have not been taught reading comprehension strategies like in higher classes.

The sampling technique used purposive sampling, where the samples selected are those that meet certain predetermined criteria (Kerlinger & Lee, 2000). The actual number of participants is 120 in third grade assessed on two tests (reading comprehension test and intelligent test). Thirty-eight students chosen matched the inclusion criteria: third-grade elementary school students, the average age of participants was 8.5 years old, had a minimum average intelligence and had low or moderate reading comprehension test scores. Nineteen students in CSR treatment and nineteen students in RTS treatment. One teacher taught in CSR treatment; two teachers taught in RTS treatment. Both had 5 years of school teaching experience. This study also involved six expert students who had IQ above the average and had high reading comprehension scores. Four expert students in CSR treatment and two students in RTS treatment.

Instrument

Intelligence test

The Colored Progressive Matrices for Children test (CPM) by Raven was used to identify children's intelligence. Measurement of the subject's general abilities done because general abilities affect students' reading comprehension. The test consists of 36 questions consisting of patterns with no parts removed. The subject's task is to fill in the missing part by choosing one of the six choices in the answer choices. The questions consist of parts A1 to A12, AB1 to AB12, and B1 to B12 with increasing difficulty. The test completion time is 25 minutes. The test was carried out in small groups, with five people in each group.

Reading comprehension test

The reading comprehension test in this study is a student reading comprehension test created by Latifah et al., (2018) for third-grade elementary school students. This test has a reliability number $\alpha = .72$ and item-total validity ranging from .23 to .42. This test kit consists of 31 questions that reveal the level of reading comprehension literal level, interpretive level, and critical level.

The literal level is the level where the child can mention the main idea, the detail in the reading, the cause and effect, and the sequence of events of a story, the ability to master the vocabulary, the meaning of sentences and paragraphs. The interpretative level is the level where children can guess or make hypotheses based on the information listed or based on intuition and personal experience. The critical level is the level achieved if someone could evaluate by comparing ideas found in the reading material with specific standards and drawing conclusions about the accuracy, appropriateness, and timeliness of the reading they read. This reading comprehension test consists of three to seven paragraphs with topics on reading about the animal world, history, technology, weather, and climate, and art. The student's task is to read the paragraph before answering several questions, in the form of multiple-choice questions where students can choose one answer from four answer choices. The correct answer gets a score of 1, while the wrong answer gets a score of 0. Then it is categorized into low, medium, and high levels of understanding.

The text used in the treatment

The readings used for this intervention are readings taken from expository textbooks used at school and children's reading material and interesting for third-grade elementary school students based on the study of Latifah et al., (2018) namely Proficient in Three Minutes of Learning General Knowledge: Prominent Inventors, Our Bodies, Environment (Seok-Ho & Seok-Cheon,

2006). Moderns Science for Third Grade Elementary School (Lawalata et al., 2008). The Book Made Me Smart 3 for Third Grade Elementary School (Warsidi & Farika, 2008). These texts have evaluated by a linguist and corrected by the supservisor and teacher's elementary schools. The text has been tested on students in the third-grade trial group to ensure that the readings can be used for treatment.

Procedure

The research began by preparing research instruments and compiling CRS and RTS treatment modules. The selection of research subjects follows them by conducting intelligence tests and reading comprehension tests, then compiling treatment guidelines, and briefing on teachers and expert students, and intervention groups. Then proceed with the intervention trials on other students who were not involved in the study. This treatment trial was conducted to ensure that teachers and expert students understood their role during the treatment process, the implementation of interventions, and the measurement of treatment results and treatment evaluations. Samples are divided into two groups. One group as experiment received CSR treatment, and other groups as a control group received CSR treatment, with each group consisting of around 20 students. Pretest and post-test given to both groups before and after the treatment.

The intervention was carried out over nine meetings with each meeting lasting 1.5 hours. This activity was conducted by four teachers. Two teachers had done RTS assisted by two expert students, and one teacher had used CSR assisted by four expert students. In RTS group consisted of two discussion groups, each group consisting of one teacher, 10 students, and one expert student. While the CSR group consisted of four discussion groups consisting of five students and one expert student. The intervention activities began in class 3b at 7.30-9.00 AM, then continued by the RTS group intervention at 9.30-11.00 AM. To ensure that their involvement does not

influence the results of the research, the researcher did several things: selecting teachers and students: they were selected by special selection, for teachers selected teachers who had good teaching skills, were willing to take part in training to become trainers and were good teachers, has more than 3 years of teaching experience. For expert students, students are selected who have IQ test results above average and have high reading comprehension scores.

Analysis

Two-way ANOVAs were used to discover the interaction effect and the main effect of treatment or time on improving the reading comprehension and which scale are more useful to be applied to third-grade elementary school students and one-way ANOVA is used to discover the effect of each treatment to increase reading comprehension performance (Howitt & Cramer, 2011; Dancey & Reidy, 2007).

RESULT AND DISCUSSION

The two-way ANOVA showed that in the post-test, there is a significant interaction effect between treatment and time, $F(1, 36) = 140.27$, $p < .001$, and a main effect of time, $F(1, 36) = 28.50$, $p < .001$. However, in the pretest, there is no main effect of the treatment, $F(1, 36) = 1.11$, $p = .299$.

In addition, there is an interaction effect between Time and Treatment in the experiment and control group. In the pretest time, one-way ANOVA shows the RTS group ($M = 13.95$) is like one of the CSR groups ($M = 12.53$), and the post-test score of the CSR group ($M = 19.89$) is higher than the RTS group ($M = 16.74$).

Relative Treatment Effects (RTEs) were calculated to estimate the probability that the score of the post-test condition would be higher than the score in the pretest condition (See Figure 1). This result allowed us to estimate the effect size and understand *the*

condition-by-time interaction (Erceg-Hurn & Mirosevich, 2008). The RTE in the RTS group (*M* = 13.94) is like the one of the CSR group (*M* = 12.52) and the post-test score of the treatment group (CSR) was significantly higher (*M* = 19.89) than the control group—RTS—(*M* = 16.74) and showing that students in the treatment group were more likely than the control group to get higher scores than the pretest.
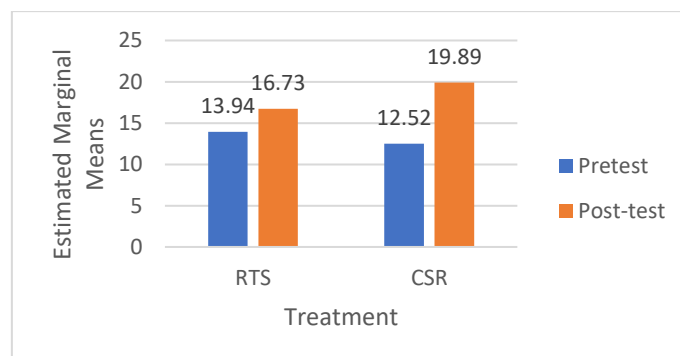

Figure 1. Related Treatment Effects (RTEs) between RTS and CSR

This study examines the effectiveness CSR and RTS on student's reading comprehension in Indonesia. We conduct experimental research to know the effects of CSR and RTS on reading comprehension. We control student IQ because reading comprehension has direct and indirect correlation with working memory capacity (Swart et al., 2017) and student reading skill because text reading fluency significantly predicts reading comprehension (Solari et al., 2017). We found statistically significant effects of CSR and RTS on reading comprehension. On the other hand, this study proved that CSR was more effective than RTS. It means that teaching students in small groups with a peer group is more effective than in bigger groups like in RTS.

Teaching the reading comprehension strategy is a type of teaching that is beneficial for students, especially to help them whenever they find difficulty in understanding the reading text (SemercİoĞlu et al., 2020). It can proceed with several factors considered such as teacher's role in facilitating the learning process, the stages in possessing the reading comprehension strategy, and the presence of a peer with a high level of reading comprehension in the group that was able to make other students actively completing the tasks (Vaughn et al., 2013). In the treatment, the student was given specific responsibility during the learning process through role distribution, so they were motivated to have an active role throughout the learning. Students acted as tutor and tutee that shared similar responsibility in making their partner learn and practice a required skill that makes the task more effective (Klingner & Vaughn, 1996; Lederer, 2000), social interaction in the group made student have a deep understanding (Meixner et al., 2019). The peer involvement and responsibility provision aim at making students more responsible towards themselves and peers in their groups and making students be able to help each other and get opportunities to work in a group. In other words, peer groups giving each other's feedback, providing comfortable feelings in learning for those having peer-teachers, providing knowledge sharing, and making students have initiatives to actively involved in the learning process for them to turn correct and give feedback towards their peers' assignments (Nosratinia & Fateh, 2017).

This study found the essential factor when practicing RTS is an active role of the respective teacher in supervising students to master the strategies step-by-step, observing in detail each student's involvement, and motivating students to be involved during the discussion process. The role of teachers cannot merely be replaced during the learning process. The class condition and learning time

are also factoring to determine the success of learning (Vaughn et al., 2013).

There are several differences in applying CSR and RTS in this study, especially from the students' role demand during the learning process. In CSR, students requested to have an active role by designating an essential role for each student to practice, and everyone is responsible for the group's success. Students informed that they were given two responsibilities that are to ensure that they have learned the material and to assist other students in their group to learn a similar skill. It meant to stimulate students to apply the critical skill in order to be able to play the role well in a group, take part in the discussion, offer a clear question, and assess the problem-solving (Boardman et al., 2016). Besides that, the teacher is not involved too often during the discussion process. Students are allowed interacting and discussing freely in small groups, while the teacher only took part as the facilitator who is ready to assist and provide an explanation when needed, and to give feedback at the end of the discussion session, especially when each group presents their discussion result.

Another difference from the RTS is during the discussion session, starting from the initial stage, the students trained to practice the strategy independently taught by the teacher in the previous meeting. The role of the skillful student is more significant than the teacher. Therefore, before each intervention, the teacher must first give guidance to the skillful student on things to conduct in the group. When students seem to be able to master the strategy, each student is given a specific role and responsibility in the group and to apply the strategy on the given reading material. Therefore, during the discussion, students in the CSR group seem to be more actively involved, more responsible, motivated, and enthusiastic in completing assignments compared to the RTS group. It is following the statement of Johnson and Johnson (Lederer, 2000) who argue that cooperative learning can improve a positive attachment, enable to have face-to-face interaction among students, personal responsibility, a specific social skill, self-evaluation as a group member or reflection. CSR increases children's motivation to read which influences their willingness and intention to continue trying to understand reading (Hwang, 2019). Since students with positive reading attitudes are likely to seek opportunities to read (Schiefele et al., 2012.), the resulting increased volume of experiences in reading can lead to improved reading comprehension (Duke et al., 2011). Boardman et al. (2016) found that in CSR, students discuss what they have read, assist each other in understanding the text, receive positive support from skillful students and other students as group member, has equal opportunity to experience each role namely leader, clunk expert, gist expert, announcer, encourage, and timekeeper.

Through this role trial alternatively, students are more motivated to be more involved in the discussion, and the learning process can run independently without the teacher's direct supervision as occurred in reciprocal teaching. Evident of the recent study support Soemer and Schiefele (2018) study that found essential reading improved student's reading comprehension.

This study supports previous studies (Bosanquet & Radford, 2019; Klingner et al., 2010) conducted a similar study on fourth-grade students who were proven to be able to improve their reading comprehension performance. In another study, Bryant et al. (2000) applied this method to the third-grade students of elementary school by peer-pairing learning method. The result showed that this method was able to improve reading comprehension skills. As previous studies conducted by Soemer and Schiefele, (2018), and Swart et al. (2017), the lack of facilities and low learning interest as often reported by teachers as issues in the learning process is actually can be solved by the learning process that involves peer-teaching, and skillful students stimulated to be able to interact and work together in completing the assignment.

The teacher no longer takes part as the center of the learning process, but instead as a facilitator who is ready to assist students according to their need (Gettinger & Seibert, 2002). Reading comprehension strategy treatment through CSR trains students to have a cognitive strategy as applying deep consideration, real effort, or strategy in time management when they find difficulty in understanding the text, where the students can correct or rearrange incomplete reading text components (Kendeou & van den Broek, 2007).

Through four strategies taught to students in the intervention, students are expected to be able to apply them during reading activity. So that they can be more actively understanding words and how those words are applied to construct meaning, be able to relate words with the situation (contextualizing), conduct analyzing, synthesizing, and evaluating words, expression, sentences during the reading process to achieve reading comprehension.

There are several limitations in carrying out research in real situations like this, one of which is technical problems related to the role of the teacher. Even though before the intervention was implemented, the researcher had asked for teachers' willingness to be actively involved in the implementation of the research and had conducted several briefings with teachers to discuss the role of teachers in the intervention process, but in the implementation, teacher involvement felt less than optimal, especially for teachers who accompanied reciprocal teaching strategies. Teachers often do not focus on providing explanations and guidance because they have to supervise other students who do not follow the intervention. To anticipate this, the researcher involved another teacher when the teacher was absent. Even though directions and training had been given before the intervention took place, the presence of a new teacher who was only provided with one training seemed to influence the learning process, because the teacher did not seem to

have fully mastered what had to be done during the intervention process, so that in its implementation the researcher still often helped to explain. This is different from teachers in collaborative groups who seem to really master the material that must be taught to students, so the learning process in collaborative groups looks more effective than in reciprocal groups.

This research was conducted in a public elementary school where the availability of classrooms is very limited. Although initially the implementation of the intervention was planned to be carried out in a computer classroom because it coincided with the national exam, the research was carried out in a multi-purpose classroom, used for meetings with parents and a dance room with half-open conditions, so that researchers could not control distractions and comfort of the classes that might disturb students' concentration. Apart from that, the limited time available due to national exams and other activities that could not be interrupted meant that this research could only be carried out in nine meetings, although Klingner et al. (2010) stated that this strategy could be applied every day for at least one week, but Researchers feel that nine meetings are still not enough to equip students to master existing strategies.

CONCLUSION

An important strength of the current study is controlling extraneous variable such as student's intelligence and age that influence the result of study which makes this research have credible results because both experiment and control group have low variability. On the other hand, the intervention program, which had follow-up measurements after the two-week intervention, provided data about further possible improvements in reading comprehension. Furthermore, the generalizability of the results might have been limited to students in third-grade elementary school. Further, it is suggested that future research conduct the intervention on other schools that are equivalent to the schools

studied to be able to measure students' abilities. Data collected by comparing the implementation of interventions in two or more schools, so that the results of this study can apply in other schools. For further research, the determination of expert students not only look from the side of intelligence and excellent understanding scores but from the side of activeness, the ability to lead, so they can play the role as desired, and they should give more intensive training. Other researchers could take samples from higher elevation levels to see if this method can be used for higher populations.

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