COOPERATIVE LEARNING IN FLIPPED CLASSROOM ON INDONESIAN EFL STUDENTS' READING PROFICIENCY: AN EXPERIMENTAL STUDY

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Abstract: Addressing the post-pandemic challenges in EFL classroom, teachers should empower their knowledge by exploring the potential methods to be applied in the classroom. Combining cooperative learning and flipped classroom can be a way for answering the challenges in post pandemic period. Some researchers have positively suggested about the integration of cooperative learning method in flipped classroom. However, the studies about the combination of these methods are still limited. Therefore, this research attempts to examine cooperative learning implication in flipped classroom effects for EFL students’ reading achievement during post-pandemic period. This study employs the quasi-experimental research. The experimental group is taught using the integration of cooperative learning into flipped classroom model, whereas, control group is taught using conventional instruction. The findings reveal that the students who learn in experimental group have better reading performance than those who learn in control group. The finding also presents that the integration of cooperative learning and flipped classroom have statistically significant effects towards reading proficiency. Thus, this study proposes an adaptive instructional model to enhance students’ English language communication and skills.

Keywords: cooperative learning, EFL, flipped classroom, reading.

integrasi pembelajaran kooperatif dan flipped classroom berpengaruh secara signifikan terhadap kecakapan membaca siswa. Dengan demikian, penelitian ini mengusulkan model pembelajaran adaptif untuk meningkatkan keterampilan dan komunikasi bahasa Inggris siswa.

**Kata Kunci:** pembelajaran kooperatif, Bahasa Inggris, flipped classroom, membaca.

I. INTRODUCTION

Studies regarding the teaching methods that focus on digital learning, especially in EFL context, is growing nowadays (Agustina, 2021; eLAC, 2022; Moorhouse, 2023; Rahmati et al., 2021). Several researchers have started to have the interest on the use of technology that is integrated with the traditional teaching and learning process to achieve the learning goal (Dziuban et al., 2018; Maximilian, 2016a; Nooriafshar, 2007).

It is a fact that the EFL learning success is affected not only by students’ cognitive factor, but also by other factors, e.g., teaching method used in classroom (Maximilian & Ajeng, 2023; Prastyo, 2017). Therefore, it is important to consider the way for having good instructional atmosphere for both teacher and student to support them for having valuable and memorable experiences during their study (Maximilian, 2020; Tran, 2019). In recent situation, post-pandemic period has presented challenges and opportunities for teacher to implement some approaches in the class. Addressing these challenges, teachers should empower their knowledge by exploring the potential and possible methods to be applied in classroom (Anas & Musdariah, 2018; Maximilian, 2016b). In today’s EFL context, post-pandemic period gives the strong impact both for teacher and students (Kamaruddin & Kaur, 2023). In this period, there is a transition from online to offline learning and hybrid learning. This transition, indirectly, forces both teacher and students to be ready to face the current changing situation (Divjak et al., 2022).

The use of an appropriate method may help the teacher and students in facing this transition period (Stoian et al., 2022). Teacher and students can work together in order to achieve the learning goal (Tran, 2019). Therefore, the learning process can run effectively and meaningfully. By applying an appropriate method, it is hoped that the teacher and student can handle and overcome the challenges during the post-pandemic period.

Taking a benefit of cooperative learning method might be an answer for the
challenges. Cooperative learning can be considered as a method of instruction that the small groups of students can have opportunity for learning collaboratively for optimizing their learning process by allowing them to have mutual goals (Johnson et al., 2013). It is effective for promoting better achievement, self-esteem, and interpersonal relationships as well as for developing students’ efforts in competitiveness (Johnson & Johnson, 1999). By implementing cooperative learning, the students can have benefits on face-to-face interaction, group processing social/interpersonal skills, positive interdependence, and individual accountability (Johnson & Johnson, 1999). These advantages become the power of cooperative learning and make it different from other learning methods (Erbil, 2020).

On the other hand, as the impact of pandemic regarding the massive use of technology, flipped classroom is also started to draw researchers and teachers’ attention in EFL classroom (Linling & Abdullah, 2023). Flipped classroom is a method that flips traditional learning method out of the class by the help of technology (Erbil, 2020). Flipped classroom is a pedagogical method which is created for managing time quality in English class by letting the students to learn and find a new knowledge outside the classroom (Divjak et al., 2022). The common media that is used in this method is online video (Erbil, 2020). This student-centred method allows students to have opportunity to be a truly active learner (Divjak et al., 2022). Further, Divjak et al. point out the key element of flipped classroom as encouraging students to use class time optimally in order to upgrade their competencies, to acquire new information, and to understand more about the materials (Divjak et al., 2022).

Moreover, Erbil also states that cooperative learning can be suitable to be implemented in the flipped classroom (Erbil, 2020). One of the reasons is because the conceptual foundation of both methods is student-centred method (Erbil, 2020). It means that cooperative learning is possible to be implemented in flipped classroom. Some researchers have positively suggested the integration of cooperative learning into flipped English classroom (Erbil, 2020; Linling & Abdullah, 2023).

It is obvious that the combination between cooperative learning and flipped classroom is expected to bring positive impact on students’ achievement during post-pandemic period. On the other hand, it is also realized that studies about the combination of these methods are still limited (Aslan, 2022; Foldnes, 2016). Studies on cooperative learning that is integrated in flipped classroom is still hard to be found (Aslan, 2022). Thus, it attempts
to exploring the integration cooperative learning into flipped classroom effects in EFL students’ reading achievement during post-pandemic period.

Based on the evidences that have been explained, the state of the art and novelty are presented as follows. Many researchers from various disciplines have conducted researches for understanding numerous impacts of the pandemic on instructional activities (Pokhrel & Chhetri, 2021), including in EFL learning context (Linling & Abdullah, 2023). One of the reasons is some researchers discover that the educational activities were being disturbed and interrupted due to pandemic (Schleicher, 2020). Therefore, some studies have tried to investigate how to find appropriate solutions in dealing with this problem (Aslan, 2022). In line with the phenomena, some researchers are interested to study whether the teaching method that can be used to solve the problem (Bawawa et al., 2021).

The changing of teaching and learning activities during pandemic period directs to the post-pandemic phenomenon in foreign language learning. It has changed to the future of language learning condition. Unfortunately, the study about the integration of cooperative learning into the scenario of flipped classroom is still limited (Aslan, 2022; Foldnes, 2016). Whereas, by looking at the characteristic of both methods, it seems that those methods can be implemented positively in dealing with post-pandemic problem on education field. On the contrary, studies regarding cooperative learning into flipped classroom effects that focuses in Indonesian EFL context have not reveal any research (Aslan, 2022; Bawawa et al., 2021). Most of the studies have been conducted outside Indonesia. In addition, most researchers only focus on the literature analysis in exploring the integration between these methods.

Considering this research gap, therefore, conducting this present research can provide the novelty to the knowledge. Since the focus of this research is on instructional effects on combining cooperative learning into flipped classroom in EFL students’ reading achievement during post-pandemic period, the results of this research are expected to provide the more comprehensive view and solution to overcome the issues in the post-pandemic period.

II. RESEARCH METHODS

The present study proves and explores the evidence on the cooperative learning effectiveness for flipped classroom scenario towards students’ reading skill in Indonesian EFL context. It
extends the investigation of the instructional model by integrating cooperative learning into flipped classroom in English reading class. Therefore, questions that guide this research are as follows: 1) Do students taught using cooperative learning in flipped classroom have better English reading performance than those taught using conventional method? 2) Does cooperative learning in flipped classroom significantly affect students’ reading proficiency?

For answering these research questions, this research employs experimental design. It is chosen for determining cause and effect relationship. Because of the ability in identifying caution, this experimental approach aims to represent the prototype of scientific method in order to solve. A quasi-experimental design is adopted in this present study, which utilizes existing intact classes. The primary data sources are reading tests. The results of reading tests scores are employed for measuring students’ reading skill condition. It employed pre-test and post-test two groups quasi experiment for understanding and comparing the interaction and effect between the students who have the integration of cooperative learning into flipped classroom and the students who have conventional instructional method.

This study was conducted in Indonesian EFL context, especially in the English reading class in STKIP PGRI Bandar Lampung. For having research data, the two classes in study program of English Language Education (ELE) at STKIP PGRI Bandar Lampung was taken as research sample. The treatments were done in two different classes, experimental and control class. These groups were taught using same teachers, learning or reading materials, as well as reading tests. The only difference was learning methods. Experimental group students learned using cooperative learning with the setting of flipped classroom, whereas, control group learned using conventional instructional method.

For answering this question, the researchers focused and analysed the data by examining the tests results coming from both groups, i.e., control and experiment. Another question focuses for finding out the cooperative learning inside flipped classroom effects for increasing reading achievement. Further, through this question, the significant effects of implementing cooperative learning and flipped classroom integration for increasing reading skill was investigated. To do so, this research employed t-test formula for proving the significant statistically difference on students’ English reading achievement. To examine the
in inferential statistics of this study, this research employed SPSS 22 for computing the statistical data.

III. RESULT AND DISCUSSION

Do students taught using cooperative learning in flipped classroom have better English reading performance than those taught using conventional method?

The reading performances of the students after having treatments become the focus in this first question. For answering this, research data was analyzed by examining tests result. For supporting the data, the students’ opinions and observation were also seen.

Regarding the quantitative data analysis, cooperative learning in flipped classroom was proven as an effective way to increase reading skill. This fact could be indicated by seeing the improvement in students’ mean scores after treatments. The difference of experimental group’s mean scores coming from pre-reading and post-reading tests was 8.32. Those were 62.72 for pre-reading test and 71.04 for post-reading test. The students’ mean score was seen as representative of students’ learning performance after treatments. Meanwhile, the gap of the mean score of the students who receive direct instruction was 1.96. Those were 57.16 for pre reading test and 59.12 for post reading test. From those descriptions, by seeing the gap of the students' mean scores which were 8.32 and 1.96, it could be implied that the students who have experiences with cooperative learning in flipped classroom have better performances in English reading skill than the students who learned using conventional instructional method.

Besides, problems that appeared inside the group of the students commonly happened because of the students’ background knowledge. It is believed that each student has different opinion. They want to answer the questions given by the teacher by using their knowledge. This situation could be seen as the positive and negative sides. Further, this situation could be seen as the positive effects of group work, in this case cooperative learning in flipped classroom, because by having various opinions, the students could have an opportunity in enriching their knowledge. Hence, they could also have many options in answering the questions. With the guidance of the teacher, this great opportunity would help the students to understand that various opinions would help them to empower their understanding of the materials. They would be helped by the others to understand the materials deeply with the help of their friends. On the other hand, teachers are asked to be sensitive to the situation of every group so
that, the argumentation that happened inside the group could be a positive way in getting the final decision on mastering the materials.

**Does cooperative learning in flipped classroom have statistically significant effect towards reading proficiency?**

Before computing the t-test, the normality and homogeneity tests have been counted. The data frequency distribution, symmetric bell curve, and result of Kolmogorov-Smirnov test \( p>0.05 \) proved that all kinds of data are in normal distribution. In addition, the result of Levene’s test (Sig. value >0.05) interprets that the variation of data is homogenous. Thus, it proved that the research data used for research are distributed normally and homogenously. It has already fulfilled the requirement for continuing the inferential statistic computation (independent t-test formula). Considering calculation result, the finding illustrates that the data were also homogenous. In other words, the variances for both the two classes were similar.

Further, table 1 presents mean score in experimental group students that was 62.72 and mean score in control group students was 57.16. Assumption of this condition had been explained in descriptive analysis by looking at pre-tests mean scores in both groups. By looking at the values of those mean scores, it could be indicated that the two classes were at the similar level before treatment. This condition was also supported by t-test result. Because the data was homogenous, \( t\)-value from the first line of the \( t\)-test table was considered for the comparison. The \( t\)-value is 1.939. The \( t\)-table is 2.011. This illustrated the condition of the class before any treatment. Both classes had difference in results before treatment (1.939 < 2.011). Since \( t\)-value was lower than \( t\)-table, it implies, before treatments, the significant difference in either group are not statistically proven. Therefore, by seeing the value of sig. which was higher than 0.05 (0.058 > 0.05), it could also be indicated the absence of statistically difference between both classes prior any treatment (pre-test). This finding proves that before treatment, both classes were somewhat similar in reading comprehension competence.

By consulting to the table 2, the average scores of students coming from both control and experimental groups differed. Those were 71.04 and 59.12. The mean difference was 11.92. From this calculation, it could be assumed that there was a huge difference in achievement between both groups after treatments. That was why the \( t\)-test computation was needed for proving whether any significant
difference between both groups can be proven or not.

The computation of Levene’s test illustrated that the data variation was homogenous (0.992 > 0.05). Since the data was homogenous, the first line of equal variance was chosen to see t value and p value \( (t = 3.967, \ p = 0.000) \). This finding showed the effectiveness of cooperative learning in flipped classroom integration for enhancing students’ reading performance by seeing \( t \)-test result \( (0.000) \) \( (p < 0.05) \) and \( 3.967 > 2.011 \) \( (t \ value > t \ table) \). In other words, it implies the existence of data significant differences. In general, this means that cooperative learning is effective in increasing students’ reading skill.

From the data analysis of the documentary sources of the students before treatment, it was known that the students had similar conditions related to their background study. They came from the same level of the same study program in one university. They were also taught by the same teachers and had the same learning environment, materials, time allocations of the lesson, and assignments. These findings become the factors that cause the \( t \)-test score. In addition to this, those factors have successfully explained the rejection of hypothesis alternative. Moreover, the impact on the experimental outcome that is influenced by several extraneous variables are also proven. This result becomes the basic consideration for the researcher to continue some treatments as well as to conduct a test to see how cooperative learning and flipped classroom integration affects the reading process.

After doing calculation on the post-reading test data, the result of \( t \)-test is \( 0.000 < 0.05 \) \( (p < 0.05) \). Moreover, \( t \ value \) score is higher than \( t \ table \) \( (3.967 > 2.011) \). By looking at the results of the calculation of the data, it implies that the data has a significant difference. This hypothesis testing implicitly explains that the significant difference of reading score between students who learned in cooperative learning and flipped classroom integration group, and students who learned in conventional instruction class are statistically proven.

Further, research data that have been taken from the questionnaires given to both classes were also support the \( t \)-test results in post-test. Most participants or students agrees that cooperative learning and flipped classroom integration could improve their reading skill. They think that through this model, they could improve their way in understanding the reading materials. They could have an opportunity to talk, to listen and to socialize with other. They could also have their time in understanding the materials and trying to speak to share their opinions. Not only that,
they also think that cooperative learning and flipped classroom integration brings challenges for them in solving problems while deciding the best conclusion to answer the questions. Though sometimes, they realize that argumentation could be there while having discussion. In contrast, some of them notice that having argumentation could be positive for them. They could increase their social relation and also enrich their knowledge. In other words, indirectly, their bound is strengthened. Kagan’s statement about the theory of cooperative learning could explain students’ opinion regarding cooperative learning and flipped classroom integration model (Kagan & Kagan, 2009). He states that a good class means a little bit of noise in order to learn something, preparing students with awareness in helping each other, having a chance for every student to look at what others did to enrich their knowledge, and letting the students verbalize what they think to learn (Kagan & Kagan, 2009). They could help each other to improve their English skills, especially in reading and also reach the goal of the study. Therefore, in this present study, the theories that guide cooperative learning by Johnson and Johnson are proven as an effective way.

The focus of social interdependence theory is the learner’s achievement. It says that others’ learner success will give effect to the learner’s success (Wachyunni 29). Most of the students increase their reading scores. Their experimental group means score before treatment was 62.72. Meanwhile, the students' mean score after treatment was 71.04. The difference increment of post-reading test scores is also found. It is 8.32 points. It assumes their success on achievement. Not only that, their success in building their social interaction has been proven. Some of the students enjoy learning through cooperative learning because this method gives chance to students for sharing and changing ideas, as well as to learn together with friends. In other words, cooperative learning method could facilitate them to work both in a team and also in alone independently.

Moreover, the cognitive-developmental has also been proven. Theory cooperative learning activities gives a chance to students to build up their knowledge, this means that the cognitive process is happening (Johnson & Johnson, 1999). “When students debate and cross-examine one another's thoughts and perspectives, they gain knowledge more effectively. They can hone their viewpoint as circumstance results. A statement that comes from one of the students pictured his awareness of the positive effect of cooperative learning. Developing one’s perspective could be interpreted as
developing one’s knowledge. Here, in this context when students develop their knowledge, the cognitive process can be happening. Moreover, the students’ achievements also become the proof of cognitive process. The improvement of the mean score identifies that the cognitive process has existed.

The third theory that is proven in this present study is behavioral learning theory. According to this idea, the extrinsic motivation for reward also strengthens cooperative efforts (Johnson & Johnson, 1999). According to them, a reward can be in form of acceptance, reinforcement, and support of the group and also have a good relationship with other members of the group. The comment coming from some students could reflect the feeling of pleasure in having the benefit of group work. One of the students said, “I like participating in group work activities for improving English as I can discuss topics alongside my classmates while learning as a group. I can also get better at reading English”. This statement reflects a good relationship built by the students. In this occasion, they could support each other in finishing their task by filtering various ideas which came from each member. Hence, they could get the best answer. In addition to this, they also have a chance to learn deeper by listening to the others’ explanations so that they could improve their English reading skill.

Moreover, the students’ final scores in reading also become a valuable reward for them after doing a lot of group work activities in appreciate literature class. Thus, the behavioral theory by Johnson and Johnson (188) that explains about the presumption that extrinsic incentive strengthens cooperative efforts in order to receive reward could be proven in this present study.

As a result, the positive views of the students support the result of the data. Three theories that are guiding cooperative learning and flipped classroom integration model such as intellectual development, interpersonal relationships, and behavioural development theories by Johnson & Johnson (1999) are proven by seeing those results. Thus, cooperative learning in flipped classroom is effective in increasing students’ reading skill. Meanwhile, the t-test result indicates that cooperative learning in flipped classroom integration affects reading skill improvement significantly.

The findings of quantitative data analysis have also supported by using qualitative data analysis. From qualitative data analysis, it was discovered that participants perceived that cooperative learning and flipped classroom integration is effective in improving the students’
reading competence. Qualitative data was taken from the students’ opinions about cooperative learning and flipped classroom integration. 96% of participants agreed and strongly agreed that the group work could be helpful in increasing their English skills, especially in reading. They enjoyed learning English through group work activities. “I support group projects since they can help us read and write in English more fluently” (participant). Commonly, the feeling of enjoyment comes from one’s motivation. While enjoying activities, indirectly their motivation and willingness to learn are improving. The feeling of enjoyment can bring students to empower their knowledge to learn something. That is the reason for their belief that cooperative learning and flipped classroom integration could improve their English reading skill.

IV. CONCLUSION

This study proves and reveals the implementation of cooperative learning into flipped classroom integration to support the improvement on English reading performances, as well as its effects towards students’ English reading proficiency. Cooperative learning in flipped classroom was proven as an effective way to increase reading skill. This fact could be indicated by seeing the improvement in students’ mean scores after treatments. In addition, significant reading score difference between students taught using cooperative learning and flipped classroom integration and those taught using conventional instructional model is statistically found. Research findings also confirm that cooperative learning theories (intellectual development, interpersonal relationships, and behavioural development) have been shown to be a successful method of teaching English. These positive effects might impact the students’ social skills, students’ personalities, students’ learning achievement, and students’ motivation.

To conclude, cooperative learning and flipped classroom integration is proven as an applicable and efficient way to enhancing the students’ English skill, especially English reading skill. Thus, it is suggested for the English teachers to implement and take a benefit of cooperative learning into flipped classroom integration in their English classes. Moreover, it is also suggested for further researcher to conduct deeper and comprehensive study regarding cooperative learning and flipped classroom model for improving English language and communication skills.
**Table 1. Independent sample test result on pre-test scores**

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental class</td>
<td>25</td>
<td>62.72</td>
<td>8.364</td>
<td>1.673</td>
</tr>
<tr>
<td>Control class</td>
<td>25</td>
<td>57.16</td>
<td>11.643</td>
<td>2.329</td>
</tr>
</tbody>
</table>

**Table 2. Independent sample test result on post-test scores**

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental class</td>
<td>25</td>
<td>71.04</td>
<td>10.398</td>
<td>2.080</td>
</tr>
<tr>
<td>Control class</td>
<td>25</td>
<td>59.12</td>
<td>10.845</td>
<td>2.169</td>
</tr>
</tbody>
</table>

**Table 3. Independent Sample Test for Pre-Test**

<table>
<thead>
<tr>
<th>Scores pre-reading test</th>
<th>Levene's Test for Equality of Variances</th>
<th>t-test for Equality of Means</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>Sig.</td>
</tr>
<tr>
<td>Equal variances assumed</td>
<td>3.092</td>
<td>.085</td>
</tr>
<tr>
<td>Equal variances not assumed</td>
<td>1.939</td>
<td>43.562</td>
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**Table 4. Independent Sample Test for Post-Test**
<table>
<thead>
<tr>
<th>Scores of post reading</th>
<th>Levene's Test for Equality of Variances</th>
<th>t-test for Equality of Means</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equal variances assumed</td>
<td>F: 0.000, Sig.: 0.992</td>
<td>T: 3.967, Df: 48, Sig.: 0.000, Mean Difference: 11.920, Std. Error Difference: 3.005</td>
</tr>
<tr>
<td>Equal variances not assumed</td>
<td>F: 0.000, Sig.: 0.992</td>
<td>T: 3.967, Df: 47.915, Sig.: 0.000, Mean Difference: 11.920, Std. Error Difference: 3.005</td>
</tr>
</tbody>
</table>

**REFERENCES**


