Flipped classroom with collaborative learning approach in enhancing writing skills of Indonesian university students

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Article Info

ABSTRACT

The intention of this study was to examine how a flipped classroom with a collaborative learning approach improved the writing skills of Indonesian higher education students. To achieve the study's aim of 48 Indonesian higher education participants, the Oxford Quick Placement Test (OQPT) was employed. They were divided into two groups: experiment and control. Following that, as a pre-test, both groups were given a written exam. The experimental class (EC) was then positioned in a flipped classroom. Students were permitted to bring smartphones to class and utilize them while learning, and the flipped classroom was equipped with an internet connection, a laptop, and a projector. The control class (CC) got standard classroom instruction. This strategy was employed until the very last session. The experimental group outperformed the control group on the post-test, according to the results of the independent samples t-test and one-way analysis of covariance (ANCOVA). Furthermore, the results revealed a significant difference in post-test performance between the EC and CC.
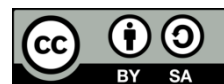
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1. INTRODUCTION

Active and collaborative learning are two more recent ideas derived from the core of experience learning [1]–[3]. Active learning involves students actively or existentially engaged in the learning process, in contrast to the typical lecture when students passively absorb knowledge from the lecturer. Student participation and involvement in the learning process are the core components of active learning. In other words, active learning necessitates that students engage in worthwhile learning activities and reflect on those experiences. Researchers found that children learn most effectively when they are engaged in tangible events [4], [5]. Piaget's theory of active learning, which informs the idea of collaborative learning, emphasizes that learning happens when students apply and act upon new ideas and concepts [6].

A definition of collaborative learning is a teaching strategy in which students cooperate in groups to achieve a common academic goal [7]. Collaborative learning's fundamental notion is focused on group members working together to reach a consensus [8]. Further definitions of online collaborative learning include learning processes when two or more individuals collaborate online to generate meaning, investigate a subject, or develop skills [9], [10]. Real-time collaboration is now a possibility due to the information technology revolution. Students participate in this style of learning by cooperating on a team project. Using the information-technology resources available in a flipped classroom, this method demands students to understand important ideas, terminology, and procedures. They must use what they have learned in a practical setting in

the following phase. To accomplish the learning activities throughout the collaborative process, students must divide the work and work together. Working together on a group project fosters social connection, collaboration, and cultural variety among students [9], [11], [12]. It also allows them to apply what they have learned and develops their analytical and judgment skills [13], [14]. These talks imply four theories of learning are interrelated to provide theoretical and practical views, as seen in Figure 1.
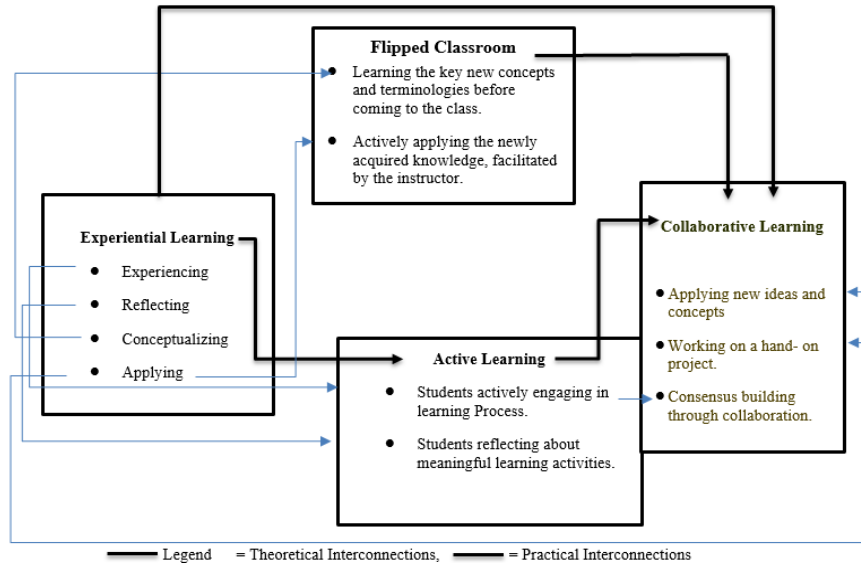

Figure 1. Interconnectedness of the flipped classroom and experiential, active and collaborative learning

Flipped classrooms are thought to be extremely beneficial for both teaching and learning. Researchers found that the flipped classroom had positive effects on learning. These benefits include: i) both students and instructors have good opinions of the vigorous learning atmosphere [15], [16]; ii) higher class involvement [17]–[20]; and iii) improved performance on formative and summative assessments [21]. For example, when flipped instruction is utilized in combination with digital tools: In a comparison of two demographically dissimilar groups' perspectives. The vast majority of students indicated that the method positively affected their ability to comprehend the material [22], [23].

Lately, advancements in educational technology have made flipped classes increasingly adoptable in higher education settings [24], [25]. Students are expected to arrive to class having already absorbed the material needed to actively participate in problem-solving activities with their peers, creating a student-centered atmosphere [26]–[28]. They play an active role at the center of learning throughout the instructional cycle. The technique is predicated on the notions that meaningful peer contact promotes knowledge growth and the lecturer can give more immediate and tailored assistance and feedback during in-class activities [29]–[31]. This study, in particular, seeks to assess the effects of flipped classrooms on the writing skills of Indonesian higher education students. This subject is important for pupils since it might improve their collaboration. Flipped classrooms provide students the opportunity to learn additional knowledge through team activities and discussions. This enables students to share knowledge and discover new ideas from one another under the direction of their lecturers [3], [32], [33].

2. RESEARCH METHOD

2.1. Participant

The population used in this study was obtained from second-year students majoring in English Education Department, Universitas Islam Negeri Sultan Maulana Hasanuddin Banten, Indonesia which there were three classes, each class consisting of 24-25 students and then screened using a placement test. The sampling technique for this study used cluster random sampling [34]. The researchers applied a placement test to more homogenized participants from the population and to determine the language level of students before any treatments. 48 pupils were chosen as a sample, because just 48 people achieved the intermediate level. The ages of the participants varied from 19 to 22. The Oxford Quick Placement Test (OQPT) scores were used to measure their English language competency. The students were randomized into two groups: a control class (CC) or traditional classroom and an experimental class (EC) or flipped classroom.

2.2. Instruments

The first instrument used in this study to standardize the participants was the OQPT. This helps the researcher to have a greater understanding of what level (i.e., elementary, pre-intermediate, intermediate). According to this test, a student's score is between 41 and 51 (out of 60) which is considered the upper-intermediate learners.

The writing pre-test created by the researcher is the second and most important instrument for collecting the data needed to answer the research questions. It was based on the students' course book. It addressed four topics, and students were given the assignment of writing on one of them at random. The researchers instructed the participants to compose a piece on a certain topic. Participants must write at least 200 words. After writing on the topic, all of the essays were collected and scored using the same criteria by two English lecturers. When evaluating the students' writing qualities, the raters took into account grammatical precision, sentence meaning, and the length of each essay. Two English experts validated the correctness of the pre-test, and its reliability was assessed using Pearson correlation analysis, yielding a result of 0.989.

Then, a writing post-test created by the researcher. The post-test was based on the themes that were presented to the groups. On the post-test, students were obliged to write on one of the two subjects. Two raters graded the students' writings. Participants were given a post-test to see how much their writing has improved as a result of the treatment. It should be noted that the inter-rater reliability was also determined using Pearson correlation analysis for the post-reliability test, and it was 0.868. Two English experts evaluated the post-validity test.

2.3. Data collection procedure

The OQPT was administered to 74 students at the English Department of Universitas Islam Negeri Sultan Maulana Hasanuddin Banten in order to assess their level of English proficiency for the objectives of the study. 48 intermediate students were randomly allocated to one of two equal EC (flipped classroom) and one CC for the study (traditional classroom). After that, both groups were trained and tested. The participants in the experimental group were then put in a flipped classroom by the researcher. Participants in the flipped classroom were permitted to bring and use their smartphones while studying. The flipped classroom had Internet access, a computer, and a projector. Six themes from interchange two were assigned to pupils in the flipped classroom. Each subject was distributed to the students through WhatsApp. The topic of the lesson had to be discussed in class. Throughout the lesson, the lecturer used the questions, quizzes, or other methods to gain information from the students. In contrast, the control group was educated in a regular classroom environment. The Internet was not allowed in the traditional classroom, and students learned within rather than outside of it. Students get the opportunity to discuss their ideas, inspire new ones, and express themselves. The process is repeated until the last session. Both groups completed the post-test in writing during the final session after treatment.

2.4. Data analysis procedure

The first step was to utilize the Kolmogorov-Smirnov (K-S) test to determine if the data collected was normal. Then, using SPSS software version 25, the descriptive statistics were computed. In order to compare the effects of flipped and regular classrooms on the writing skills of Indonesian higher education learners, paired and independent samples t-tests were conducted.

3.   RESULTS AND DISCUSSION

3.1. Results

As previously indicated, 48 intermediate or advanced students were chosen from a wider group of EFL students and separated into two groups based on their placement exam scores, EC and CC. To establish the homogeneity of the two groups' writing abilities before to treatment, an independent-samples t-test was performed to compare the pretest findings of the two groups. To determine the significance of the difference between the mean pretest scores for EC students and CC students, researchers need to examine the p-value in the "Sig. (2-tailed)" column of the t-test results provided in Table 1. In statistical analysis, p-value less than 0.05 indicates a statistically significant difference between the two groups, suggesting that the observed variation in pretest scores is unlikely to have occurred by chance. Conversely, a p-value higher than 0.05 suggests a non-statistically significant difference, implying that the observed variation could plausibly occur due to random fluctuations.

Table 1. The pre-test descriptive statistics

	Groups	N	Mean	Std. deviation	Std. error mean
Pretest	EC	24	13.8125	1.10151	0.22484
	CC	24	14.2708	1.53919	0.31419

There was no statistically significant difference between the EC and CC pretest scores (M=13.8125 and SD=1.10151 and t (46)=-1.186 and p=0.242, respectively) according to the data in Table 2 (two-tailed). This result was reached because the p value was greater than the significance level (p>0.05). As a result, the learners in the two groups were presumed to be at the same pretest level. The posttest findings of the EC and CC students were to be compared since the study's research question sought to establish if flipped classroom instruction (FCI) had any detectable influence on the writing skills of Indonesian higher education learners. To achieve this purpose, the researcher might utilize an independent-samples t-test, however one-way analysis of covariance (ANCOVA) was used in order to account for any potential pre-existing differences between these two groups and compare their post-test findings accordingly. Table 3 demonstrates that the post-test mean score for EG students (M=16.3125) was greater than the post-test mean score for CG students (M=14.6250). To assess whether or not this difference was statistically significant, the researcher required to examine Table 4 'Sig.' column and groups row.

The alpha level of significance should be compared to the p-value in Table 4. To obtain the p-value, locate the row with the label "groups" in the leftmost column and read through it (i.e., 0.05). The writing post-test revealed a statistically significant difference between the two groups, EC (M=16.3125) and CC (M=14.6250), since the p-value in this instance was less than the alpha level of significance (0.05). It implies that flipped learning might greatly enhance the writing understanding of EG students. The impact size value is also included in Table 4 and is displayed in the Partial Beta Squared column that appears before the group's column.

Table 2. Results of independent-samples t-test comparing the pretest scores of EC and CC

| | | Levene's test for equality of variances | | t-test for equality of means | | |
		F	Sig.	T	df	Sig. (2-tailed)
Pretest	Equal variances assumed	0.662	0.420	-1.186	46	0.242
	Equal variances not assumed			-1.186	41.663	0.242

Table 3. Descriptive statistics for comparing the post-test scores of the EG and CG learner

Groups	Mean	Std. deviation	N
EC	16.3125	0.86994	24
CC	14.6250	1.24455	24
Total	15.4688	1.36213	48

Table 4. Results of one-way ANCOVA for comparing the post-test scores of the EC and CC learners

| Dependent variable: posttest | | | | | | |
Source	Type III sum of squares	df	Mean square	F	Sig.	Partial beta squared
Corrected model	45.906[a]	2	22.953	25.011	0.000	0.526
Intercept	42.848	1	42.848	46.690	0.000	0.509
Pretest	11.734	1	11.734	12.786	0.242	0.000
Groups	40.303	1	40.303	43.916	0.000	0.494
Error	41.297	45	0.918			
Total	11572.750	48				
Corrected total	87.203	47				

a. R squared=0.526 (adjusted R squared =0.505)

3.2. Discussion

The objective of this research is to provide answers to the following questions: Could flipped classroom have a great influence on Indonesian higher education students' writing pedagogy and creativity? The following null hypothesis was created and investigated after that: the writing skills of Indonesian higher education students significantly impacted by FCI. Since the data indicated that adopting FCI resulted in a significant difference between writing skill scores on the post-test, the study's premise is accepted.

The use of flipping may be responsible for this improvement in the EC writing. The EC also shown improved writing abilities in terms of ideas and substance, organization, style, and language. This suggested that teaching strategies such as flipping can help students' writing abilities. The findings of this study are significant because they will help university English lecturers figure out ways to help students develop writing abilities that they will need in the future, as just 22% of undergraduate university students compose at or above the competent level. This would suggest that educators should utilize every tool at their disposal to cultivate this talent. Since flipping is a tool that is accessible, instructors can make advantage of it to assist students to develop writing abilities that will aid them when they apply for jobs.

The effectiveness of flipped learning on students' writing skills is favorable. Instead of being linear and didactic, flipped learning can provide the students the chance to learn in a more personalized way [35]–[37]. When they felt it was essential, students valued having the freedom to review the substance of their essays and writing assignments as long as it was done before the following class period. There was always a tiny percentage of students who did not finish the required outside content, despite the fact that the majority did so on a regular basis. The study's findings are also in line with constructive learning theories. Inductive learning tactics were used by students in the EC to develop their writing abilities in contrast to Chomsky's oversimplified view of language learning as an unconscious process. They learned by carefully examining crucial ideas at their own speed in a personalized environment, like their homes. By intentionally employing the skills they had been taught, students therefore increased their ability in writing in English. Additionally, the study's results demonstrate that input-based education and form-focused training both have an influence on students' writing success [1], [38], [39]. The input-based instruction was heavily emphasized by students in the experimental group, which enabled them to become mindful of the linguistic elements.

In terms of student involvement, students in the qualitative surveys had the most favorable perceptions of flipped learning, particularly when addressing how class time was allocated. Students said that adopting in-class exercises that engaged higher-order thinking assisted them in producing various types of essays and completing their writing tasks. Additionally, the atmosphere allowed students to spend more time at higher Bloom's taxonomy levels [40]. Students are much more involved with their writing assignments, and the perceived quality of learning is improved, since they have more time to work through their issues and express themselves at their own leisure. A flipped learning environment obviously prepares students for writing employment environments as well.

Students' comfort with their learning style may be attributed in large part to informed learning. What provides students confidence in their learning outside of the classroom is how they finish written tasks, comprehend them, and learn from the meaningful ways. Every flipped learning environment that was assessed for this evaluation was built around this concept. The study's findings support learner autonomy. Flipped learning promotes more active learning, which gives students more power. Rather of having the lecturer's interpretation of the information provided simply during class time, while students passively took notes and occasionally raised problems, students were given greater responsibility for front-loading their writing content. Students can investigate the material outside of class and then synthesize it at their own time. According to the general definition of active learning, it involves students actively participating in educational activities, taking responsibility for their learning, and taking ownership of it. Although some students find it difficult to adjust to this more active role, it is apparent that they enjoy it, especially given the number of students who prefer a flipped environment to a traditional one.

The FCI and the associated class activities were thoughtfully created to aid learners in rationally organizing and expressing their thoughts in an engaging manner. In the task-based activities, they had plenty of chances to assess the material, concentrate on the outcome, and write actively. As a result, when the teaching method was changed to include clearly defined writing knowledge, students' understanding of good writing techniques increased. The FCI method gives students extra time in class to write, encourages them to apply what they have learned, and provides suggestions and fast feedback from the lecturer [12], [33], [40]. It also enables individuals to generate writing that has improved content, organization, cohesiveness, sentence structure, and lexical standards as they accomplish their customized assignments. According to information acquired from questionnaires administered, a sizable majority of students claimed that the FCI made them feel more motivated and independent. Being more self-assured in their abilities and talents is the best approach for children to show their learner autonomy.

4. CONCLUSION

The flipped classroom with collaborative approach is a helpful method for improving writing abilities in English students. This study found that only 22% of students can write proficiently, indicating that university English lecturers can use this information to help students develop future writing skills. The flipped classroom approach involves inductive learning tactics, higher-order thinking exercises, and active learning, allowing students to take written assignments and learn meaningfully. This method provides more time in class for writing, practice, and immediate feedback from instructors, leading to better content, organization, cohesion, sentence structure, and lexical conventions.

In this research also there are certain limitations that are experienced during the research process, and there may be a few things that future researchers could focus on more in order to further improve their study. Some limitations in this study include the small number of sample sizes, only 48 samples, perhaps this is still insufficient to describe the situation. However, the research limitations on the sample size are beyond the control of the researchers. The situation in the field shows that in second year students only have three classes, each class consisting of 24-25 students then filtered through using a placement test, with just 48 students

receiving an intermediate level score in the process. In order to obtain broader information, it is hoped that future researchers can measure it with more samples and wider clusters.

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