

Brainstorming Combined With Project-Based Learning as an Effective Learning Strategy in Writing Classrooms

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Abstract—Innovative teaching strategies are required to be implemented in teaching writing to enhance students' writing skills. This study aims at investigating the effectiveness of brainstorming combined with project-based learning implemented in writing classrooms. This study employed a descriptive research design. Several data collection methods were conducted to gather the data, such as classroom observations, semi-structured interviews with the selected university lecturers, questionnaires and document study of the mid-semester and final semester scores. This study found that brainstorming combined with project-based learning is an effective learning strategy for improving students' writing skills. Moreover, brainstorming combined with project-based learning promotes students' active participation in writing classes. This study implies that brainstorming combined with project-based learning should be implemented more intensively in the classroom to develop students' learning competence.

Index Terms—brainstorming, project-based learning, writing, skills

I. INTRODUCTION

Writing is one of the four English skills used to convey ideas, opinions, thoughts and feelings in written form. It is a productive language skill which is very important for students to learn because it helps them to be successful academically. Therefore, students' writing skills should be continually developed in writing classrooms by utilizing various teaching strategies (Widiastuti et al., 2022). Innovative and creative learning strategies should be implemented in teaching writing to engage students in learning and ensure that students' writing competence develops continually (Denham, 2020). Developing students' writing skills becomes essential for teachers in language teaching because having good writing skills is very important for the students to communicate in written forms. By writing, students can communicate and express their ideas, thoughts and feeling to others (Aghajani & Adloo, 2018).

Writing is a complex language skill which requires students to practice continuously to master all components of writing (Kadek & Lastari, 2018). In other words, writing skills cannot be mastered without regular and continuous practice (Mantra, 2017). To be able to write appropriately, students must have a good mastery of various linguistic elements (Mantra & Widiastuti, 2019). Moreover, in writing, students should be able to express their ideas, opinions and feelings to other people appropriately in written forms. Consequently, students must have a good vocabulary, grammar, spelling and language usage abilities. Therefore, students should have good knowledge of various linguistics features to express their ideas adequately (Motallebzadeh et al., 2018). It indicates that communicating in written forms requires compressive linguistics knowledge concerning micro and micro writing skills (Mantra et al., 2021). These may cause students to be reluctant to write because they need to know various linguistics skills, and also they have to know what to write (Adas & Bakir, 2013). Moreover, students should have the imagination or creativity to think while writing to make reading enjoyable (Nurlaila, 2013).

Providing a good learning atmosphere for the students to practice their writing skills in the classroom is essential to develop students' writing skills (Saud et al., 2014). Teachers must implement appropriate learning strategies to create conducive learning conditions. Teaching strategies become keys to a successful writing classroom. Teachers should facilitate students with various learning activities to provide opportunities for the students to practice their writing skills (Sun & Feng, 2009). Students may also engage more intensively in learning activities when the teachers use appropriate

and innovative learning strategies. Therefore, it is undeniable that the appropriate implementation of a learning strategy plays an essential role in learning success (Handayani & Widiastuti, 2019). Moreover, students learning motivation can be improved if the techniques are appropriate for the learning condition (Cahyani et al., 2018).

Additionally, when appropriate learning strategies are implemented, the learning objectives can be easily obtained, and the student's learning achievement can be improved continually. Teachers need to be able to innovate learning strategies to suit the student's needs. In writing classes, teachers may also combine the learning strategies and select the most appropriate learning strategy to improve students' writing skills (Schillings et al., 2018; Tyas, 2020).

Several learning strategies can be implemented in writing classes, for example, brainstorming and project-based learning. Brainstorming is a strategy which enables students to work in a group to discuss and share their writing problems with other students (Rahmawati, 2022). In the brainstorming strategy, students can contribute ideas, suggestions, opinions, thoughts, and information obtained from each group member. Each member is free to respond, criticise or add. Meanwhile, in the brainstorming method, all thoughts can be accommodated by the group leader and then used as the main idea and developed into a complete conclusion (Astu Bhairawa et al., 2020).

Brainstorming is designed to encourage groups to express various ideas and judgments between individuals in a group. Everyone expressed an idea to record and then put it together with various other ideas. Moreover, brainstorming can be combined with project-based learning (Kaufua et al., 2021). Project-based learning can develop students' creativity in developing their writing skills. Projects can be exciting and challenging for students (Insani et al., 2018). Teachers nowadays are encouraged to provide students to carry out projects to develop students' ability to do valuable things for their life skills. Therefore, to solve students' problems in writing, brainstorming and project-based learning are implemented in the writing classroom (Alberto, 2018).

Previous studies have been conducted related to writing skills and brainstorming techniques. Rahmawati (2022) conducted a study concerning the effect of the brainstorming technique as a pre-writing activity on the student's achievement in writing. It was found that the brainstorming technique facilitates the students to improve their ability in writing skills. Kaufua et al. (2021) conducted a study concerning the implementation of brainstorming to improve students' writing. It was found that the brainstorming technique is effective for learning to write a descriptive text. Furthermore, a study by Villalba (2022) found that project-based learning effectively improves students' English.

Similarly, this study investigated the use of brainstorming. However, this study focused on investigating the effectiveness of brainstorming combined with project-based learning used by university lecturers in improving their students' writing skills.

II. RESEARCH METHOD

This study employed a descriptive research design to investigate the effectiveness of the brainstorming strategy combined with project-based learning. A descriptive research method is a purposive process of gathering, analysing, classifying, and tabulating data about prevailing conditions, practices, processes, and trends and then making adequate and accurate interpretations of the data results (Gatbonton, 2008). This study was conducted in English education study programs, and four classes of fourth-semester students were thoroughly investigated. The data were collected through semi-structured interviews, classroom observation, and document studies of the student's writing scores in the pre-and mid-semester and final term tests. Additionally, a questionnaire was administered to collect data concerning the students' changes in behaviour in learning writing skills through brainstorming combined with project-based learning.

The data were descriptively analysed to establish the findings of the study. All data were first put in the correct categories and triangulated with other data to ensure their validity and reliability. The findings were then presented argumentatively to provide a clear horizon to the readers concerning the effectiveness of brainstorming combined with project-based learning in enhancing students' writing skills.

III. RESULTS AND DISCUSSION

The results related to integrating brainstorming and project-based learning used by the teachers to enhance students' writing skills were presented below and the results were then discussed briefly.

A. Results

In the present study, the researchers interviewed English lecturers teaching the writing subject. The interview excerpts with the lecturers who currently teach the writing subjects could be presented as follows.

"My students' writing ability was still very low. They had a lot of problems developing their ideas in writing. Perhaps, it is because they could not explore what to write. My students found difficulty in using appropriate vocabulary and grammar. I use brainstorming and then assigned them to write texts through projects. This way of learning made my students became active in learning writing" (Lecturer A).

"When I taught writing skills, I told my students the topics of the writing exercises. Then asked them to write descriptive text, recount text, narrative, or other forms of writing. They took a long time to write the text. They are often stuck in the first paragraph. Therefore, to make them active, I brainstormed with them and then gave them projects to do. They have to write a report and present the report in the classroom" (Lecturer B).

“My students often get bored and reluctant to write the text properly, and when they are asked to submit their assignment, they are busy finding similar text on google. To break this habit, I used brainstorming combined with project-based learning. After implementing the strategies, my students are active in doing writing projects” (Lecturer C).

“Well, my students have difficulty in developing ideas, using suitable vocabulary, and constructing sentences into correct text. When I implemented the brainstorming combined with project-based learning, my students engaged themselves more intensively in writing classes because they have to be responsible with their assignment and they have to be ready to present their report in the classroom” (Lecturer D).

Furthermore, at the beginning of this study, several classroom observations were conducted in writing classes to see the implementation of brainstorming combined with project-based learning. Lectures taught in classes A, B, C and D were observed intensively. The summary of the observation can be presented as the following.

TABLE 1
SUMMARY OF CLASSROOM OBSERVATION

Class	Learning Topics	Learning Method	Description of Quality Implementation
Class A	Education in the 21 st Century	brainstorming combined with project-based learning	Pre activity started with brainstorming. Students were then assigned to the project. The projects were done during the main activity, followed by submitting the report in writing. The students carried out classroom presentation
Class B	Current issues in education	brainstorming combined with project-based learning	After opening the class, the lecturer brainstormed with the students and then provided projects to be done by the students. The report in the form of writing was submitted to the lecturer; the presentations were carried out.
Class C	Education and technology	brainstorming combined with project-based learning	The lecturer brainstormed with the students with various questions to browse students' understanding of the topic, and then projects were given to be presented in the main activity. After students submitted the report, presentation activities were started.
Class D	Online learning development	brainstorming combined with project-based learning	The lecturer intensively brainstormed with the students in the pre-activity stage and then continued with projects. The presentations were carried out after all reports were submitted to the lecturer.

Document studies were conducted to confirm the results of the interviews with the lecturers. The students' writing achievements were investigated by checking the mean score of the mid-semester and the final-semester tests. The data can be presented as the following.

TABLE 2
THE MEAN SCORE OF THE MID-SEMESTER AND FINAL SEMESTER TESTS IN WRITING AFTER THE IMPLEMENTATION OF THE BRAINSTORMING STRATEGY COMBINED WITH PROJECT-BASED LEARNING

Class	Pre-Semester Test	Mid Semester Test	Final Semester Test	Differences Between Mid-Semester and Final Semester Tests
Class A	45	68	82	14
Class B	40	73	85	12
Class C	42	67	84	17
Class D	46	72	88	16
Grand Mean Score	43.25	70.00	84.75	14.75

To collect the supporting data, the researcher also administered a questionnaire at the end of the fourth semester consisting of 120 students. The questionnaire data were used to determine the subjects' responses to brainstorming combined with project-based learning. The responses to the questionnaire were presented in five choices: Strongly Agree (SA), Agree (A), Undecided (U), Disagree (D), and Strongly Disagree (SD). The data showing the subjects' total responses can be tabulated in the following table.

TABLE 3
THE DATA SHOWING THE SUBJECTS' TOTAL RESPONSES TO THE QUESTIONNAIRE

Qualification	Respondent	Percentage
Strongly agree	70	58.33%
Agree	35	29.17%
Undecided	10	8.33%
Disagree	5	4.17%
Strongly disagree	0	0%
TOTAL	120	100%

The questionnaire results showed that the students enjoyed learning writing skills through brainstorming and project-based learning. The tables above showed significant changes in students' learning behaviour when learning writing skills through brainstorming combined with project-based learning. The questionnaire also showed that 58.33% of the students strongly agreed, 29.17% agreed, 8.33% were undecided, 4.17% disagreed, and none of the subjects stated firmly disagreed.

B. Discussion

The interview results showed that the student's writing ability was still low compared to the passing grade indicator suggested by the university curriculum. This low ability was caused by a need for students' motivation to participate in the learning activities. Therefore, innovative learning strategies must be implemented to develop students' motivation in a writing classroom. The interview indicated that the students had a crucial problem with writing. They could have been higher in content, vocabulary, grammar, and organization. They needed help to develop their ideas about a topic and to express them using appropriate vocabulary and correct grammar. Furthermore, the lecturers using the conventional teaching strategy demotivated students to learn writing. Therefore, it needs to implement innovative learning strategies to develop students' active participation in learning writing.

Based on the interviews, brainstorming combined with project-based learning could help students learn writing skills because they have to engage in brainstorming activities, participate in several projects, and present their reports in the classroom. The effectiveness of brainstorming combined with project-based learning can also be found based on the result of mid-semester tests and final tests. The mean score of both mid-semester and final tests was sufficiently high compared with the passing grade of writing subjects indicated by the university curriculum. Moreover, the differences between the mean score of the mid-test and final tests were relatively high, indicating that the lecturers' learning activities after the mid-tests effectively improved students' writing skills.

Based on the results of students' scores in mid-semester and final semester tests, it found that students' ability in writing is higher than in the pre-semester test. This finding clearly showed that students' skills in writing have improved after the implementation of brainstorming combined with project-based learning. The grand mean score showed that the pre-semester test was 43.25, the mid-semester test was 70.00, and the final semester test was 84.75. The grand mean score of all classes vividly indicated a high increase in the students' writing skills after brainstorming combined with project-based learning was implemented in the writing classes. The findings confirmed that brainstorming combined with project-based learning could be intensively employed in the classroom to develop students' writing skills.

Furthermore, based on the classroom observation, it was found that all lecturers who taught writing skills in classes A, B, C, and D intensively brainstormed with students in the pre-activity stage, then followed by project-based learning. Students were found to be very active in doing their projects and writing the reports comprehensively because they attained a lot of information and ideas during the brainstorming stage. Students also present their reports with confidence. Meanwhile, the lecturers enjoyed the class because their students were fully engaged in learning.

Moreover, a questionnaire was administered to know the students' responses concerning the implementation of brainstorming combined project-based learning in the teaching-learning process. The questionnaire also showed that 58.33% of the students strongly agreed, 29.17% of the students agreed, 8.33% were undecided, 4.17% disagreed, and none of the subjects stated firmly disagreed with the implementation of brainstorming combined with project-based learning. The result showed that the students' responses toward implementing brainstorming combined with project-based learning were positive. The students showed positive responses and were more interested and active in the learning process conducted through the implementation of brainstorming combined with project-based learning. This Questionnaire results showed that students enjoyed learning through the implementation of brainstorming combined with project-based learning in teaching writing.

The effectiveness of brainstorming combined with project-based learning was because all students became active in learning. The combination of brainstorming and project-based learning provided many opportunities for the students to develop their ideas and express their thought independently. In a writing classroom, brainstorming is considered a free-associative thinking activity to categorize, select, and arrange topics for discussion according to the topic, intent, purpose, and interaction context. Moreover, the brainstorming strategy allows students to use their previous knowledge in their writing activities and learn what skills and information they have and what they need to know (Al Masri, 2019).

Brainstorming is a teaching strategy involving students by raising student problems and inviting them to these problems so that students involve their thoughts, ideas, ideas and even their responses (Malkawi & Smadi, 2018). The brainstorming strategy is a learning strategy implemented in the classroom by posing a problem to students that they must answer or respond to so that the problem develops into a new one. This strategy allows students to develop creative thinking so that consideration provides a way for creative initiatives (Listyani, 2020). Students become motivated to devote all the ideas that arise from their minds within a certain period regarding several problems and are not asked to be assessed the brainstorming (Abedianpour & Omidvari, 2018).

Brainstorming is an effective strategy to be implemented in the writing classroom because it is a fast way to solve different problems and generate as many new ideas as possible (Hidayanti et al., 2018). Moreover, brainstorming stimulates the brain to think logically, spontaneously and creatively. Furthermore, brainstorming and project-based learning enable students to practice the stages of writing activities, such as (1) pre-writing, (2) writing, and (3) post-

writing stages (Handayani et al., 2019). In the selection of the pre-writing stage, students select content areas for writing through brainstorming. Furthermore, project-based learning can be intensively implemented to maximize students writing practices (Syahrin et al., 2019).

This study found that brainstorming combined with project-based learning can be used to build up students' writing skills. Students found the strategies very effective and aroused their motivation to learn writing. In all writing activities, students actively participated in the learning activities. Through implementing brainstorming combined with project-based learning, students have many opportunities to develop their writing skills because they are challenged to complete the projects and present the results in good writing. Moreover, the combination of brainstorming and project-based learning enables students to learn together in groups. It also helps students develop their social skills.

IV. CONCLUSION

The implementation of brainstorming combined with project-based learning in the classroom helps students to improve their writing skills. The writing activity can be started by implementing brainstorming by posing problems to the class. Students answer or express opinions or comments so that they may develop into new problems or can be interpreted as a way to get ideas from a group of people in a short period. After students had various ideas about the writing topics, they were assigned to a project based on their ideas, and then the project resulted in the form of writing. Brainstorming combined with project-based learning was effectively implemented in writing classes because students could express and develop their ideas independently. This study suggests that the integration of brainstorming and project-based learning should be carefully considered as a strategy to improve students' language skills. Furthermore, other researchers are suggested to continually study the effectiveness of brainstorming combined project-based learning for effective teaching strategies to enhance students' competence in learning.

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