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Implementing Teaching Writing Explanation Text using Mind Mapping and Popplet in Senior High School: A Classroom Action Research

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A B S T R A C T

The aim of this study is to investigate the implementation of mind mapping and Popplet techniques in the learning of the writing of explanatory texts. The research method involved a qualitative approach to classroom action research. Data were collected through observation, semi-structured interviews, and documentation. The research participants were twenty-three students from class XI MIPA at senior high school, with nine students selected as respondents through purposive sampling. The findings of this study indicate that the use of mind mapping and Popplet techniques helped students better comprehend the learning material. Students provided positive feedback on the application of mind mapping and the Popplet app, as they felt these tools assisted them in the process of writing explanatory texts. The use of mind mapping facilitated students' idea organization, while Popplet enabled the visualization and digital presentation of explanatory texts. The findings indicate that combining mind mapping and Popplet can enhance the efficiency and effectiveness of learning to write explanatory texts. This research offers teachers a new tool to employ innovative approaches to writing instruction, facilitating students' comprehension and proficiency.

1. Introduction

Writing is a productive English ability that students studying English as a Foreign Language (EFL) in Indonesia are taught to be proficient in writing for a variety of purposes. As observed by Ariyanti et al. (2017), Indonesian EFL students frequently encounter difficulties in essay writing, particularly in the areas of grammar, coherence, and organization. Errors are commonly made in spelling, diction, and paragraph structure. Additionally, students tend to face challenges with plural forms, articles, verb tense, clauses, passive voice, and prepositions in their writing.

The act of composing written texts provides individuals with a means of conveying their thoughts, ideas, and emotions to others. Writing is a form of self-expression that enables individuals to create and disseminate their narratives, opinions, and experiences to the public. As stated by McMahan et al. (2016) in the article Toba et al. (2019), writing fulfils a variety of functions, including the expression of emotions, the entertainment of readers, the conveying of information, and the persuasion of audiences.

The teaching of English writing would benefit from further development through the implementation of additional methods and techniques. One such technique is mind mapping. According to Sifa'u, (2021), the modern mind mapping developed by Buzan does not require the reader to undertake a sequential, left to right and top to bottom scanning of the material. According to Nurjanah et al. (2020), the use of the mind mapping method in teaching writing explanatory texts effectively overcomes students' difficulties in starting to write and increases their creativity and critical thinking in expressing ideas and thoughts through mind maps. This method also increases students' productivity and activity in writing. In a different study, Hasanah et al. (2016) reported that the utilization of mind mapping techniques can enhance the capacity of Lab School Unsyiah students to write analytical exposition texts in relation to the research objectives outlined in this study. This is evidenced by the elevated posttest mean score in comparison to the pretest mean score, namely 53.8 > 26.9.

The application of technology is an invaluable aid to learning, particularly in the context of mind mapping, as evidenced by the effectiveness of the Popplet application. Popplet is a digital tool that can facilitate the writing process by enabling users to record ideas in advance and then represent them in the form of a mind map before integrating them into paragraphs. The software is available for use on both smartphones and computers, and it is accessible free of charge.

In this study, the researcher concentrated on one of the texts under examination, namely an explanatory text. Explanatory text is defined as a text that provides an explanation of the process by which a natural, technological, cultural, knowledge-based, or social phenomenon occurs. As stated by Refnaldi (2010), cited in Aprianti, et al. (2018), the genre of explanation is defined as a factual text that interprets the underlying processes of the evolution of natural phenomena. This research aims to address a gap in knowledge within the field of English education by introducing a new method of mind mapping in conjunction with Popplet, with the objective of developing students' English writing skills, particularly in the context of explanation texts. In contrast to preceding investigations, this research broadens the scope of its enquiry by incorporating the utilization of applications in conjunction with the methodology previously employed. It is anticipated that the findings of this study will provide a valuable reference point for further research in this field.

2. Methodology

Research Design

The researcher used a classroom action research design. As stated by Hermida (2001) in Agustine (2021), classroom action research represents a methodology for identifying the most efficacious approach within a specific classroom context. The objective is to enhance the quality of learning and teaching at the classroom, departmental, or school level. It can be determined that classroom action research enables educators to conduct a comprehensive assessment and implement enhancements to their pedagogical approaches within the classroom setting. The primary objective is to optimise the teaching-learning process and student learning outcomes.

Researchers used the Action Research Cycle and Stages adopted from Milesi et al. (2020), as in Figure 1 where there are four stages, including (1) Observe, (2) Plan, (3) Act, and (4) Reflect.

Figure 1. Action Research Cycle and Stages
(Adopted from Milesi et al. 2020)

As reported by Ramdani et al. (2022), this action research methodology facilitates the systematic organisation of tasks conducted throughout the phases of planning, action (intervention), observation, and interpretation. In light of the aforementioned information, it can be posited that classroom action research represents a categorisation of research that is concerned with the resolution of issues pertaining to the learning process and the enhancement of said process.

Classroom action research represents a significant methodology for those engaged in the field of education. This method allows researchers to identify and address learning problems that occur in the classroom in a systematic manner. This allows educators to continually refine their pedagogical approaches and elevate the caliber of the teaching-learning process.

Instructional Procedure

The teaching and learning cycle represents an ongoing and collaborative process between teachers and learners, with the objective of establishing an effective learning environment. This process comprises the following stages: planning learning activities, implementing learning material adapted to the specific requirements and attributes of the learner, monitoring the achievement of the desired learning outcomes on a regular basis, and reflection and evaluation to enhance the overall quality of the learning process in the future. It is anticipated that the effective implementation of the teaching and learning cycle will facilitate the achievement of learning objectives and the development of knowledge, skills, and attitudes in learners.

Researchers used the Teaching and Learning Cycle adapted from Derewianka and Jones 2016, as shown in Figure 2.

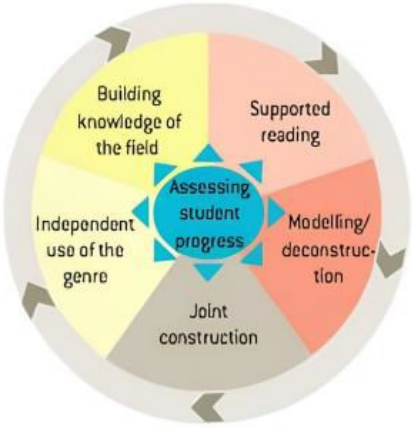

Figure 2. The Teaching and Learning Cycle
(Adapted from Derewianka and Jones 2016)

Stages of Teaching and Learning Cycle – Genre Based Approach adapted from (Triastuti, *et al.* 2022; Derewianka and Jones, 2016). The TLC by Derewianka and Jones (2016) consists of five stages: (1) building knowledge of the field; (2) supported reading; (3) modeling and deconstruction; (4) joint construction; and (5) independent use of the genre.

The stages in learning an explanatory text are as follows:

1) Building Knowledge of the Field
   At this stage, students are helped to build an understanding of the explanatory text. The teacher can provide an explanation of the definition, purpose, and characteristics of the explanatory text.
2) Supported Reading
   At this stage, students read examples of explanatory texts with the guidance of the teacher. The teacher can direct students to identify the structure and linguistic features of the explanatory texts they read.
3) Modelling and Deconstruction
   At this stage, students learn and deconstruct the structure and linguistic features of an explanatory text in more detail. Teachers can provide examples of good explanatory texts and guide students to analyze

important components, such as the use of conjunctions, complex sentences, and technical vocabulary.

4) Joint Construction
   At this stage, students collaborate to create an explanatory text together. The teacher can facilitate the discussion and send down directions to help students in the writing process.
5) Independent Use of Genre
   In the final stage, students write an explanatory text independently using mind mapping and Popplet application. This activity allows students to demonstrate their understanding and ability to write effective explanatory texts. Teachers can provide individualized feedback and guidance during the writing process.

In this study, data were collected through observation, semi-structure interviews and documentation. Observation was conducted in this study to find out how the implementation of mind mapping and Popplet in learning to write explanatory texts. English teachers implement Building Knowledge of the Field, supported reading, modelling and deconstruction, joint construction and independent use of the genre in teaching explanatory texts, and how students respond when the implementation. Then, semi-structured interviews were conducted in this study to find out how the results of the implementation of mind mapping and Popplet on students' abilities related to explanatory text. Meanwhile, documentation was conducted to support this research.

3. Results and Discussion

1) Building Knowledge of the Field

At this stage of the learning process, students are assisted in developing their understanding of an explanatory text. The teacher explains an explanatory text's definition, purpose, and qualities, as well as an overview of its general structure, which usually comprises a broad statement, a series of explanations, and a conclusion. This practice ensures that students have a firm foundation of information to build on as they progress in their education. The teacher explained the material as shown in Figure 3.

Figure 3. Teacher explains definition and structure of explanation text

2) Supported Reading

At this step, students read examples of explanatory texts while being supervised by the teacher. The teacher can help them identify the structural and linguistic elements of the explanatory texts they read, as well as organize class discussions to help students better understand the text's content and organization. This activity can be seen in Figure 4.

Figure 4. Students read explanation text

3) Modelling and Deconstruction

At this stage, students learn how to deconstruct and analyze the more complex components of explanatory material. Teachers provide students with examples of high-quality explanatory writing and help them identify key features. They emphasize aspects such as the use of appropriate conjunctions, complex sentence structures, and technical vocabulary. The goal is to help students understand how these components combine to produce successful explanatory text. This activity is shown in Figure 5.

Figure 5. Modelling and Deconstruction

4) Joint Construction

At this stage, students collaborate as a group to collectively create an explanatory text, with the teacher providing guidance and direction throughout the writing process. This activity serves as a chance for students to apply their understanding of the structure and characteristics of an explanatory text and to work as a team to produce a cohesive and well-organized piece of writing. Students conducted group activities as shown in Figure 6.

Figure 6. Group Discussion

5) Independent Use of Genre

In the final stage, students will independently compose an explanatory text using mind mapping and the Popplet application. This task serves as a platform for students to exhibit their comprehension and skill in constructing effective explanatory texts. The teacher provide one-on-one direction and comments at various points throughout the writing process. Students work on the task of creating explanatory text using popplets individually, as can be seen in Figure 7.

Figure 7. Applying Popplet to create mind maps and write explanatory texts

Results of students' explanatory text writing using Popplet

The results of students writing explanatory text using mind mapping and then applied using popplet media, can be seen in pictures 8 and 9. In the pictures students poured their ideas about earthquakes, and created explanatory texts.

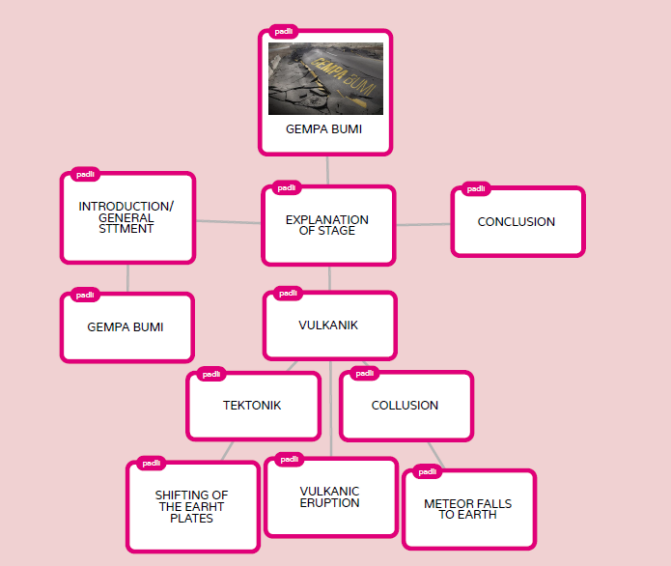

Figure 8. Student result using Popplet

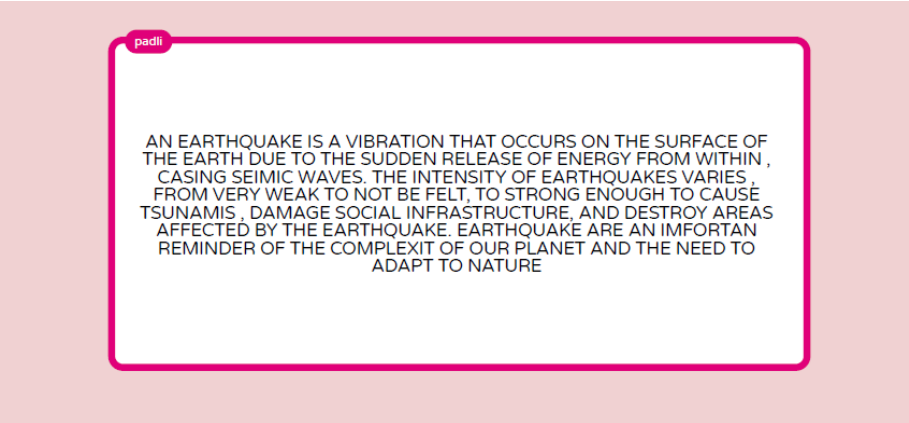

Figure 9. Student result using Popplet

Students admitted that mind mapping is very helpful in learning. Because of mind maps, students can remember the important points to be written. According to R1, the mind mapping technique has not been applied in learning English. She said that mind map can improve her memory and attention. At first, she had difficulty applying mind mapping.

"Mind mapping very helpful, because it can improve students' memory and attention. At first, yes it's difficult, but after Miss Santi explained it, it became

easier. The disadvantage of mind maps is that they can take a long time for learners who are beginners and lack interest in reading."

In addition, R1 also said that Popplet has helped him a lot because this web-based application can be accessed for free and is safe to use. Although R1 experienced some problems at first when the Popplet website crashed, he later managed to overcome them and returned to using Popplet as a tool that supports making mind maps in his learning process.

"Popplet is a website that is used to create mind mapping. We can use features that make it easier for us to create mind mapping. In my opinion, the advantages of Popplet are that we can use it for free, it is safe to use, and it is easy to export to PDF or JEPG. But besides that, Popplet has disadvantages, including that the Popplet application is not on Android and the Play Store sometimes errors when used."

Based on the data, the researcher explored the use of mind mapping and Popplet in teaching explanation text. The researcher found that the use of a mind map in the learning process provided positive responses from the students. For example, students can improve their creativity in making mind map designs and determine the important points to be written in an explanatory text. This finding is related to research conducted by Rizkiana et al. (2019), which found that the use of the mind mapping method can effectively increase students' motivation and engagement in the learning process of writing explanatory texts.

Based on observations and semi-structured interviews, the use of mind maps in different stages helps students to generate ideas and coordinate sentences in explanatory texts. Furthermore, students agreed that using mind mapping in the classroom should be considered for future implementation. For students, mind maps offer significant advantages, including the ability to organize key concepts and ideas, facilitate comprehension, and enhance cognitive development. Although mind maps have several advantages and students are in favor of their use in the classroom, respondents believe that they have the disadvantage of being unable to be used in a variety of learning materials. They put forward suggestions that teachers should be more creative in preparing learning materials and that more engaging mind maps should be created to capture students' interest in the subject matter. However, there are still limitations, so it is recommended that the existing features be utilized to their fullest potential.

The utilization of the Popplet application is also beneficial to the students' learning process, as it is regarded as a newly devised and creative method of facilitating learning. Based on Heintzelman's (2016) findings, the new technology of popplets can facilitate the integration of technology into classroom learning. Thus far, the students have seldom employed digital technology as an instrument for acquiring new knowledge. However, they asserted that Popplet was easily accessible and instrumental in visualizing ideas and concepts, as well as in the creation of more effective mind maps. Nevertheless, the Popplet web application

is not without shortcomings, including a lack of visual variety due to its reliance on boxes.

Moreover, the arrows, which are only capable of movement in a single direction, are also perceived as an impediment to students' ability to explore and express their creativity. Moreover, the Popplet web application was observed to manifest occasional errors or technical glitches during operation. Furthermore, users of the Popplet service are required to access it via a single email account, which can prove onerous for students intending to use the Popplet application on multiple devices. Nevertheless, Popplet is regarded as an efficacious and innovative pedagogical instrument for cultivating critical thinking abilities, creativity, and the capacity to conceptualize learning.

In summary, the utilization of mind mapping and Popplet has been demonstrated to facilitate the development of creative ideas for writing important points in students, subsequently enabling the structuring of these ideas into complete explanatory texts. Despite certain limitations, these techniques can be employed by educators as innovative learning alternatives to enhance students' writing abilities. While there are some drawbacks associated with the use of mind mapping and Popplet, such as the time required for implementation or the potential difficulty for some students in using the application, these methods have been demonstrated to be effective learning alternatives that can facilitate the development of students' explanatory text writing skills.

4. Conclusion

In conclusion, the evidence presented in the previous chapter demonstrates that the use of mind mapping and the Popplet web application can facilitate students' capacity to enhance their proficiency in composing explanatory texts. The implementation of the five stages of mind mapping learning has been demonstrated to be an effective approach for students in the organization of ideas prior to the writing process. In the initial stage of developing their understanding of the subject matter, students are provided with an insight into the defining features and structural elements of an explanatory text.

Moreover, students are provided with illustrative examples of explanatory texts, enabling them to differentiate this genre from others. Subsequently, students are furnished with an understanding of mind mapping techniques, enabling them to discern the principal ideas and pertinent sub-ideas and to comprehend their application in the process of composing an explanatory text. After this, the students were divided into groups and tasked with creating a draft mind map. Students may then proceed to compose an explanatory text based on the mind-mapping formulation they have previously devised.

Moreover, in order to enhance the learning experience and encourage creativity, students are provided with the option of creating their own mind maps using the Popplet application. The features provided by Popplet facilitate the visualization

of the relationship between ideas, concepts, and information for students. Subsequently, students may proceed with the composition of an explanatory text based on the mind map that has been constructed. The integration of mind mapping and the Popplet application as a learning strategy facilitates not only the organization of ideas but also an enhancement in students' capacity to write explanatory texts. The students responded positively and actively to the learning process of composing explanatory texts through the use of mind mapping and the Popplet application. The students perceived the mind-mapping technique to facilitate the organization of words, the development of creativity and thinking skills, and the composition of explanatory texts.

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