Improving Students' Competence in Writing Explanation Text Using the Cooperative Learning - Jigsaw with Genre-Based

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ABSTRAK

Menulis adalah praktik menjangkau pikiran seseorang dan mengeksplorasinya secara kreatif yang membutuhkan informasi akurat. Kita membutuhkan orang lain untuk mempraktekkan diskusi dan kerja kelompok, agar keberhasilan belajar dapat tercapai. Tidak semata-mata ditentukan oleh kemampuan individu, tetapi perolehan belajar akan lebih baik lagi jika dilakukan secara bersama-sama. Faktanya, peserta didik menghadapi berbagai macam tantangan dalam menulis, termasuk kurangnya kosa kata, tidak memiliki ide, kesulitan tata bahasa, dan kurangnya kerja sama dengan teman. Penelitian ini bertujuan untuk meningkatkan kemampuan siswa dalam menulis teks eksplanasi menggunakan pembelajaran kooperatif Jigsaw dan untuk mengetahui respon siswa setelah menerapkan Jigsaw terhadap minat dan motivasi belajarnya. Penelitian tindakan kelas digunakan dalam desain penelitian ini. Subyek penelitian adalah siswa kelas XI MIPA 10 SMA Negeri 2 Semarang. IBM SPSS 25 digunakan untuk melakukan analisis, dan juga digunakan untuk mengolah data dengan pedoman Nilai KKM dan uji t sampel berpasangan. Hasil penelitian ini telah mencapai kriteria keberhasilan yang dibuktikan dengan adanya peningkatan persentase rata-rata hasil belajar siswa yaitu (mean = 57,39) 22% untuk pre-test, (mean = 69,11) 36% untuk postes 1, dan (mean = 82,83) 89% untuk postes 2 siswa lulus KKM pada siklus II. Selain itu, sebagian besar siswa memberikan respon positif terhadap penerapan Jigsaw. Keterampilan menulis siswa meningkat secara signifikan ketika mereka diajarkan menulis teks eksplanasi menggunakan pembelajaran kooperatif Jigsaw berbasis Genre. Hasil penelitian ini memiliki implikasi penting bagi para peneliti, khususnya mereka yang minatnya terletak pada bidang pendidikan dan bahasa, serta bagi guru bahasa Inggris sebagai data fundamental untuk peningkatan metode pembelajaran interaktif dan kooperatif.

Kata Kunci: kooperatif, kemampuan menulis. Jigsaw, teks eksplanasi

ABSTRACT

Writing is the practice of reaching into one's mind and exploring it creatively which requires accurate information. We need other people to practice such discussions and group work to achieve learning success. It is not solely determined by individual abilities, but learning gain will be even better if it is carried out together. In fact, the students face a wide variety of challenges when it comes to writing, including lack of vocabulary, having no ideas, grammatical difficulties, and lack of cooperation with friends. This study aims to improve students' competence in writing explanation text using cooperative learning Jigsaw and to determine students' responses after applying Jigsaw to their learning interests and motivation. Classroom action research was used in the design of this research. The research subjects were class XI MIPA 10 students at State Senior High School 2 Semarang. IBM SPSS 25 was used to perform the analysis, and it was also used to process the data with the Minimum Passing Grade (KKM) guidelines and paired sample t-test. The result of this study has reached the criteria for success which were proven by the fact that there is an improvement in students' learning outcome average percentage that is (mean = 57.39) 22% for pre-test, (mean = 69.11) 36% for post-test 1, and (mean = 82.83) 89% for post-test 2 of the students passed the minimum passing grade (KKM) in the cycle II. Furthermore, most of the students gave positive responses to the implementation of Jigsaw. The student's writing skills are significantly improved when they are taught writing explanation text using cooperative learning Jigsaw with Genre-based. The results of this study have important implications for researchers, particularly those whose interests lie in the fields of education and language, as well as for English teachers as fundamental data for the enhancement of interactive and cooperative learning methods.

Keywords: cooperative, writing ability, Jigsaw, explanation text

1. INTRODUCTION

Education is an effort to prepare the next generation (students) with the abilities and expertise (skills) needed to have the ability and readiness to enter the middle of the community environment, so that (humans) are beneficial for the interests and welfare of themselves and others (Masykur, 2019). In an era of rapid development of science, it greatly influences the implementation of education. Teacher professionalism is not enough only with the ability to teach students but also must be able to manage information and an environment that facilitates fun learning activities. The concept of the environment includes learning places, methods, media, and assessment systems, as well as the facilities and infrastructure needed to package learning and organize tutoring so that it makes it easier for students to learn in a happy and prosperous atmosphere. This is in line with the 2013 Curriculum which is still used in some schools, including in schools where research is conducted. Even though the Independent Curriculum has been implemented for some classes in schools, especially tenth grade, the 2013 curriculum also carries student-oriented educational goals. The material aspect is provided based on the needs and ability levels of students who are different from the previous curriculum. The 2013 curriculum has advantages, especially in the process of learning approaches and implementing evaluation of results and learning processes (Masykur, 2019).

The revised edition of the 2013 curriculum took effect in the 2016/2017 academic year where changes to the revised edition of the 2013 curriculum were to integrate *"Penguatan Pendidikan Karakter"* (PPK) in learning. The characters that are strengthened are mainly 5 characters, namely: religious, nationalist, independent, cooperation, and integrity which must be applied to each subject (Wahono, 2019). One of them is learning English which is the language of international communication, so students are required to learn English competence according to what is stated in the curriculum. But the English competence achieved by most high school graduates is still far from expectations. Many factors are the cause of this problem. To improve students' English competence, researchers tried to explore the problems that existed in the school where the assignment was carried out.

By making direct observations and conducting diagnostic assessments in the even semester of the 2022/2023 school year for students in class XI MIPA 10 at State Senior High School 2 Semarang, the authors found that most students in class XI MIPA 10 had the motivation to be able to speak English. Although some students seem less interested in learning English because they find it difficult when using English. The obstacles they face are the difficulty of understanding and applying grammar and the lack of vocabulary. This situation is recognized by students who often state that they have many difficulties every time they get a 'Writing' assignment.

After carrying out a diagnostic assessment on March 21, 2023, in class XI MIPA 10 by asking questions via *"quizizz"* to identify students' difficulties in learning English. The results of the diagnostic assessment found that the highest percentage of student answer errors was in the writing aspect in item numbers 3, 15, 16, and 20 with the respective error percentages being 79%, 48%, 72%, and 86%. This shows that there is a problem with students' writing skills which the writer will focus on in this study.

Likewise, with observations that have been made in class, the author observes that there is a relationship between students and other students who tend to be individualistic, meaning that there is no good cooperation in learning. So that when their friends find it difficult, they will tend to be silent and don't dare to ask other friends. Students are less active in participating in class and do not dare to express what they feel or think. This is because students feel that English is difficult, especially in terms of writing, they have not mastered English grammar. Improving writing skills in the classroom is more challenging than other language skills because writing is the most challenging skill to learn in language class (Isgiarno et al., 2020).

In pre-test writing, students experienced great difficulty when asked to

write an explanation text. This is due to a lack of English vocabulary that can support their writing. Another problem is that the writer has not provided a guide or supporting media in making an explanation text, so students have difficulty starting to write. Students think difficult to find and express ideas because the explanation text is related to science or scientific material; students have difficulty making sentences because of the low level of vocabulary mastery; students pay less attention to punctuation; and students tend to be passive in learning activities. This reflects not only low mastery of grammar and vocabulary but also of spelling and the development of its basic steps. In this case, students must be guided by interactive, cooperative learning and discussions with their friends.

One of the teaching methods is cooperative learning, which is based on human nature that needs to work together with others (Isgiarno et al., 2020). Cooperative learning has proven successful in improving not only students' language skills but also their social skills. One of the cooperative learning techniques is the jigsaw technique. Setiyadi et.al (2018) states that the jigsaw is a technique that can be used to teach student skills. The Jigsaw technique is an effective way to increase student involvement in learning through group work which makes peer-to-peer activities easier to do (Shume in Ruantika, Rifka Arina, 2020). The jigsaw technique is a cooperative learning technique with students learning in small groups consisting of 4-6 students heterogeneously and working together to be mutually responsible for the mastery of the material being studied.

According to (Slavin, 1982) Jigsaw is most appropriate for subjects or fields of study in social sciences where more emphasis is placed on mastering scientific concepts, Jigsaw teaching is in the form of chapters, narrative texts, biographies, or stories. From the various opinions of these experts, the Jigsaw Technique is an effective learning method for students because it attracts interest in learning with heterogeneous groupings and has a flexible nature or adapts to the conditions of the learning environment through teaching explanation texts.

We know that managing writing learning is not easy. Researchers often face the problem that learning writing requires models and lots of examples, stages, and patience because it takes up a lot of time (time-consuming), especially for researching students' work. To overcome this, researchers try to overcome it by using a cooperative learning model in the form of a Jigsaw and Genre-based. This Genre-based learning has 4 stages of learning namely, Building of the Knowledge (BKOF), Modeling of the Text (MOT), Joint Construction of the Text (JCOT), and finally Joint Construction of the Text (JCOT). As is. Modeling students get clarity on the structure of the text they study and write. With Joint Construction, students can be helped to reduce anxiety because they can still ask questions and exchange ideas in producing text together. While with the Independent Construction of the Text, students do have to write their explanatory texts after understanding the 'structure of the explanatory text and its grammatical features' with practice questions in the form of jumbled words, sentences, and paragraphs. Students observe examples and practice writing in groups. Cooperative learning in the form of a Jigsaw, namely structured group work/study. This structure consists of five main elements (Johnson & Johnson in Saha & Singh, 2016) namely positive interdependence, individual responsibility, personal interaction, collaborative skills, and group processes. This learning model and technique are expected to give students confidence and provide effective motivation.

Several previous studies support this research. Iswahyuni & Kiswati (2019) researched Jigsaw, mind-mapping, and roundtable techniques to improve students' writing competence in Recount text material. The results of his research show that a combination of Jigsaw, mind-mapping, and roundtable techniques can improve writing recount text competence in junior high school students with the highest aspect of improvement being grammar. Likewise, research conducted by Isgiarno et al. (2020) on improving students' EFL writing skills using the Jigsaw Technique and online searching strategies on recount text material.

Based on the research results, students' ability to write recount texts, especially biographies, increased after applying JOSS. All students (100%) achieved the success criteria.

In contrast to previous research, the researcher planned research using cooperative learning – Jigsaw with a Genre-based approach to increase students' writing skills on explanation text material. In addition, the research subjects were also different, the researchers used Senior High School XI grade as subjects for this study. Researchers hope to improve the competency of English Explanation Text writing skills through the Genre-based Jigsaw Technique for class XI MIPA 10 students at SMA Negeri 2 Semarang in the 2022/2023 academic year. More particularly, the research aimed to answer two questions: 1) Can the Jigsaw technique in cooperative learning with genre-based be used to improve the students' writing skills on explanation text? 2) Do the students have good responses towards the application of Jigsaw?

Literature Review
Competency

According to the *"Kamus Besar Bahasa Indonesia* (KBBI), 2002"*, competence is skill, knowledge, authority, and power to decide or determine something. Referring to the 2004 English Competency Standards for High School Curriculum, Depdiknas (2004) reveals that language is communication, not just a set of rules. The implication is that the language competency model formulated is a model that prepares students to communicate in language to participate in language-using communities.

The main competence aimed at language education is Discourse Competence. That is, if someone communicates both orally and in writing that person is involved in a discourse with various topics. In this case, discourse is a communication event that is influenced by the topic being communicated, the interpersonal relationships of the parties involved in the communication, and the communication channels used in a cultural context. Whatever meaning he obtains and creates in communication is always related to the cultural context and context of the situation that surrounds him (Depdiknas, 2004).

The target of English proficiency is the ability to communicate both orally and in writing which is acceptable at the international level. In this case, it means that English is taught in a grammatical and cultured manner that can be accepted and understood by native speakers of that language. The English Competency Standards Curriculum emphasizes 4 language skills (Listening, Speaking, Reading, and Writing).

Writing

Writing is a form of communication that involves putting one's thoughts down on paper. The production of language through writing is a means of expressing thoughts, emotions, and points of view (Harmer in Wardhani et al., 2019). Then, Harmer (2004) states Writing is a process that we write that is often heavily influenced by the constraints of genres, and then these elements must be presented in learning activities. Students who are writing within a certain genre consider several different factors, such as they have to knowledge of the topic, the convention and style of the genre, the context in which their writing will be read, and by whom. Writing also has always been part of the syllabus in the teaching of English. On the other hand, writing is the mental work of composing thoughts, thinking about how to express them, and organizing them into statements and paragraphs that will be clear to a reader (Harlena et al., 2019). It can be concluded that writing is the act of physically committing words or ideas to some medium, whether it be hieroglyphics inked onto parchment or an email communication typed into a computer. Writing can be traced back to ancient times and can take many forms.

Writing ability is one of the communication abilities that has functions to express thoughts and messages to people and the environment in written form. Writing ability is part of being able to communicate effectively (Eka Wiratna & Hamdiah, 2020).

According to (Heaton, 1990), there are five aspects of writing to assess students'

writing ability such as. the content, organization, grammar/language use, vocabulary, and mechanics.

1. Content
   It is described as the part of a piece of writing that is obvious from the topic phrase and major theme.
2. Organization
   It tells about the text's coherence. It involves how the author structures the thoughts so that they flow naturally inside the paragraphs.
3. Grammar/Language Use
   It refers to the grammatical forms of the text. The use of grammatical form constructs a well-formed sentence.
4. Vocabulary
   It tells about the selection of appropriate words for the content. It can be identified by focusing on the word choices or diction used to deliver the ideas to the reader.
5. Mechanics
   It deals with the language's graphic conventions. The paragraph of text can be identified by its spelling, punctuation, capitalization, and other features.

From that explanation, the researcher can conclude that writing ability is a natural activity to employ letters, words, or symbols that are written by hand or typing to express ideas or information. It can be individual writing or collaborative writing.

Cooperative Learning

Cooperative learning encourages students to interact actively and positively in groups (Slavin, 1982). Cooperative learning includes a learning system that means completing tasks together or helping each other in a group of individuals (Slavin, 2009). The cooperative learning model is a learning model that supports contextual learning. A cooperative learning teaching system can be defined as a structured group learning system. Therefore, many teachers say there is nothing strange in cooperative learning because they think they are used to

using cooperative learning in the form of group learning. Although not all group learning is said to be cooperative learning, as explained by Abdulhak in Rusman (2014) says, "Cooperative learning is carried out through a sharing process between study participants, so that mutual understanding can be realized among the study participants themselves". In this learning, a broader interaction will be created, namely interaction and communication between teachers and students, students to students, and students to teachers (multi-way traffic communication).

Jigsaw

Jigsaw was first devised by Elliot Aronson and colleagues at the University of Texas, then at the University of California at Santa Cruz. Then Jigsaw was modified by Robert E. Slavin and his colleagues at Jhon Hopkins University (Arends, 2012).

(Slavin, 1995) says that "In Aronson's Jigsaw method, students are assigned to six-member teams to work on academic material broken down into fly e sections. Each team member reads his or her unique section, except for two students who share a section. Next, members of different teams who have studied the same sections meet "expert groups" to discuss their sections. Then the students return to their teams and take turns teaching their teammates."

From this description, we can see that Jigsaw developed by Aronson divides students into six teams that have different material. Each team member reads their respective parts that have been planned by the teacher. Next, members of the different team "home groups" who had studied the same section met with the "expert group" to discuss their sections. Then students return to their teams and take turns teaching their teammates their part. Other students can learn different material by listening carefully to their teammates. It is intended that students are motivated to support and show interest in each other's work.

Jigsaw is designed to increase students' sense of responsibility for their learning and the learning of others. Students not only learn the material that has been given but they must also be prepared to give and teach the material to other group

members. Thus students depend on one another and must work cooperatively to learn the assigned material (Lie in Harahap et al., 2019). According to Mengduo and Xiaoling (2010), the jigsaw is an activity that creates interaction by providing students with an opportunity to help each other build comprehension actively. By using a jigsaw, students are encouraged to communicate and accomplish the idea of the task given by the teacher, together with their group members actively.

The advantages of Jigsaw according to Aronson (1978): are 1) It allows students to teach themselves about the material; 2) Students can practice peer teaching, which requires an in-depth understanding of the material; 3) Students become more fluent in English as they have to explain the material to their peers; 4) Each student has to be involved in meaningful discussion in a small team. This is hard to achieve in large group discussions; 5) Each group is fostered in real discussion followed by a question-and-answer session.

Explanation Text

Explanation text is one of the texts that must be mastered by students in learning both the 2013 Curriculum and the Merdeka Curriculum. In Basic Competency 4.8 it is stated that students are expected to be able to capture meaning contextually related to social functions, text structures, and linguistic elements of oral and written explanation texts, related to natural or social phenomena.

Some experts reveal their opinions about explanation texts such as Gerot and Wignell (1994) who state that the social function of explanation texts is "to explain the processes involved in the formation or workings of natural or sociocultural phenomena". Then, Anderson and Anderson (2003) explained that "the explanation text type tells how or why something happens, it looks at the steps rather than the thing, the purpose of an explanation is to tell each step of the process (the how) a given reason (the why)". Based on these opinions, it can be concluded that explanation text is a text that functions to explain why and how something happened with the processes involved in the formation or occurrence of natural

phenomena and social phenomena. More emphasis on ways than things. The function of explanation is to explain the steps and give reasons why and how something happened.

2. METHOD

This research is Classroom Action Research. Particularly, it was a collaborative classroom action research in which the researchers were assisted by an English teacher. It is conducted in a classroom setting and is aimed at solving problems faced by a teacher in the classroom (Burns, 1999). From the preliminary study, it was known that the students' problem dealt with how to improve their skill in writing an explanation text. This study was conducted at State Senior High School 2 Semarang, Central Java. In this study, the subjects of the research were the students of the eleventh grade of the Mathematics and Natural Science study program especially "XI MIPA 10" at the 2022/2023 academic year. According to Sugiyono (2018), the characteristics and numbers possessed by the population are included in the sample. The sample is a portion of the population. There were 36 students in the class as the population for this study.

In conducting research, researchers follow several steps. The steps include a preliminary study to analyze and identify problems as preparation, followed by planning actions, implementing actions, observing, analyzing, and reflecting. The researcher carried out research procedures that followed those of Kemmis & McTaggart (1998). When it comes to practical instruction, data collection strategies include pre-testing and post-testing, as well as survey questionnaires and observations. Beginning in March 2023 until June 2023, this study will be conducted during Practical Teaching (PPL) II at State Senior High School 2 Semarang.

Instrument of the Research

The researcher used pre-test, post-test, and questionnaire in this study. The pre-test will be given in the first meeting before using the Jigsaw technique in a classroom. Then, the researcher used Jigsaw in the teaching-learning process and gave a post-test in the last section. Not only pre-test

and post-test, but the researcher also gave a questionnaire after a class to get the description data of the student's perception of using Jigsaw for the learning process.

Data Analyzing Technique

In this investigation, the researcher performed the Normality test and the Paired T-test with the assistance of IBM SPSS Statistic Version 25 for Windows. A paired T-test is used to determine whether there is a significant difference in mean score between two samples that are connected. There are two methods of statistical hypothesis testing used in this study, namely the comparison of significance (Sig.) and the comparison of count with t_{table}. The decision-making guidelines are as follows:

1. If the Sig. (2-tailed) < 0.05, then H_o is rejected, and H_a is accepted.
   If the value of Sig. (2-tailed) > 0.05, then H_o is accepted, and H_a is rejected.
2. If the value of $t_{count} > t_{table}$, then H_o is rejected, and H_a is accepted.
   If the value of $t_{count} < t_{table}$ then H_o is accepted, and H_a is rejected.

Data processing using SPSS 25 begins with a data normality test so that the data obtained can be processed at the paired sample t-test stage which requires a normality test requirement. The researcher used the Shapiro Wilk and Kolmogorov Smirnov tables in the normality test, both of which are found in SPSS. The data is said to be normally distributed. If the p-value is more than 5% (0.05), then H_o is accepted; H_a is rejected. If the p-value is less than 5% (0.05), then H_o is rejected; H_a is accepted (Cahyono, 2015). Then the data was processed using a paired sample t-test to see the significance of changes in student learning outcomes on both pre-test, post-test 1, and post-test 2.

In addition, the researcher utilized the yes/no questions as a quantifying instrument for research instruments that contained predetermined variables. The questionnaire technique was used to reveal students' responses to the learning given only in cycle II. During the first cycle, researchers used learning evaluation by providing suggestions on the learning that had been done.

During the scoring process, the researcher evaluated and analyzed the data using a scoring rubric adapted from Heaton (1990) The following categories were used for the evaluation and analysis:

No.	Categorization	Description	Level	Score
1.	Content	Relevant to the topic	Excellent to very good	30-27
		Mostly relevant to the topic but lacks detail	Good to average	26-22
		Inadequate development of the topic	Fair to poor	21-17
		Not relevant to the topic	Very poor	16-13
2.	Organization	Ideas are clearly stated and supported, well organized (generic structure), and cohesive.	Excellent to very good	20-18
		Loosely organized but main ideas stand out, not well organized (generic structure)	Good to average	17-14
		Ideas confused or even no main ideas, bad organization (generic structure)	Fair to poor	13-10
		Does not communicate, no organization (generic structure)	Very poor	9-7
3.	Vocabulary	Effective word/idiom choice and usage	Excellent to very good	20-18
		Occasional errors of word/idiom form, choice, and usage, but meaning not obscured.	Good to average	17-14
		Frequent errors of word/idiom form, choice, and usage.	Fair to poor	13-10
		Little knowledge of English vocabulary	Very poor	9-7
4.	Language use	Few errors of agreement, tense, number, word order, articles, pronouns, or prepositions.	Excellent to very good	25-22
		Several errors	Good to average	21-19
		Frequent errors	Fair to poor	17-11
		Dominated by errors.	Very poor	10-5
5.	Mechanics (punctuation, spelling, capitalization)	Few errors in punctuation, spelling, capitalization	Excellent to very good	5
		Occasional errors	Good to average	4
		Frequent errors	Fair to poor	3
		Dominated by errors	Very poor	2

Table 1. The rubric of writing competence

Based on the description above, the classification of students' writing skills and the student's scores were classified in the table below and the researcher used the *"Kriteria Ketuntasan Minimal (KKM)* 75" or what we called the minimum passing grade to give the decision in the result of this study (adapted from Arikunto in Fitri: 2022):

Score	Categories
80-100	Very good
66-79	Good
56-65	Enough
40-55	Less
30-39	Fail

Table 2. The student's classification score

Furthermore, the results of the percentage of student response questionnaires in Jigsaw learning in the English subject Explanation text material are classified according to the following criteria (Akbar, 2008).

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Percentage (%)	Category
81,25 < x < 100	Very Good
62,5 < x < 81,25	Good
43,75 < x < 62,5	Not Good

Table 3. Criteria of Questionnaire

3. FINDINGS AND DISCUSSION
Improvement of Students' Writing Skills

The researchers got the data from students' writing scores in the sixth meeting. The comparison of the students' improvement from the preliminary test (pre-test), post-test 1, and the final test (post-test 2) was shown in Figure 1.
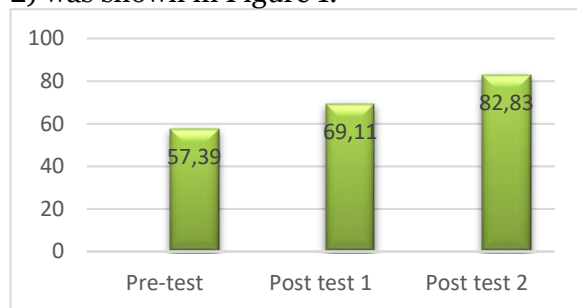
Figure 1. Improvement of the Students' Writing Skills

As shown in Figure 1, the student's writing skills improved when compared to the result of the preliminary study or pre-test (57.39). The mean of the post-test was 1 (69.11) less than the minimum passing grade (75). In the final test or the post-test 2 (82.83) exceeds the minimum passing grade (75). Additionally, the percentage of student learning outcomes that have exceeded the minimum passing grade or "*Kriteria Ketuntasan Minimal* (KKM)" for each test is 22% for pre-test, 36% for post-test 1, and 89% for post-test 2. There is an improvement from each test.

The researcher also tested the normality of the data through SPSS 25 with the following results in table 4:

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Hasil Pretest	.122	36	.195	.915	36	.009
Post Test 1	.124	36	.180	.967	36	.361
Post Test 2	.097	36	.200*	.967	36	.338

*. This is a lower bound of the true significance.
a. Lilliefors Significance Correction

Table 4. Normality Test Results for Pre-test, Post-test 1, and Post-test 2 scores

From Table 4, there are two types of data normality tests, namely the Kolmogorov-Smirnov and Shapiro-Wilk. Researchers focused on the Kolmogorov-Smirnov test because there were 36 samples in the study according to the Shapiro-Wilk test terms used for data samples of less than 50 samples (N<50). In testing data normality, data is called normally distributed if the significance value (p) is more than 0.05 (sig. > 0.05). The results of the normality test showed that the significant value (p) of the Kolmogorov-Smirnov test was 0.195 (p > 0.05) for pre-test, 0.180 (p > 0.05) for post-test 1 and 0.200 (p>0.05) for post-test 2, so based on the Kolmogorov-Smirnov normality test the data were normally distributed. Likewise, the significance value (p) in the Shapiro-Wilk test is 0.09 (p > 0.05) for the pre-test, 0.36 (p > 0.05) for post-test 1, and 0.34 (p>0.05) for post-test 2, so based on the normality test of the Shapiro-Wilk the data is normally distributed.

After the prerequisite test with the normality test, the hypothesis test can be used. The hypothesis test used in this study is a parametric statistical test, namely the Paired Sample T-test because it comes from

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two interrelated variables. This test is used to determine whether there is a difference between two paired (related) sample groups or not, using the data of pre-test with post-test 1 and post-test 1 with post-test 2. The data used is usually an interval or ratio scale (Muhid, 2012). The following are the results obtained from the paired sample t-test:

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	PreTest	57.39	36	17.475	2.913
	PostTest 1	69.11	36	9.991	1.665
Pair 2	Post Test 1	69.11	36	9.991	1.665
	Post Test 2	82.83	36	6.012	1.002

Table 5. The Results of Paired Sample Test

Based on Table 5 above, the pre-test and post-test averages have increased from 57.3 to 69.1 in cycle I. Even though the average score has increased, this value has not met the Minimum Passing Grade *"KKM"*, which is 75, so the researchers tested the post-test 1 and post-test 2 on cycle II activities using the Jigsaw Technique. From Table 5, data obtained from the average post-test 1 (69.11) < post-test 2 (82.83), means that descriptively there is a difference in the average learning outcomes and there is improvement in student learning outcomes. The average value of post-test 1 which has not passed the minimum passing grade has increased in post-test 2 which has exceeded the minimum passing grade.
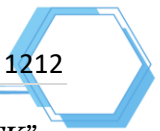
Additionally, the means the writing components, which are content, organization, language use, vocabulary, and mechanics, also improved (see Table 6).

Aspect	Pre-test	Post-test 1	Post-test 2
Content	17	19	24
Organization	13	17	18
Vocabulary	12	15	17
Language use	12	16	19
Mechanics	2,9	3,4	4,4
Total	**56,9**	**70,4**	**82,4**

Table 6. Improvement of the Means of Writing Aspect

The improvement of the students' means in each aspect of the total mean indicated that the student's achievement in writing explanation text by using Jigsaw Technique had met the criteria of success. The mean score that is used by the researchers was the average score from post-test 1 and post-test 2, which was 82.4. It could be concluded that the student's scores were reliable, and this research was successful. Therefore, the researchers did not need to continue to Cycle 3.

Furthermore, to prove whether the difference is significant or not, the researcher needs to interpret the results of the paired sample t-test in the following table 7:

Paired Samples Test

			Paired Differences						
			Std.	Std. Error	95% Confidence Interval of the Difference				Sig. (2-tailed)
		Mean	Deviation	Mean	Lower	Upper	t	df	
Pair 1	Post-Test 1 - Post Test 2	-13.722	9.498	1.583	-16.936	-10.509	-8.669	35	.000

Table 7. The result of Paired Samples T-test

Based on the output table above, it is known that the value of Sig. (2-tailed) is 0.000 <0.05, then H_0 is rejected and H_1 is accepted. It can be concluded that there is a difference between the results of the average in post-test 1 and post-test 2 and there is a significant increase in student learning outcomes. Then, from comparing the significance value (Sig.) with a probability of 5% (0.05), the hypothesis is also seen from the results of the comparison of t_{table} and t_{count}.

If $t_{count} > t_{table}$, then H_0 is rejected and H_1 is accepted, but if $t_{count} < t_{table}$ then H_0 is accepted and H_1 is rejected.

From the paired t-test output table 7, it is known that the t_{count} is negative, which is -8,669. This negative value is because the average value of post-test 1 is lower than the average post-test 2, so the negative t_{count} means a positive result (t_{count} = 8.669). Next, the researcher looks for the t_{table} value, where the t_{table} value is searched based on the df (degree of freedom) value and the significance value (α/2). From the table above, it is known that the df value is 35 and the significance value (0.05/2) is 0.025. These values become the basis of reference in finding t_{tables} on the distribution of statistical t_{table} values (attached). The ttable value obtained is equal to 2.030. From these results, the value of t_{count} (8,669) > t_{table} (2,030), then as a basis for decision making it can be concluded that H_0 is rejected and H_1 is accepted.

From the two decision-making guidelines, it can be concluded that there is a significant difference in the results of post-test 1 and post-test 2. It means that there is an effect of using cooperative learning Jigsaw with genre-based in improving students' competence in writing explanation text in class XI MIPA 10 at State Senior High School 2 Semarang in 2022/2023. This is in line with the finding of Isgiarno et al. (2020), who stated that the students could develop their ideas into paragraphs well from the result of exchanging ideas from the expert group to the jigsaw group with 100% reaching the criteria of success.

Students' Responses to the Implementation of Jigsaw

In this study, researchers randomly selected 10 respondents who were given a questionnaire after the lesson was over. The questionnaire is sent via the "*Zoho*" survey application. Respondents from this study were students in class XI MIPA 10. The results of distributing the questionnaire were analyzed based on four indicators, that are (1) student satisfaction with the implementation of Jigsaw cooperative learning, (2) students' interest in participating in Jigsaw cooperative learning, (3) student interest in Jigsaw type cooperative learning, and (4) student motivation in participating in Jigsaw type cooperative learning seen from responsibility and discipline. The four indicators were developed into 20 questions which were distributed to class XI MIPA 10 students. The response results from the student questionnaire were as follows:

Indicator	Number	(%)	Category
Student satisfaction	1, 2, 3 dan 4	80%	Good
Students' interest	5,6,16,17, 18,19,dan 20	91%	Very Good
Student interest	7,8,9,10,1 1, dan 12	90%	Very Good
Student motivation	13,14, dan 15	87%	Very Good

Table 8. Students' Questionnaire Result

Based on the table above, students' responses to the implementation of the Jigsaw technique to write explanation text show that the first indicator obtained a percentage of 80% in the good category. The second, third, and fourth indicators obtained respective percentages of 91%, 90%, and 87%, these three indicators were in the very good category. The results of this analysis show that most of the students have great interest and motivation towards cooperative learning Jigsaw in explanation text material. The good category in student satisfaction with Jigsaw cooperative learning will result in easier student learning activities so that student learning outcomes will also be better (Andriani et al., 2021). However, the indicator of student satisfaction with the results of this category is good enough to be an evaluation for the teacher. This is because a small number of students still find it difficult to learn explanation text in English because the teacher uses English in explaining and giving instructions, so students do not understand the explanation conveyed by the teacher. For this reason, researchers know from an open questionnaire in the form of reflection and evaluation of learning.

From the results of the student questionnaire, it can be concluded that the Jigsaw type of cooperative learning in explanation text material received a good response from the students and was able to make students interested and have a good interest in learning so that students got good learning outcomes too. The questionnaire showed that most of the students considered that Jigsaw was good to help them organize their ideas for writing. Moreover, they were happy to be able to share their ideas with their Jigsaw group. It is in line with Mengduo

and Xiaoling (2010), who stated that jigsaw is an activity that creates interaction by providing students with an opportunity to help each other build comprehension actively. It is also in line with Aronson (1978), who stated that the advantage of the jigsaw technique is that students interact with others in getting full information, and it increases their social skills in communicating and delivering their ideas to other members of the group.

4. CONCLUSION

Based on the result of this study, it can be concluded that the application of Cooperative Learning Jigsaw improved students' skills in writing explanation text in eleventh grade. The students were successful in working cooperatively and individually for writing explanation texts. Also, they could generate and develop ideas, select more appropriate tenses and vocabulary, and use correct spelling and punctuation. The result of this study has reached the criteria for success which were proven by the fact that there is an improvement in students' learning outcome average percentage that is 22% for pre-test, 36% for post-test 1, and 89% for post-test 2 of the students passed the minimum passing grade (*Kriteria Ketuntasan Minimal/*KKM) in the cycle II. Moreover, the success improvement can be known from the mean score of each test, that is the mean of pre-test (57.39) and post-test 1 (69.11) less than *"KKM",* but the mean of final test / post-test 2 (82.83) exceeds the minimum passing grade (*KKM=*75). Furthermore, most of the students gave positive responses to the implementation of Jigsaw. There were 9 out of 10 students or 90% said that using the Jigsaw was able to increase their interest in learning explanation text material. They are always enthusiastic about listening to the teacher's explanation, thereby increasing their ability to write explanation texts.

The results of this study provide some benefits and give some information to English teachers about the use of Jigsaw in Senior High School for improving students' writing skills.

Accordingly, it is recommended that English teachers consider using Jigsaw to improve the teaching-learning process, especially for an explanation text. For future researchers, the result of this study can be used as a reference to research improving students' skills in writing. Future researchers can also examine the use of Jigsaw for other skills such as listening, speaking, or reading.

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