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Using Google Docs as a Collaborative Writing Medium for Empowering Senior High School Students' Writing Skill

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ABSTRACT

This study investigates the effect of using Google Docs online learning media in conjunction with collaborative writing strategies on high school students' writing skill. The study took place at Surabaya's high schools, with 16 tenth-grade students participating. The research is a pre-experimental design with a one-group pretest and posttest design. According to research findings, students' scores improved significantly following treatment compared to their pre-treatment scores. Cohen's d was used to determine the magnitude of the effects created by this study, and it was discovered that the effects were quite significant. The results for the second research question indicated that the learning process was done successfully. Students' attitudes towards the treatment also showed that most groups performed well during the activity. Furthermore, the third research question results indicated that the combination of Google Docs and collaborative writing methods elicited favorable responses from students. Thus, collaborative writing strategies utilizing Google Docs as a medium can assist Senior High School students in writing more effectively.

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1. INTRODUCTION

English is known as an international language that has the role of a communication tool for many people worldwide. According to Ngainun (2017), it is necessary to describe communication skills as the act of transmitting ideas or information from one person to another through the use of particular mediums. There are four basic abilities that students need to master in order to be able to communicate effectively in English that is taught in English education. One of the essential skills in learning English is writing (Shegay et al., 2020). Writing skill allows students to express any ideas, feelings, and even their experiences in the form of text (Pratiwi, 2015). Students could share ideas, feelings, and thoughts to be understood by others through writing (Novariana et al., 2018; Indrilla, 2018). Therefore, writing can help students play a productive role in society and improve their work skills for the future because of its importance in academics (Imane, 2015; Apsari, 2018).

As a progressive activity, writing requires a long time and processes to finish. According to Brown, as cited in Apsari (2018), students must understand various steps to produce a final writing product. Harmer (2004) stated that there are four stages in writing. Those four stages include Planning, Drafting, Editing (Reflecting and Revising), and Final version. Similarly, Williams et al. (2005) also proposed a series of writing processes, but it has seven stages. It starts with brainstorming as the first stage. In this stage, the writers decide what topic to use in their writing and followed by the second stage, which is making notes. The next step is where the writers organize their ideas. After the writers have their ideas together, they have to draft. The draft they produce then goes to the next stage, the editing stage. The editing stage allows the writers to create another draft by revising it. Finally, the writers need to do proofreading as the last stage in the process of writing. In producing a writing piece, students need to be aware of the writing aspects which their writing final products are assessed to get satisfactory results. According to Jacob (1981), there are five aspects of writing that students need to be aware of. The aspects include Content, Organization, Language use (Grammar), Vocabulary, and Mechanics.

The stages and the aspects of writing mentioned above make writing seems to be a complex activity. Therefore, writing lessons should be taught to students in earnest at their schools. Particularly in schools that ask students to write essays as part of their examinations. A school that used this type of test employs the Cambridge IGCSE curriculum. Cambridge IGCSE promotes learners to engage with various disciplines and make connections between them, which helps to improve their critical thinking, investigation, and problem-solving abilities (Cambridge Assessment International Education, n.d.). This curriculum requires students to deal with two papers in the exam, one of them is writing an essay. In writing essays, students are expected to deal with tasks that require critical thinking skills (Al Jumaily, 2021).

One of the writing materials that may be the task for students' IGCSE Cambridge examinations is article writing. Articles are texts that express opinions or facts. An article aims to persuade the reader that the opening and closing paragraphs will outline the writer's memorably viewpoint. An article's language is determined by its purpose and audience; normally, the article's vocabulary matches the topic and audience. A unique, engaging title will entice people to read the entire article. Other than that, everyday idioms or phrases may be employed to accentuate a point. Rhetorical questions and alliteration are two persuasive tactics that might influence the reader to agree with the text's point of view. Litha said on his website (2019) that the structure of an article relies on its category. An article could be two-sided or one-sided. The structure of the two-sided article is as follows: Introduction (1st paragraph); Advantages (2nd paragraph); Disadvantages (3rd paragraph); and Conclusion (4th

paragraph). Meanwhile, a one-sided essay may comprise four sections: an introduction (1st paragraph), a counter-argument (for both the second and third paragraphs), an argument and a counter-argument (4th paragraph), and a conclusion (5th paragraph).

However, according to the researcher of this study, who had an opportunity to teach in one of the schools implementing the IGCSE Cambridge curriculum, some students in the schools that use the curriculum nevertheless struggle with writing. It is demonstrated by some of the student's inability to earn passing grades on writing assignments. A student's inability to write well might be attributed to various factors. Latifah & Ulfa (2020) noted that most schools do not provide students with sufficient exposure to a writing activity. Teachers often instruct students to read texts and answer questions rather than write essays in most cases. It may be because, among all English skills, the most difficult one is writing (Al Murshidi, 2014). The complexity of the writing process may lead EFL students to face problems. According to Novariana et al., (2018), students face problems in their writing. The problem is classified into internal problems: grammatical problems and lack of motivation, and external issues: the teacher gives no feedback. Cooley and Lewkowicz (1995) stated that students might also struggle to choose what writing style to use, organize and express their ideas (as cited in Karimian Shirejini & Derakhshan, 2020). The lack of interactive and engaging teaching methods may be another reason for the struggle experienced by students. To get students to improve their writing skills, teachers need to use new and modern methods rather than sticking to traditional techniques (Ariyanti & Fitriana, 2017).

The advancement of technology has enabled English teachers to overcome students' difficulties with writing skills. Numerous web platforms suitable for use as instructional media are available and easily accessible to English teachers. Google Docs is one of them. It is a free web-based collaboration platform that offers an engaging, intuitive user interface and a slew of essential features for real-time collaboration and asynchronous workgroups (Firth and Mesureur, 2011; Zhou et al., 2021). The features of this platform can be used in supporting the implementation of collaborative writing activities in class (Muthia, 2018). It has features for document sharing, viewing, highlighting, and editing (Ebadi & Rahimi, 2019). Suwantarathip and Wichadee (2014) state that students also have access to view the changes they make in Google Docs. However, to work synchronously in Google docs, students need to have an internet connection (Firth and Mesureur, 2011).

The use of Google Docs provides students with many features to collaborate. There is a writing method called collaborative writing supporting such useful tools for the writing activity in class. Collaborative writing refers to student collaboration in a pair or a group to produce an excellent piece of writing (Sukirman, 2016). Based on the overview of the collaborative writing process from UNC-Chapel Hill Writing Center (2021), there are five main steps to collaborate in writing. Those steps are Pre-writing Process, Planning and Logistics, Research/Data Collection, Drafting, and the last step is the series of Revising, Editing and Proofreading. By using a collaborative writing method, students can get some benefits. Müller and Garofalo (2011) found that collaborative writing boosted student learning. As a result of collaboration and communication, it improves students' social skills. The second concern is that students have challenges when working alone, generating stress and inefficient use of time. So, they can share the load and strive to conquer it with their classmate as their peer. Third, the group members' encouragement inspires students to learn more effectively. Fourth, simultaneous rewriting can improve writing content. Finally, collaborative writing allows group members to share their knowledge of structure and language, helping them comprehend it better. Other than that, Sukirman (2016) asserted that participating in this writing activity provides an opportunity for students to stimulate their reflection, knowledge sharing, and critical thinking.

Recent studies on the same issue demonstrate the value of collaborative writing methods utilizing the Google Docs platform. Shehadeh (2011) used a pretest-posttest design to compare the performance of low intermediate EFL students writing collaboratively and independently. This study demonstrated that students who worked collaboratively on their writing task had much better text quality than students who worked alone. Shehadeh also conducted questionnaires for the students, with surprising results. Similarly, Latifah and Ulfa (2020) conducted a quasi-experimental study to determine the efficacy of collaborative writing in boosting the writing skills of senior high school students using Covariance analysis (ANCOVA). The data suggested that the experimental groups outperformed the control groups in test scores. By means collaborative writing appears to be more effective than conventional techniques. The use of Google Docs as the medium that utilizes collaborative writing method in class, there is a previous study conducted by Zhou et al. (2012). They found that students were able to use the Google Docs platform in their collaborative group projects because they could use this platform to help them brainstorm, plan, and organize their writing work together.

Due to a lack of prior research on adopting the collaborative writing method using Google Docs in IGCSE Cambridge Curriculum schools, the researcher reasoned that this study should be undertaken in a senior high school that also implements the IGCSE Cambridge Curriculum.

This study aims to explore the use of Google Docs for collaborative writing to help improve IGCSE Cambridge Curriculum Senior High School Students' writing abilities. The findings of this study are intended to provide a significant contribution to students and teachers and assist students in achieving improved learning outcomes. If this is the case, this study will aid the teacher in determining the most effective strategy for teaching writing. Taking into account the background stated above, the researcher developed the following research questions:

1. How does the teacher and students use Google Docs as a collaborative writing medium in teaching and learning process?
2. What is the improvement of students' writing skills after implementing Google Docs as a medium in collaborative writing activity?
3. What are the senior high school students' perception of implementing Google Docs as a medium in collaborative writing activity?

2. METHODS

The researcher employed a pre-experimental design with a single group pretest and posttest to accomplish the study's objective. All the data required for this research were in the form of quantitative data. The subjects of this study were tenth-grade Science students from one of Surabaya's senior high schools. The class consisted of 16 students. The data collection process took place virtually between February and March of 2022. Prior to data collection, the researcher developed research instruments to address each research question. The researcher prepared a lesson plan, observation sheet, and group task used for the treatment for answering the first research question. For the second research question, students' scores in both pretest and posttest were required. Meanwhile, the third research question used questionnaires to obtain students' perceptions toward the use of the method and medium they had taken in this research.

In order to help measure the students' writing final product, the researcher also prepared a writing evaluation rubric, which was adapted from two separate sources: Dastgeer & Tanveer Afzal (2015) and Silva (2007). These two rubrics were chosen, then combined with a rubric representing writing aspects, such as Content, Organization, Vocabulary, Grammar, and Mechanic (Jacob, 1981).

Additionally, each part of the rubric was assigned a score ranging from less than 5 (poor) to 20. (excellent). "Poor" indicates that students received low grades for their final writing product. On the other hand, “Excellent" suggests that students were able to produce an excellent piece of writing.

The researcher began collecting data by administering an online pre-test to students via Google Form. The type of the written test was essay since the lesson material was about article writing. Students were expected to write a two-sided school magazine article about the "Self-service Minimarket in School." The article should be between 100 and 150 words in length, and the language used should be appropriate for a school magazine. The students had three days to complete the assignment. Following the submission of all students' work, the teacher examines their performance using a scoring rubric, a method used to gauge a student's proficiency in a foreign language course. The test procedure for both pre-test and post-test was quite identical, as it shown in the table below:

Table 1. Task Procedures for Student’s Writing Test

No.	Steps	Description
1.	Students accessed the link given by the researcher and logged in to their Gmail account.	The link for pre-test was different to the post-test one.
2.	Students took the test by writing a school magazine article about “Self-service Minimarket in School” In the link, there were sections displayed, such as: - **Instructions section,** containing the required essay topic, a brief explanation of how the assignment is to be completed, and the submission deadline. - **Identity section** which was consisted of the field for name and registration number. - **Article structure section.** This section had four sub-sections based on two-sided article structure (Introduction, Advantages, Disadvantages, and Coclusion).	For the pre-test, students were required to finish the task based on their prior knowledge. Meanwhile, Since the post-test was administered after the treatment, students were required to write the essay in accordance with the guidelines (generic structures and language features).
3.	Students submitted their works by clicking the submit button.	Deadline: 3 days.

According to Hasanah (2012), there are several phases that the teacher should follow when administering treatment, including an overview, training, and activity. The researcher conducted the treatment online throughout three meetings. The treatment material concerned the creation of a two-sided article. The teacher began by providing a brief outline of creating a two-sided article properly. Then, during the training phase, students were given various exercises relevant to the topics discussed previously. Finally, the teacher engaged the students in real practice, collaborative writing. The students were instructed to produce an article on the Google Docs platform collaboratively. Prior to the activity, the researcher supplied each group with a link to Google Docs. Within each link, the researcher included instructions intended to assist students in completing their assignments. During the activity, the researcher observed the situation of the class, including teacher and students' behavior, using two different observation checklists.

The first observational tool used in this study was observation checklists, which focused on every meeting conducted during the treatment period. Since there were three meetings, the observation sheet was created for three. The second observation checklist, which assessed students' attitudes, was created based on the number of students' groups. The total number of students in the class being observed were 16 students, and each group consisted of four students. Therefore, the researcher employed four observation checklists. All of them comprise three key assessment aspects: collaboration, communication, and coordination. These three components abbreviated 3C, serve to analyze students' attitudes toward collaborative activities. (2012) explained the definition of each 3C component in their article. Communication can be described as the act of conveying ideas, opinions, and information through speech, writing, or signs. The harmonic adjustment or interaction of several individuals or things to achieve a goal or effect is referred to as coordination. Meanwhile, collaboration entails joining up to execute a job and exploring alternate techniques to resolve complex challenges with one another. According to Muthia (2018), the criteria for evaluating students' attitudes are listed in the table below:

Table 2. Criteria for Observation Checklist 2

Aspect	Description
Collaboration/ Cooperation	Students contribute to the drafting process by adding a lot of ideas.
Communication	Students communicate with their groupmates about the process of creating an article.
Coordination	Students show sensitivity by correcting the writing errors made by their teammates.

The success requirements for the treatment can be determined from the process indicators that have been derived using the formula below:

$$\text{Result} = \frac{\text{Total score}}{\text{Max. score}} \text{ x } 100\%$$

According to Arikunto & Jabar (2014), maximum conditions are likely to be computed 100%. If researchers employ five categories of value, then between 1% and 100% of their worth is equally divided, resulting in the following categories:

1. Point 5 (Excellent), if the score reaches 81%-100%
2. Point 4 (Good), if the score reaches 61%-80%
3. Point 3 (Fair), if the score reaches 41%-60%
4. Point 2 (Poor), if the score reaches 21%-40%
5. Point 1 (Bad), if the score reaches <21%

After all the activities had been done, the researcher then gave students a posttest. The instruction for the posttest was the same as the pretest one as well as the procedure. The students' pretest and posttest scores were used to determine the significant differences between the tests administered at the start and end of the class. The researcher used the T-test formula in the IBM SPSS 27 program to analyze the data to answer the first research question. Before computing the data, the researcher must do a normality test using the SPSS program. The normality test determines whether or not the data are normally distributed. Due to the small sample size (N<50) in this study, the normality test was calculated using Shapiro-Wilk. The criterion was as follows: if the result is (> 0.05), the data are

normal (Pallant, 2010).

After determining normality, the researcher used the T-Test technique to assess the effect of implementing Google Docs as a collaborative medium in writing class. Because the two variables were from the same subject, the data were evaluated using the Paired Sample T-Test.

The following criteria were used to interpret the effect:

a. If the Significant value (Sig.) is less than .05 (Sig. <.05), it means that there is an effect between the independent variable to the dependent variable.
b. If the Significant value (Sig.) is more than .05 (Sig. >.05), it means that there is no effect between the independent variable to the dependent variable.

The researcher determined the conclusion by analyzing the effect of Google Docs as a collaborative writing medium on students' writing scores size using Cohen's d. The following table illustrates the interpretation:

Table 3. Effect Size's Interpretations

Effect Size's score	**Interpretations**
d = 0.2	small effect
d = 0.5	moderate effect
d = 0.8	large effect

The data for the third research topic, which investigated how students evaluate the use of Google Docs as a collaborative writing medium, was gathered through a questionnaire. The questionnaire was in the form of a Likert scale, with all items in the form of closed questions. Each question had four responses: Strongly Agree, agree (which indicates favorable perceptions), Disagree, and Strongly Disagree (unfavorable perceptions). The following table shows the score distribution for each option:

Table 4. Likert scale

Option	**Score**
Strongly Agree	4
Agree	3
Disagree	2
Strongly Disagree	1

The questionnaire consisted of 13 items in total. The questions were classified into many categories, as stated in the table below:

Table 5. Questionnaire Specification

No.	**Category**	**Indicator numbers**
1.	Perceived usefulness	1,2
2.	Sharing Process	3,4
3.	Attitude	5,6,7
4.	Perceived resources	8,9,10,11
5.	System Usage	12,13

This questionnaire effectively elicited students' thoughts and impressions about Google Docs, including whether this medium was acceptable for supporting them with collaborative work and its future prospective application.

Before collecting the data for the questionnaire, the researcher measures the research instrument's consistency by analyzing its reliability. The researcher conducted a reliability test using Cronbach's Alpha Formula in the IBM SPSS program. According to Cohen (2007), the instrument is classified as reliable if The Cronbach's Alpha level is .70 or more. In line with Cohen (2007), the instrument's level was .917, which was more than .70 (Cronbach's Alpha > .70). Thus, this questionnaire was reliable.

Table 6. Reliability Statics

Cronbach's Alpha	N of Items
.917	13

The researcher also conducted a validity test to measure the accuracy of the questionnaire used. A validity test was performed using the Correlation test in IBM SPSS Program. The criteria that were used to interpret the validity were:

a. Correlation is significant at the 0.05 level (2-tailed).
b. Correlation is significant at the 0.01 level (1-tailed).

Table 7. Validity Test

	Total Amount
A1	.810**
A2	.583*
B1	.650**
B2	.683**
C1	.714**
C2	.589*
C3	.793**
D1	.676**
D2	.745**
D3	.553*
D4	.702**
E1	.881**
E2	.857**
Total Amount	1

As shown in the table 7, all of the questionnaire items were valid. That so, the questionnaire could be used for answering research question number three.

3. RESULTS/FINDINGS

The Result of Observation during Treatment

Before starting the discussion about the results of other two research questions already alluded to, the researcher would share the results of observations when treatment was administered to the students in the class.

Table 8. The Result of Observation Checklist 1

Meeting	Subject/Number of activities	Total Scores	Maximum Score	Success Rate
1	Teacher/18	83	90	92%
	Student/19	87	95	92%
	Mean			**92%**
2	Teacher/9	45	45	100%
	Student/4	15	20	75%
	Mean			**88%**
3	Teacher/8	40	40	100%
	Student/6	22	30	73%
	Mean			**87%**

The table 8 above summarizes the findings from the observation phase of the learning process. As stated in the table 8, each meeting has various activities conducted by either the teacher or the students, resulting in various results. However, to determine whether the learning process was successful, the researcher chose to focus on the mean scores for each meeting.

As seen in the table 8 the first meeting was 92% successful, the second was 88% successful, and the third was 87% successful. According to Arikunto & Jabar (2014), all meetings were successful because the total scores ranged from 81% to 100%.

Table 9. The Result of Observation Checklist 2

Group Members	SCORE		
	Assessment Aspect		
	Collaboration/ Cooperation	Communication	Coordination
Group 1			
AADN	5	4	2
APA	5	4	2
ARF	5	4	2
FBA	5	4	2
Total	20	16	8
Success Rate	100%	80%	40%
Group 2			
JAK	1	1	1
JS	5	4	1
JCF	5	4	1
MSFA	1	1	1
Total	12	10	4

Success Rate	60%	50%	20%
Group 3			
MTY	5	4	2
MRDF	5	4	2
NIJ	5	4	2
PDM	5	4	2
Total	20	16	8
Success Rate	100%	80%	40%
Group 4			
RRA	5	4	1
SFEH	5	4	1
TA	5	4	1
ZO	5	4	1
Total	20	16	4
Success Rate	100%	80%	20%

The table 9 presents the observation of students' attitudes during the collaborative activity. The students were assessed individually even though they were in groups. It can be seen that each student's performance in a group varies, with some working at their maximum capacity and others falling short. When it comes to the collaboration aspect, groups 1, 3, and 4 score the highest, at 100%, which suggests that each group member works to their full potential. In contrast, group 2's success rate was just 60% since not all members worked to their full potential. For the communication aspect, the same as the previous one, groups 1, 3, and 4 had the same success rate, 80%. Group 2 could only perform their best at a 50% rate. Then the last one is the coordination aspect. Groups 1 and 3 shared the same success rate, 40%. Groups 2 and 4 share the same success rate, 20%.

The researcher selected to focus on the mean scores for each group to determine the conclusion about their performance. The mean score for groups 1 and 3 is the same, at 73%. The mean score for group 2 is 43%, while the mean score for group 4 is 67%. According to Arikunto & Jabar (2014), group 2 is the only group that performed fairly. Meanwhile, the other three groups were classified as 'good.'

The Improvement of Students' Writing

The data for the first research question, which examined the effect of using Google Docs as a collaborative writing medium, comprised pretest and posttest scores for students. The scores were as follows:

Table 10. Students' Pretest and Posttest Scores

No	Student Name	Score	
		Pre-test	Post-test
1	AADN	80	87
2	APA	74	82
3	ARF	77	85
4	FBA	85	90

5	JAK	82	87
6	JS	83	89
7	JCF	85	89
8	MSFA	78	86
9	MTY	80	87
10	MRDF	75	86
11	NIJ	80	87
12	PDM	82	90
13	RRA	80	90
14	SFEH	91	93
15	TA	84	87
16	ZO	86	94

Prior to obtaining the outcome using the t-test formula, the researcher determined the normality of the data distribution. Since the sample size in this study is less than 50 (N<50), the Shapiro-Wilk formula was employed to determine the data distribution. As a result of this calculation, the data could be normally distributed or abnormally distributed. Then, the results were normal, with a significant value (Sig.) of the pretest score was .903, while for the posttest was .492. according to the criteria outlines in the previous chapter, this study's data distribution was considered to be normally distributed. As a result, the researcher continued to evaluate the study's impact by employing the paired sample t-test method of analysis.

Table 11. Test of Normality

	Shapiro-Wilk		
	Statistic	df	Sig.
pretest	.974	16	.903
posttest	.950	16	.492

Prior to presenting the paired sample t-test results, the researcher offered a descriptive statistic for each student's score. It is displayed the maximum and minimum values for both pre- and posttest scores, as well as the mean and standard deviation. The following table summarizes the descriptive data for the entire score:

Table 12. Descriptive Statics

	N	Minimum	Maximum	Mean	Std. Deviation
Pretest	16	74.00	91.00	81.3750	4.34933
Posttest	16	82.00	94.00	88.0625	2.97700
Valid N (listwise)	16				

As suggested by the statistical description table 12. is shown above, the mean posttest score, which was 88.0625, was found to be much higher than the pretest one, which showed an 81.3750 mean score. Therefore, it can be concluded that students' writing scores significantly increased.

Table 13. Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	pre_test - post_test	-6.68750	2.41437	.60359	-7.97403	-5.40097	-11.080	15	.000

From the paired sample t-test result above, t = -11.080 and *p-value* (sig. 2-tailed) = .000 (less than 0.05). It can be concluded that there is a significant difference in the mean score of the pretest and posttest, in which the mean of the posttest is significantly higher than the pretest (-6.68750).

Table 14. Paired Samples Effect Sizes

			Standardizer[a]	Point Estimate
Pair 1	pre_test - post_test	Cohen's d	2.414	-2.770

The effect of Google Docs as a collaborative writing medium on students' writing skill is shown in the table 14. is -2.770, which can be considered 2.7. According to Cohen's d criteria, if d is larger than 0.8, the size effect of the study is very large. As a result, the use of Google Docs as a collaborative writing medium is effective and has a significant impact on improving students' writing skills.

Students' Perception of the Use of Google Docs as a Collaborative Writing Medium

The third research question's data came from a questionnaire. The questionnaire was designed to assess whether students found using Google Docs as a Collaborative Writing tool useful. The researcher shared the questionnaire following the pretest and posttest, via Google Forms.

1. Perceived Usefulness

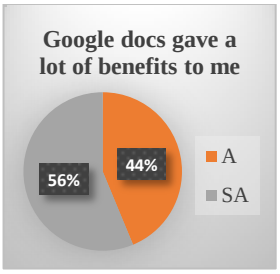


Chart 1. Questionnaire Item 1

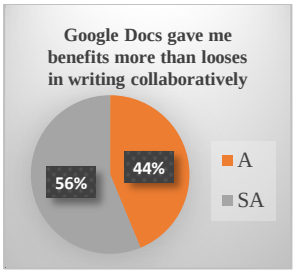


Chart 2. Questionnaire Item 2

In both categories of perceived usefulness, 44% of students selected strongly agree. While 56% of them opted agree.

2. Sharing Process

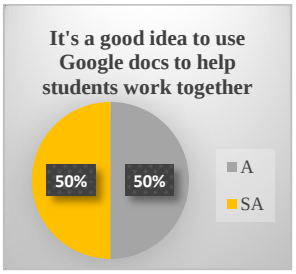




Chart 3. Questionnaire Item 3 Chart 4. Questionnaire Item 4

In the second category, the first statement received 3 kinds of answers, which were strongly agreed, with 37% of students choosing it, 44% of students agreeing with it, and unfortunately, 19% disagreed. Then, for the second statement, 62% of the students strongly agreed with it, and the other 38% agreed.

3. Attitude



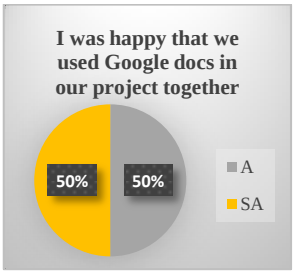


Chart 5. Questionnaire Item 5 Chart 6. Questionnaire Item 6

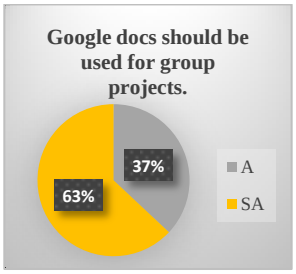


Chart 7. Questionnaire Item 7

In the third category, there were three statements. In the first and second, the percentage of students who chose agree was 50%, and those who chose the strongly agree option were 50%. For the third statement, 63% of students selected strongly agree, while 37% voted to agree.

4. Perceived Resources

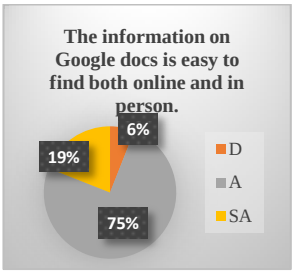


Chart 8. Questionnaire Item 8

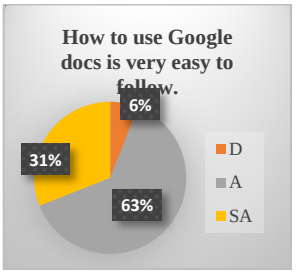


Chart 9. Questionnaire Item 9

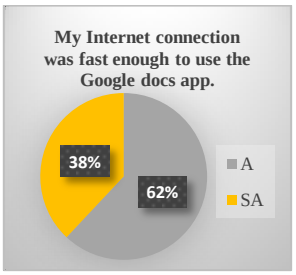


Chart 10. Questionnaire Item 10

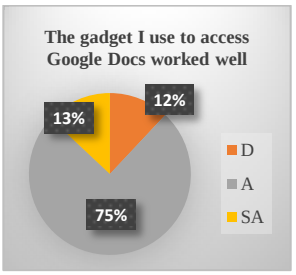


Chart 11. Questionnaire Item 11

There were four statements in total in the fourth category, perceived resources. The outcome for the first statement indicated that 19% of students strongly agreed with it, 75% agreed, and 6% disagreed. Similarly, the second statement resulted in three different answers. 31% of students selected the strongly agree option, 63% selected the agree option, and 6% selected the disagree option. For the third statement, 62% of students agreed, and 38% strongly agreed. Finally, for the final statement in this category, 13% of students chose strongly agree, 75% agreed, and 12% disagreed.

5. System Usage

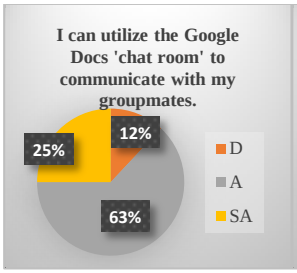


Chart 12. Questionnaire Item 12

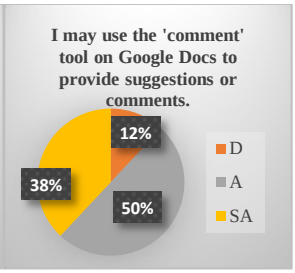


Chart 13. Questionnaire Item 13

Both statements obtained three distinct responses in the final category. In the first statement, 25% of students selected strongly agree, 63% selected agree, and 12% selected disagree.

4. DISCUSSION

This section provides more contexts for the previous results section. Concerning the outcomes of the first research question, which discussed about the result of observation during the treatment. It indicated that the learning process was completed excellently since all the meetings' success rates ranged between 81%-100% (Arikunto & Jabar, 2014). The outcome of the observational instrument, which examined students' attitudes during treatment, indicated that the majority of groups performed

well during the joint activity. It is demonstrated by the average success rate of each group that just one group performed fairly, while the others did nicely.

A seamless learning process is likely to have an effect on the increase in writing students' scores. In the result of second research question, researcher discovered that there is an improvement. It is visible when students' posttest scores are compared to their pretest scores. Their mean posttest score was 88.0625, which was higher than their mean pretest score of 81.3750. Additionally, the t-test value was greater than the t-table value (11.080 >1.753). The effect size of this study was also indicated a very large effect (2.77>0.8). One may argue that using Google Docs as a collaborative medium for students' writing activities resulted in significantly changing their scores. This suggested that the treatment was extremely beneficial for the students because it enabled them to achieve a higher score and pass the school's minimum score (78). This result was in line with the previous study conducted by Muthia (2018), who found that implementing collaborative writing techniques on Google Docs improved students' writing scores. Another study from Zioga & Bikos (2020), which also used a paired-sample t-test, showed a statistically significant difference between students' pretest and posttests scores after using Google Docs as a collaborative writing medium. Seyyedrezaie et al., (2016) also found similar findings in their study.

The conclusion of the third research question corroborated prior research findings (e.g., Seyyedrezaie et al., 2016; Sudrajat & Purnawarman, 2019) on the students' views of the treatment. The majority of students expressed enthusiasm about using Google Docs as a collaborative writing tool. Similar to the study of Seyyedrezaie et al., (2016), the students considered that Google docs brought many benefits to them, especially while partaking in a collaborative writing activity. They also found that using the Google Docs platform for their collaborative activity was exciting, and it was indeed for working on a project together with friends. The features offered on Google docs assisted the majority of the students in working efficiently in groups. In contrast to Metilia & Fitrawati's (2018) study, which revealed a variety of obstacles students face when accessing Google Docs, the results of this study revealed that the majority of students claimed they had no problems using Google Docs because their gadgets and internet connection worked properly. The material necessary to understand using Google Docs was easily accessible, and the students picked it up quickly. Sudrajat & Purnawarman (2019) have reported similar findings of the ease with which Google Docs may be accessed and its intuitive and easy-to-follow interface.

5. CONCLUSION

The researcher conducted this research at one of the Senior High schools in Surabaya. There were 16 participants, and all of them were the tenth grader. The school implemented the IGCSE Cambridge Curriculum. The purpose of this study is to determine the effect of using Google Docs as a collaborative tool on students' writing activities. The researcher used observational sheets, writing tests, and questionnaire as the tool for answering each research question. According to the result of observational sheets, the process of teaching and learning during the treatment was done successfully. The students also shown great performances in groups during the activity. In the result of tests given to the students before and after the treatment, there was a significant difference between students' pretest and posttest scores. There was also a large effect on the students' writing scores by implementing Google Docs as a collaborative writing medium. It was also supported by student responses taken from questionnaires, which indicated that most students respond favorably to the use of Google docs as a collaboration medium in their writing activities. Thus, Google Docs and the Collaborative Writing method are ideal for use in the classroom with EFL students.

The researcher finally intends to make some recommendations on using Google Docs and Collaborative Writing in the lesson planning. This suggestion is designed for people who are involved in EFL, such as teachers or future researchers interested in implementing Google Docs as a collaborative writing medium.

1. For the teachers

   Nowadays, collaborative learning is essential to be implemented in class. In an English language lesson, all skills can implement the collaborative activity. In the writing lesson, the researcher suggests the teacher use a collaborative writing method to help the students learn easily. The teacher also needs to apply new and modern learning medium that is interesting to students. Google Docs may be one of the options to be used as a medium in teaching and learning writing. The combination between the collaborative writing method and Google Docs as the medium may help students improve their writing skills, as they can work together with their classmates. By working in a group, students will be more motivated to learn and even challenge themselves to solve problem together.

2. For the future researchers

   The researcher was quite doubtful of this research's findings. While the data indicate that students' grades improved following treatment, the underlying cause of such gains is not always the treatment itself. Therefore, future researchers may perform quasi-experimental research on the same topic as this study. Further research will be more effective if conducted in person, allowing the teacher to monitor firsthand student performance. Additionally, future researchers may perform an open-ended questionnaire or an interview to elicit insight into students' attitudes.

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