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Students' Perceived Comfort in Using Google Docs for Online Synchronous Collaborative Writing

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Introduction

Writing has been claimed as a solitary activity, long before the acceptance of online synchronous collaborative writing (henceforth, SCW). Notably, online collaborative writing is considered as a shifting view of writing from product-based to process-based writing (Ardiasih et al., 2019). In process-based writing, several stages should be performed recursively allowing the writer to have a constant cycle of writing including generating ideas, structuring, drafting, reviewing, focusing, and evaluating. Further, in collaborative writing, students are expected to demonstrate an improvement in their writing projects through multiple drafts by receiving feedback from the teacher, other students or through automated systems.

Online SCW refers to "the social and technical act of real-time planning, drafting, and revising a text with others using a digital writing platform" (Krishnan et al., 2019). As a theoretical basis, online collaborative writing is supported by Second Language Acquisition (SLA). It includes two key processes, namely, interaction and text production, which are considered significant for language learning according to cognitive and sociocultural theories (Daniel & Christopher, 2018; Jin et al., 2020; Storch, 2019). Cognitive theories of SLA perceive learner's interaction with each other as providing chances to discuss meaning (Long, 1981) and notice language forms. Vygotsky's sociocultural theory views all the development of cognition, including learning the language, as interaction happening between novice learners and more advance learners. In writing classrooms, the more able peers and teacher provide finely adjusted assistance, called "scaffolding" to the novice learners (Wang et al., 2011). Through this assistance, the novice learners internalized some feedback given by the teacher or more able peers so it facilitates a better understanding in terms of writing and its supporting components. This will offer academic and social support in the learning needed by students. When different performance level students work together in achieving the desired goal, they are not merely in charge of their own learning process but are also responsible for the learning process of their peers.

The integration of collaborative writing and technology for writing instruction has greatly appealed to many EFL instructors and educators. This is because technology integration in writing is considered a good way to overcoming time and space restriction problems found in the traditional environment. The transformation of literacy practices began at the advent of Web2.0 applications (e.g., blogs, wikis, and Google Docs) which facilitate and provide ease for students in making and sharing, and the web 2.0 applications are readily acceptable as well (Storch, 2019). A free web-based platform, called Google Docs, facilitates collaborative writing and cooperative learning to take place.

Although the use of Google Docs in writing instruction has not been explored as much as other web-based applications (Alharbi, 2020; Li, 2018), many scholars believe that Google Docs enables students to collaborate with their peer as some features are available to support more communicative and interactive processes during the learning process (Abrams, 2016; Cho, 2017; Krishnan et al., 2019). Google Docs also promises greater language learning and a better writing outcome (Woodrich & Fan, 2017; Zioga & Bikos, 2020). During the writing process, Google Docs' affordances were reported to provide some tools for commenting and feedback, editing and modifying the draft, and tracing the history of current changes made in written texts (Miin et al., 2019).

Studies regarding the students' perspective of using computer-mediated collaborative writing have been remarkable, including its benefits (Bikowski & Vithanage, 2016; Leight et al., 2010; Zhou et al., 2012) and its challenges (Ishtaiwa & Aburezeq, 2015; Martínez-Carrasco, 2018), yet those studies have not focused on the use of the Google Docs application for online synchronous collaborative writing. None have looked directly at how this new tool, Google Docs, influenced participation, nor did any of the researchers examine the level of comfort of the individual students. Investigating the students' perceived comfort is necessary to avoid their resistance in a collaborative learning setting (Stover & Holland, 2018). To be exact, this study is investigating (1) the students' perceived comfort in using Google Docs for online SCW; (2) the students' perceived comfort based on the gender; and (3) the students' perspective toward their experience in using Google Docs for online SCW. Analysing those factors is important since it will affect the students' experience in their learning process. Furthermore, this research seeks to fill the void in the relevant literature concerning the use of Google Docs in the teaching of writing within the Indonesian context.

Method

Respondents

This study employed purposive-convenience sampling of 37 first-year students of the English Education Language Department who joined the "Sentence Building" course during the academic year 2019/2020. These students were mainly classified with intermediate writing skills. Furthermore, this study took place in one of the reputable universities in Indonesia which is located in East Java, Indonesia.

Data Collection and Data Analysis

The Student's Perceived Comfort Survey was administrated online. 10 close-ended questions and 3 open-ended questions were adapted from Woodrich and Fan (2017). The students were asked to create sentences in a team by building off each other's text at the same time using Google Docs. They were drafting, creating sentences, reviewing and revising in a synchronous online mode. After finishing their writing, the students were asked to fill in a confidential online survey. The quantitative analysis was done to analyse the average of each item from the close-ended questions using SPSS. Additionally, the Kruskal-Wallis Test was used to analyse the students' perceived comfort based on gender. Lastly, a thematic review was performed from the three open-ended questions to locate common themes and trends for the 37 answers on each question.

Findings and Discussion

The Student's Perceived Comfort on Using Google Docs for Online Synchronous Collaborative Writing

To answer the first research question, data from the online close-ended questionnaire with five-point Likert scale questions were analysed. Higher scores suggest greater compliance with each assertion amongst the students. The results of the average score of each item are shown in *Figure 1*.

In analysing the 37 collected responses to the students' perceived comfort in collaborative writing, all of the items showed high average scores. In a detailed analysis of each item, the highest average of positive responses was that students felt every member of the group actively participated when doing the writing assignment online (Mean=4.16). This indicates that Google Docs successfully facilitated students' collaborative writing. Surprisingly, the second and the third highest average of the student's responses were regarding the student's perceived comfort on face-to-face instruction, wherein "Doing writing task in face-to-face group work is the best" and online SCW, "It is very helpful when all of my group members are working together online at the same time" (Mean=4.00). Thus, some students still preferred to do the group work during face-to-face instruction as it supports the previous findings by Alsubaie and Ashuraidah (2017). This response is possibly reflected by students since more than one-third of the respondents (n=15) have not experienced using Google Docs for any academic purpose especially for writing tasks.
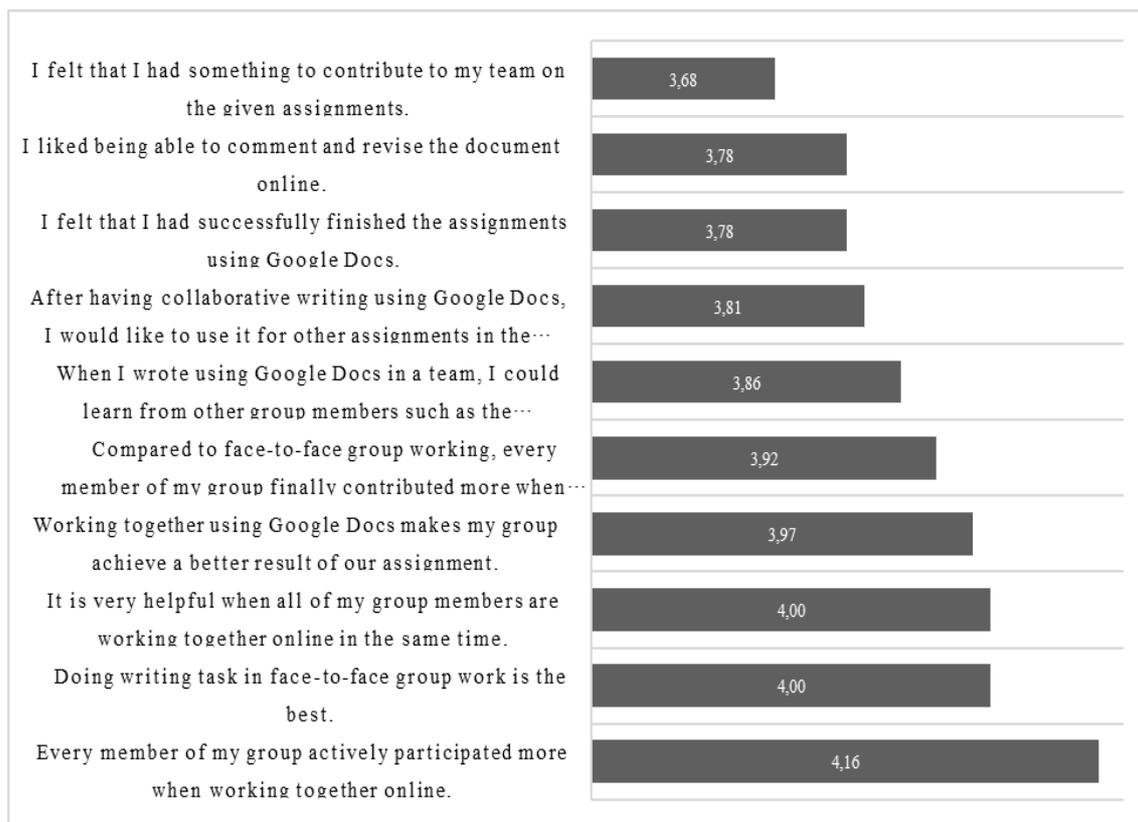

Figure 1. The student's perceived comfort on using Google Docs for online SCW.

However, with regard to its benefits, the majority of students have expressed their agreement on the use of Google Docs to work together on their draft and learn from each other. This contributed to their level of comfort in doing collaborative writing as responses "When I wrote using Google Docs in a team, I

could learn from other group members such as the grammar, punctuation and many more" had an average score of 3.86 (Mean=3.86), predicting that the majority of students felt that it was beneficial for them to learn more from their team. The students were able to correct their mistakes such as their grammar, spelling and punctuation from the feedback of other students. Hence, they believe that they can write better.

Online SCW also provides students with some beneficial tools for enhancing their quality of writing such as spelling checker, grammar checker, and research tools compared to traditional instruction using pen and paper. Also, nearly all the participants in the present study were optimistic about online SCW and enjoyed the experience. Students were able to share their knowledge and conducted peer correction as it is reported by Abahussain (2020), Ardiasih et al. (2019), and Krishnan et al. (2019). These studied reported that having online collaborative learning was a source of learning for the students. Further, it supports a study by Hedin (2012), where it is considered very useful to use Google Docs as a social annotation (SA) resource to provide peer reviews in academic writing. Such findings show that some students are fascinated by Google Docs and are able to see the potential for its use. It should be noted that a smaller number of students are still less impressed. In short, the students generally reported high levels of comfort in the use of Google Docs in the learning process of online SCW. As such, they were able to optimize their performance, especially the role of each group member to work collaboratively on the task.

The Student's Perceived Comfort on Using Google Docs for Online Synchronous Collaborative Writing based on Gender

The second research question asks about the different aspects of student's perceived comfort in online SCW between female and male students. The results of the non-parametric test using the Kruskal-Wallis test found that there were differences in the average score on student's perceived comfort in each aspect based on gender.

TABLE 1
The Result of Kruskal-Wallis Test (analysis based on gender)

Aspect	Gender	N	Mean Rank	P	Probability of Error	Result
Doing writing task in face-to-face group work is the best.	Female Male	27 10	18.37 20.75	0.526	5% (0.05)	not significant
I felt that I had successfully finished the assignments using Google Docs.	**Female** **Male**	**27** **10**	**21.33** **12.70**	**0.015**	**5% (0.05)**	**significant**
Compared to face-to-face group working, every member of my group finally contributed more when using Google Docs.	Female Male	27 10	20.96 13.70	0.057	5% (0.05)	not significant
I had something to contribute to my team on the given assignments.	Female Male	27 10	19.17 18.55	0.870	5% (0.05)	not significant
When I wrote using Google Docs in a team, I could learn from other group members such as the grammar, punctuation and many more.	Female Male	27 10	19.09 18.75	0.927	5% (0.05)	not significant
Every member of my group actively participated more when working together online.	**Female** **Male**	**27** **10**	**20.96** **13.70**	**0.048**	**5% (0.05)**	**significant**
Working together using Google Docs makes my group achieve a better result of our assignment.	Female Male	27 10	19.11 18.70	0.911	5% (0.05)	not significant
It is very helpful when all of my group members are working together online in the same time.	Female Male	27 10	19.00 19.00	1.000	5% (0.05)	not significant
I liked being able to comment and revise the document online.	Female Male	27 10	18.96 19.10	0.970	5% (0.05)	not significant
After having collaborative writing using Google Docs, I would like to use it for other assignments in the future.	**Female** **Male**	**27** **10**	**20.93** **13.80**	**0.049**	**5% (0.05)**	**significant**

From all of the response items, three of them showed significant differences between female and male students, namely; (1) "I felt that I had successfully finished the assignments using Google Docs"; (2) "Every member of my group actively participated more when working together online."; and (3) "After having collaborative writing using Google Docs, I would like to use it for other assignments in the future". This shows that female students have a higher average in all those three aspects. While the other seven aspects, although there are differences on average by gender, the difference is not significant. This means that female students claimed that they have more confidence to declare their success in online collaborative writing activities. Higher motivation and higher self-confidence in writing skills might lead to this condition. Further, this finding is in line with the study of Hashemnejad et al. (2014) which found that female students with a reasonable degree of self-efficacy in writing view themselves as successful writers and may become more engaged in their writing process rather than male students. As supported by Cheng (2002) and Kırmızı and Kırmızı (2015), there are a variety of factors that may influence the writing skills of L2 learners such as self-confidence, self-efficacy, and motivation. Clearly, further research is needed regarding these terms. To conclude, it can be assumed that the perceived comfort of online SCW of male and female students was similar. However, in grouping students, gender should be considered in order to have effective collaborative learning.

The Student's Perspective on their Experience in Using Google Docs for Online Synchronous Collaborative Writing

The third research question is related to the student's perspective toward their learning experience. Overall, the students valued the benefits of collaborative writing using an online platform. They felt that group work, such as that done face-to-face, was convenient. Some students confirmed that they could use other features to communicate while they were writing together such as the chat and call features to facilitate collaboration and share their ideas. Some of them stated as follows:

> *…We can discuss like face to face with others, so we feel so happy [to] use Google Docs for collaborative writing #student3*
> *We can be more creative in writing #student9*
> *We can do[the] writing task as well as we do together in [a] face-to-face meeting… #student25*

From those excerpts, the majority of students actually showed a positive impact from online SCW. As it was experienced by participants in previous research (Ambrose & Palpanathan, 2018), online collaborative writing was very encouraging compared to the face-to-face writing activity. Apparently, these findings are in contrast to a prior study (Zheng et al., 2015) reporting that undergraduate students working on a written assignment were more comfortable seeking feedback directly in face-to-face mode as opposed to editing on Google Docs, because they believed that other students often had problems related to internet connection. As a result, they had to wait for each other while they were editing their draft; it was wasting their time.

In a more detailed explanation, student 3 confirmed his excitement on the supporting features.

> *I like the features because we can do voice call and can ask for other students while we do the exercise, and use chat feature #student33*

As it is reported by a previous study (Cho, 2017), students were impressed by the chat functions, both text-chat and voice-chat. Shifting from text mode to voice call results increased student's interaction and collaboration.

In contrast, with regards to challenges in using Google Docs, some students revealed that they were unfamiliar with the application, leading to their confusion about some of the available features.

> *It was difficult in the first step because I didn't understand how to use [it] #student5*
> *I think, because it was my first time, I used it, so I was a little confused #student8*
> *Because I never use this app before, I really felt difficult to use it #student17*

Meanwhile, other students also expressed their inconvenience since they found that this application is not as compatible as other word-processing applications that they were used to. A student confirmed that some of their friends who were using their mobile-phones had problems in participating in synchronous chat because their mobile phones did not support it. As a result, they felt less effective in the discussions during the drafting process.

> *It's hard to make mind maps or add shapes, it's more convenient if the format is like Microsoft Word#student13*
> *Those who use [the] mobile phone cannot participate in communication in the google docs chat room…. Also, using mobile phone cannot edit diagrams or shapes that have been created, for example, such as mind-mapping ideas #student32*

Further, time constraints and the accessibility of an Internet connection were still highlighted as the problems encountered. Students 11 and 2 stated as follows:

> *In my opinion, the disadvantages of Google Docs are that when used simultaneously or accessing them at the same time will be slow, so we have to use them interchangeably #student11*
> *For some of my group friends whose homes lack internet access, this is very difficult because the loading is also quite long #student2*

Due to the technical issues, those students' statements were similar to the previous study by Zheng et al. (2015), declaring that it is no surprise that the writing projects have been written more slowly with multiple authors. The use of Google Docs effectively relies on internet access. The greater access to the internet the more effective its use is. If not, the typed words would appear very long, thereby having a demotivating effect on the user, in this context, the students. This problem is addressed by Mansor (2012) as well. Further, the lack of internet access was the biggest contributing factor toward this online SCW as it was also found in other online platforms (Andujar et al., 2020). Overall, after analysing its benefits and challenges, some suggestions were addressed. A student said that all of the group members in a team should have clear directions and objectives in doing their tasks, so they would not be confused about what they should do to construct their draft.

> *...the duties of each group member should be explained clearly, so it makes us easier to do the assignment via the Google docs platform #student1*

Although Google Docs promises an interesting experience for collaborative writing, three students suggested that students would be pleased to use Google Docs for their assignments, yet it should not be used very often. They would prefer to have a direct group work, meaning in a face-to-face mode.

> *It's not a problem if I was instructed to do the writing task using google docs, but not too often. #student24*

This feedback can be due to the lowered affective filter of students working behind a computer screen. A significant factor for the success of their learning experience was assigning small numbers to the group and being well organized with clear guidance and learning goals.

> *In my statement, one group only 3 students maximumly, no more. Because in my previous group, there are 4 person [people] that make me did not work effectively #student37*

This finding is similar to the study from Arnold et al. (2012) who stated that to have an effective online SCW, the project should start by assigning roles and responsibilities for each student to promote balanced participation. This also created good team-work while the students were editing their draft. As a result, cooperative learning during online writing tasks will be achieved and the students will have an effective synchronous hands-on task.

Conclusions

This research concludes that the level of students' perceived comfort in utilizing Google Docs for online SCW remains high, meaning they have a positive impression toward their learning experience. However, further analysis reveals that female students appreciated this more than males in terms of the effectiveness of using Google Docs and the distribution of work in teams. Based on this analysis, some recommendations are highlighted to create more balanced groups working on online SCW including: 1) in grouping the students, it is necessary to consider gender distribution and pay attention to students who

have used Google Docs or not; 2) the role and task for each student must be clearly stated before having online SCW implementation; 3) when using Google Docs, it is also necessary to pay attention to the number of members in one group, so group work is more effective. Further, this research also presents some limitations. Hence, further studies are highly suggested regarding some other factors that influence students' perceived comfort such as self-efficacy, motivation, and self-confidence.

Acknowledgements

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