The Implementation of Online Collaborative Writing Tool among Undergraduates

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Abstract: The development and integration of technology has vastly benefited the education sector more so with the COVID-19 outbreak, it has caused a paradigm shift where education and technology go hand in hand. This study investigates the benefits and challenges faced by tertiary learners in online collaborative second language (L2) writing using Google Docs. A mixed method approach was applied and 60 students from a private university in Malaysia participated in the study by partaking in a collaborative writing task. Students' experiences during the writing process were explored through a questionnaire and individual semi-structured interviews were carried out to selected 15 students. Findings suggest that collaborative writing results in superior and more accurate essays, enhancing overall writing skills. Despite the challenges faced by the learners, which include group mates who do not cooperate well, time consuming tasks and the language barrier while collaborating, it aids in effective essay planning, organisation, and structure, fostering improved essay production. The collaborative process also contributes to increased enjoyment and motivation for writing. This study highlights the positive impact of online L2 writing and the importance of fostering collaborative writing to assist students in their writing process.

Keywords: Collaborative writing; English language; Google Docs; technology in education; tertiary education

Introduction

Technology has been well integrated in the current 21st century of teaching and learning. More so, due to the COVID-19 outbreak, it has forced education an instantaneous transition to be reliant on digital technology. Digital education has its benefits of accessibility and outreach for teaching and learning, saving cost and time, flexible location and making education more inclusive (Mustapha et. al, 2021). As language teachers assimilate technology in their lessons, collaborative instructional strategy is gaining traction due to its benefits. From previous research by Herda et. al (2023), positive outcomes in students' social relationships and interactions in the classroom are obtained when collaborative strategies are implemented in the English classroom.

Collaborative writing is an effective instructional strategy which has been extensively carried out in second language (L2) writing lessons. According to Li (2018), collaborative writing is defined as an activity whereby students interact, negotiate meaning and make decisions together during their writing process and it ends with a result of a written text co-owned by all members. This holds a lot of meaning for the students as they pool together resources and construct sentences through scaffolded interactions. Many instructors implement various technologies into English writing instruction with the aim to improve students' writing skills via social interaction (Alwahoub et al., 2022). With the

rapid integration of technology in education, collaborative writing can now be brought online with participation and collaboration beyond borders. There are a variety of platforms or applications online that are suitable to be used for the purpose of collaborative writing. Document sharing like Google Docs is a suitable learning tool that will enable collaborative writing to take place as people are able to create, share and edit documents in real time with each other (Albedaiwai, 2022; Alwahoub et al., 2022; Suwantarathip & Wichadee, 2014). This allows for easy group work where members do not need to be physically present at one place. It is also free and easily accessible from any device, at any location with an internet connection. Due to the technological features of writing interactivity, online collaborative writing has become a promising research direction (Li, 2018).

Online collaborative writing is beneficial not only for the assimilation of technology but for the writing content itself. According to Bhowmik et al. (2019), writing collaboratively has enabled students to pool their ideas together, thus developing a sturdier writing content. Following the same research, it has been reported that collaborative writing has a positive effect on students' engagement in meaning-making processes and language development. Thus, through collaborative writing, students can use the ideas pooled together for their own language development goals.

Collaborative writing is not foreign to teachers as according to Le (2022) it has been widely employed by instructors along with pair or group work. Working with peers can generate a diversity of ideas, encourage development of skills, and achieve deep learning. All of these make collaborative writing to be a significant activity in the classroom. Other than that, collaborative writing has been argued to raise students' critical awareness about their own writing through peer review. This is because during a collaboration, students are more confident to give and receive feedback, thus helping them to become better writers (Bhowmik et al., 2019). This consequently develops the students' soft skills by enhancing their teamwork and critical thinking skills.

Even in situations where education is moved online for most parts, teaching and learning of writing can still take place with the implementation of online collaborative writing. There is a lack of research on online collaborative writing among Malaysian tertiary students (Lin & Maarof, 2013; Yusuf, 2021), thus this study aims to discuss the benefits and challenges faced by tertiary learners in online collaborative L2 writing using Google Docs.

Literature Review

Collaborative Writing and Online Learning Tool

Collaborative learning involves learners working together in groups or pairs completing a task, solving a problem, or creating a product (Rodriguez et al., 2017). The main aim of collaborative learning is to promote social interaction and at the same time, learners get to learn from one another. Similarly, Kukulska- Hulme and Viberg (2018) emphasised that through collaboration in language learning, opportunities to practise the language skills, learning new knowledge and building relationships in both inside and outside of the classrooms are created. Besides, Al Tai (2015) explored that language learners have positive attitudes towards collaborative learning as it offers various benefits.

Collaborative writing takes on various forms in an active process which include using technology as a learning tool and since the concept of teaching writing skills in the 21st century is changing and developing, educators need to adapt and integrate technologies in teaching writing (Alsubaie & Ashuraidah, 2017). Additionally, for decades, scholars have stressed on the advantages of implementing technology in L2 writing as it offers a range of communicative, informational, and publishing tools as well as accessible at the fingertips of every student (Zhang & Zou, 2021). Various language learning skills can be learned and taught through the usage of technology as a learning tool in collaborative activities. These include applications such as forums, chat rooms, wikis, blogs, and Google Doc. Google Doc offers plenty of powerful features that can be utilised by educators to teach 21st century students in developing their writing skills (Sa'diyah & Nabhan, 2021). In the same research, with the current availability of mobile phones, smartphones, and tablets, one can learn anything that they want, whenever they want according to their own preferences. Thus, such learning conditions increased possibilities of collaborative learning.

Collaborative writing is defined as writing activities and tasks that begin with pre-draft discussion, arguments, edit then post-writing documents developed by more than one writer (Dillon, 1993). Fundamentally, collaborative writing is perceived as a social process of knowledge building in which learners complete a task or solve an issue by working together and communicating with each other throughout the process (Dillon 1993; Miyake & Kirschner, 2014). Storch (2013) defined collaborative writing as an activity that includes a shared and negotiated decision making process and a shared responsibility among the writers which results in collective language learning.

Alsubaie & Ashuraidah (2017) disclosed that online collaborative learning has various benefits which include enhancing students' active participation and engagement with content. Besides, students with different learning styles can benefit from the integration of technology with collaborative learning in class as their individual learning can be enhanced through online collaborative learning. Another research conducted by Bhowmik et al. (2019) revealed that collaborative writing helps learners to gather individual ideas and they are exposed to different styles of writing. Learners also get to discover their writing abilities in which they get to identify their strengths and weaknesses through collaborative writing and eventually, they will also become aware of the concept of audience in writing.

The Benefits of Online Collaborative Writing

Studies discovered that there are numerous benefits of collaborative writing and learners have positive attitudes towards the usage of online collaborative tools in writing (Bikowski & Vithanage, 2016; Lin & Yang, 2013; Scager et al., 2020; Sotto, 2021; Suwantarathip & Wichadee, 2014; Teng, 2021; Zou et al., 2023; Zheng et al., 2015).

Studies on the effect of utilising Google Docs for writing, peer editing, revising, and reviewing on writing discovered that students had positive attitudes towards the usage of Google Docs in their collaborative writing process as they get to exchange feedback among their peers throughout the process (Suwantarathip & Wichadee, 2014; Zou et al., 2023; Zheng et al., 2015; Zhou et al., 2012). Teng (2021), Suwantarathip and Wichadee (2014), and Zou et al. (2023) discovered that higher levels of collaboration among learners with the support of technology enables learners to give and receive feedback synchronously that consequently leads to better writing performance compared to learners who use less technology or no technology at all.

Writing collaboratively online has also been discovered beneficial to learners as it effectively engages the learners and makes them become more committed in their writing task (Lin & Yang, 2013; Pham, 2021). Several studies revealed that since online collaboration platforms are convenient, learners are more inspired to participate in the process of editing and peer reviewing, making time to revise their writing and strengthening their understanding of information (Pham, 2021; Reynolds & Anderson, 2015). It has also been found that learners prefer learning activities using online collaborative tools rather than the traditional method which is face-to-face classroom setting as they enjoyed the interaction and prompt feedback from their peers and instructor (Li & Mak, 2022; Lin & Yang, 2013; Suwantarathip & Wichadee, 2014; Zou et al., 2023). Moreover, through collaborative writing, learners tend to pay extra attention on how the task is being completed, acquire more awareness on the varied stages of the writing process and eventually become more self-reliant in learning (Scager et al., 2020; Sotillo, 2002).

Early studies on collaborative writing found that learners were able to produce higher quality essays because they are no longer restricted in a threatening and student-centred nature of classrooms (Braine, 1997; Storch, 2005) and online collaborative writing allows learners to concentrate on various writing skills (Al Tai, 2015; Lund, 2008; Pham, 2021). Thus, in recent years, collaborative writing is gaining more attention. Furthermore, Shehadeh (2011) and Zou (2023) emphasised that collaborative writing assists learners to improve their content in writing, organisation and enhances their vocabulary compared to individual writing.

Zou et al. (2023) and Bikowski and Vithanage (2016) revealed that through an action research, students who actively participated in web-based collaborative writing scored significantly higher means compared to students that participated individually. Similarly, several studies emphasised that collaborative process aids in learners' learning development compared to when they must work by themselves (Albedaiwi, 2022; Al Tai, 2015; Lin & Yang, 2013; Sotto, 2021; Storch 2005; Yang

2014). This is because collaborative writing helps in making students better writers as they are exposed to their target language development in which students are not only exposed to language input, but they are simultaneously exposed to the process of meaning-making through interactions with peers. Also, students were able to get instant feedback on the correct use of language and through collaboration, students get to enhance their individual language development (Albedaiwi, 2022; Storch, 2013) and learners get to gather their ideas and knowledge which results in stronger overall content (Albedaiwi, 2022; Bikowski & Vithanage, 2016; Storch, 2005; Yang, 2014).

Additionally, online collaborative writing allows learners to have access to their work and they can see and make changes from anywhere and anytime they desire. Plus, educators can benefit from this feature too as they can track learners' progress in collaborative writing (Zou et al., 2023).

The Challenges of Online Collaborative Writing

The various challenges to learning online include technical and connectivity problems, culture shock, lack of concentration and social interaction, time management issues, health and family problems, psychological difficulties, knowledge acquisition, motivation, and collaboration (Ab Latif, 2021; Bui, 2022; Muslim et al., 2022). According to Bui (2022), the challenges encountered for online collaboration included slow feedback from peers and teachers. Other than that, writing collaboratively online would cause a lack of development in a student's communication skills. This is because the students found it difficult to exchange ideas with their peers. Similarly, Yang (2014) discovered that students from different backgrounds and particularly those who had never collaborated with peers before found it difficult to define goals, take charge of task divisions and resolve any problems that occurred. Thus, affecting the group harmony and ultimately resulted in poor writing outcomes.

Another challenge of collaborative writing via Google Doc is the influence of technology. Various studies discovered that the interruption of connectivity determines the quality of the collaboration such as unintentional latency. Therefore, in situations where the student has either poor technology skills or poor internet connection could hinder the collaboration and cause it to be unsuccessful (Le, 2022; Lin & Yang, 2013; Syarifudin & Husnawadi, 2022).

Other than that, the other challenge to collaborative writing includes imbalanced task division. According to Alkhalaf (2020), some students do not cooperate well with their group members on the writing task, thus this causes other students to have to contribute more towards the writing task. In the same study, another challenge highlighted was the difficulty in discussing with the members. Some students find it hard to work and generate ideas with others, while some tend to dominate the discussion without giving others a chance to contribute. On the topic of discussion, collaborative writing tasks do consume more time. However, this is dependable on the students' performance during the task (Alkhalaf, 2020). Reluctant students in the group may prolong the discussion time, while a group with cooperating members may complete the task quickly.

Lastly, based on Bhowmik et. al (2019), the challenges of collaborative writing include language barriers. Students with the same language background were comfortable and could collaborate with ease. In lieu of that, students with different language backgrounds and without prior collaborative experience struggled in collaborating. The challenges presented are expected and can be mitigated.

Sociocultural Theory

Based on the Sociocultural Theory by Vygotsky (1978) it is believed that humans learn best through social interactions on two levels. The first level is through interaction with others and the second level is that humans require aid from a teacher or a peer to scaffold understanding. Collaborative learning is a social interaction as it involves a community of the learner, teachers, and peers (Suwantarathip & Wichadee, 2014) thus, Sociocultural Theory can be applied in the form of collaborative writing as it facilitates interaction and scaffolding between learners (Alwahoub et al., 2022; Yaghoubi & Farrokh, 2022). Therefore, students will be able to write better when they write collaboratively due to the interaction and aid from teachers and peers.

According to Le (2022), Sociocultural Theory emulated in the form of collaborative writing has been proven effective to provide learners with opportunities to be better in their critical thinking and

writing efficacy. Following the construct of the theory, writing in groups helps develop the Zone of Proximal Development when a student receives aid from a peer. The theory proves that using a collaborative tool like Google Docs can enable collaborative writing that would help a student to learn better by writing and communicating better with their peers.

As learning is a social process that requires active engagements to facilitate development, based on Social Constructivist Theory, learners would then be able to construct their knowledge better. Meanings and understandings are generated through exchanges between learners. Thus, learning collaboratively would enable students to improve their writing skills. This is since writing is a social process, thus as individuals collaborate, they will be able to improve their writing skills in line with Social Constructivist Theory (Bonsu, 2022).

Methodology

This research used a mixed-method approach to gather both quantitative and qualitative data from different sources. The quantitative instrument used was close-ended questionnaires and interviews were used to collect qualitative data. This research is focused on students who were taking an English course as they were actively writing for lessons. Therefore, the study was conducted among a group of 60 students, from a private university in Johor Bahru, Malaysia. All the respondents participated in at least one collaborative writing task via Google Docs. There were three to four students in one group. Afterwards, they had to answer the questionnaire given. The questionnaire items were designed to find out the benefits and challenges faced by learners in utilising Google Docs as a collaborative writing tool, adapted from Alkhalaf (2020). The questionnaire consisted of 17 items and was placed on a disagree, neutral and agree scale. The return rate of the questionnaires was 100%. The data was then analysed via descriptive statistics. To further supplement the quantitative data, individual semi-structured interviews were carried out to selected 15 students as according to Cobern & Adams (2020), 15 - 20 respondents would be suitable to reach saturation of opinions. The purpose of the interview was to solicit the respondents' opinion regarding personal benefits and challenges of collaborative writing, and the features of Google Docs that they like. The qualitative data was analysed using the content analysis method. Content analysis was employed to systematically analyse the data collected from the interview transcripts. This method was chosen due to its ability to identify patterns and themes within the qualitative data collected. To conclude this study, all data gathered have been triangulated. This further strengthens the study through multiple methods of data collection and analysis.

Findings and Discussion

The Benefits of Online Collaborative L2 Writing Using Google Docs

This section describes the benefits experienced by tertiary learners in online collaborative L2 writing using Google Docs.

Table 1. Benefits of online collaborative writing

No.	Items	Disagree % (N)	Neutral % (N)	Agree % (N)
1.	Collaborative writing is an effective strategy that results in better, more accurate and complex essays.	6.7 (4)	20 (12)	73.3 (44)
2.	Collaborative writing makes the task more enjoyable and interesting and motivates me to write.	3.4 (2)	18 (11)	78 (47)

3.	Expressing my ideas to the group improves my communication and negotiation skills.	13.3 (8)	13.3 (8)	73.3 (44)
4.	Collaborative writing helps me learn how to plan, organise, and structure the essay more effectively.	5 (3)	26.7 (16)	68.3 (41)
5.	Collaborative writing helps in improving my writing skill in general.	11.7 (7)	36.7 (22)	51.7 (31)
6.	Collaborative writing helps in understanding and considering multiple viewpoints on a particular topic.	3.4 (2)	18 (11)	78 (47)
7.	Collaborative writing helps in constructing a strong argument.	13.3 (8)	35 (21)	51.7 (31)
8.	Collaborative writing helps me verbalise and explain my ideas.	13.3 (8)	30 (18)	56.7 (34)
9.	Collaborative writing stimulates critical thinking skills (through commenting on others' ideas).	8.3 (5)	35 (21)	56.7 (34)
10.	Collaborative writing helps in improving grammatical accuracy and learning vocabulary	8.3 (5)	30 (18)	61.7 (37)
11.	Collaborative writing helps me receive useful feedback.	8.3 (5)	28.3 (17)	63.3 (38)

The data summarised in Table 1 above were tabulated from the questionnaire and it shows that tertiary learners have positive experiences and perception towards collaborative writing. Based on the findings of the research, 73.3% of the respondents agree that collaborative writing is an effective strategy that results in better, more accurate and complex essays. Furthermore, more than half of the respondents (51.7%) agree that collaborative writing helps in improving their writing skill in general and it helps in constructing a strong argument. Additionally, 68.3% of the respondents agree on item 4 in which collaborative writing helps them learn how to plan, organise, and structure the essay more effectively. Besides, it is discovered that collaborative writing helps in understanding and considering multiple viewpoints on a particular topic as 78% of the respondents agree with the question.

All the items mentioned above confirmed that the respondents agree that collaborative writing aids them in producing better essays. To get a better understanding on how exactly collaborative writing helps in writing better essays, the respondents were asked in the interview regarding this matter. Based on the interview conducted, it is found that three of the respondents believed that by implementing collaborative writing, they could write and review other's writing at the same time and they were able to view each other's points and make changes anytime that they want which helps in organising the essay at the same time. While another four respondents mentioned that through collaborative writing they get to brainstorm ideas together. All these benefits are corroborated with various studies that discovered learners get to gather ideas and knowledge resulting in stronger and better overall content in their writing (Albedaiwi, 2022; Bikowski & Vithanage, 2016; Storch, 2005; Yang, 2014). On top of that, early studies identified that since learners are no longer constrained by classroom's intimidating atmosphere, they were able to produce higher quality essays (Braine, 1997; Storch, 2005).

In addition, the findings from the questionnaire reports that a high number of the respondents agree on item 2 and 3 in which 73.3% of the respondents agree that by expressing their ideas to the group, it improves their communication and negotiation skills and 78% of them believes that collaborative writing makes the task more enjoyable and interesting and motivates them to write. Five

of the respondents mentioned during the interview that through collaborative writing, they become more confident to share their ideas, and they are inspired to take part in the writing process because of the convenience it offers. These findings correspond with the findings from Pham (2021) and Reynolds and Anderson (2015) which reported in their studies that online collaboration tools are practical, and students are more motivated to participate in editing and peer reviewing, scheduling time to modify their writing and improving their comprehension of information.

Improving writing skills and learning vocabulary have been reported in several studies as some of the advantages of collaborative writing. Likewise, item 10, got the agreement of 61.7% of the respondents since they agreed that collaborative writing helps in improving grammatical accuracy and learning vocabulary. This finding reflects Al Tai (2015), Lund (2008) and Pham (2021) in which it was discovered that collaborative writing aids learners to improve their writing skills and enhances their vocabulary (Shehadeh, 2011; Zou et al.; 2023).

From the result, 63.3% of the respondents indicated that they agree with the statement 'Collaborative writing helps me receive useful feedback'. This finding is in line with various studies that discovered instead of the traditional method, which involves face-to-face classroom settings, students prefer online collaborative learning tools because they enjoy the engagement and prompt response from their classmates and educator (Li & Mak, 2022; Lin & Yang, 2013; Suwantarathip & Wichadee, 2014). In addition, during the interview session, several of the respondents mentioned that they like collaborative writing because work can be shared directly to their group members and teaching lecturers. They also added that since everyone can participate and edit, it helps the writing process and performance. These benefits of collaborative writing are consistent with the findings from other studies, it was revealed that collaborative writing allows students to make changes anywhere as they have access to their work whenever and wherever Zou et al., 2023) thus permits students to provide and receive feedback in real time, which improves their writing performance (Suwantarathip & Wichadee, 2014; Teng, 2021).

Lastly, sharing ideas and thoughts easily is another benefit of online collaborative writing. 56.7% of the respondents agree with item 8, 'Collaborative writing helps me verbalise and explain my ideas and item 9, 'Collaborative writing stimulates critical thinking skills (through commenting on others' ideas)'. The respondents explained in the interview that they can communicate with each other and exchange ideas easily through collaborative writing. This is supported by several studies that found collaborative process in the classroom helps in students' learning development as they are exposed to the process of meaning-making through their interactions with peers (Albedaiwi, 2022; Al Tai, 2015; Lin & Yang, 2013; Sotto, 2021; Storch 2005; Yang 2014).

The Challenges of Online Collaborative L2 Writing Using Google Docs

This section describes the challenges faced by tertiary learners in online collaborative L2 writing using Google Docs.

Table 2. Challenges of online collaborative writing

No.	Items	Disagree % (N)	Neutral % (N)	Agree % (N)
1.	In collaborative writing, only one member does all the work.	56.7 (34)	35 (21)	8.3 (5)
2.	Because of (1), it is unfair that all the members get the same grade.	21.7 (13)	33.3 (20)	45 (27)
3.	In collaborative writing, some members do not accept different opinions.	30 (18)	43.3 (26)	26.7 (16)
4.	Some members control the discussion without giving others an opportunity to explain their ideas.	50 (30)	31.7 (19)	18 (11)

5.	Collaborative writing consumes a lot of time.	31.7 (19)	36.7 (22)	31.7 (19)
6.	Members discuss their ideas in Mandarin, which decreases the chances of improving my English language skills.	30 (18)	43.3 (26)	26.7 (16)

The data in Table 2 above were compiled from the questionnaire and it is discovered that only a minority (8.3%) of the respondents agreed that only one member of the group did their work. The statement posed a challenge, but in this research, it is proven that collaborative writing can generate teamwork as 56.7% of the respondents disagreed with the statement. From this finding, it disproves Alkhalaf's (2020) imbalance task division statement when it comes to a challenge of online collaborative writing.

Following that, 45% of the respondents agree with item 2, that it is unfair that all the members get the same grade if not all put in the same effort. From the interview, a few respondents have the opinion that some of their group mates are not cooperating, and do not want to do their task. This causes other students to have to contribute more to the task and causes unfairness in the grades they received (Alkhalaf, 2020).

Based on item 5, 31.7% of the respondents agree that collaborative writing consumes a lot of time. This is in line with the respondents' view that there is "time constraint when it comes to working together" and "unable to communicate with the members as everyone has their own schedule." This challenge of online collaborative writing is supported by Alkhalaf (2020), whereby collaborative writing may consume more time as it depends on each student's performance when they come together as a group.

From item 6, 26.7% of the respondents agree that language barrier can be a challenge for online collaborative writing. As the aim of the task is to sharpen their English language writing skills, some students just stick to using their native language as mentioned in the interview by most respondents that the group uses Mandarin most of the time as they are not fluent in English. This corresponds with Bhowmik et. al (2019) as students with different language backgrounds would struggle to collaborate for an English task. This also means that students end up not using the targeted language for the task thus decreasing their chance of improving their language skills.

From the findings of this research, respondents are not struggling much with the challenges to using Google Docs, thus this proves that there are more benefits of integrating an online collaborative writing tool to enhance students' English writing skills. This supports the notion that writing is a social process, thus as students collaborate, they will be able to improve their writing skills in line with Vygotsky's Sociocultural Theory (Bonsu, 2022).

Conclusion

This study aimed to discuss the benefits and challenges faced by learners in online collaborative writing. The findings of this study reveal the impact of online collaborative writing on students' writing skills and overall learning experience. The results clearly indicate that engaging in collaborative writing not only leads to the creation of better, more accurate, and complex essays but also contributes to the improvement of students' writing proficiency in general. Moreover, the research highlights the positive influence of collaborative writing on communication, negotiation, and teamwork skills. The act of working together not only enhances the quality of the essays produced but also makes the writing task more enjoyable and interesting, motivating students to actively participate in the writing process. However, there are also challenges faced by learners which include group mates who do cooperate well, time consuming tasks and the language barrier while collaborating. In conclusion, the usage of online collaborative writing tools such as Google Docs is proven to be beneficial, and therefore educators and researchers need to overcome the challenges. As educators and institutions continue to integrate collaborative writing practices into the curriculum, it becomes

evident that these approaches play a crucial role in preparing students for the demands of contemporary communication and teamwork.

In the future studies, respondents of various backgrounds could be included, so that there is a more comprehensive pool of data that would further enhance the necessity of the research. Besides, other types of online collaborative writing tools could also be implemented in language classrooms to study their perception, advantages as well as the challenges faced by students and teachers.

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