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Comparing the effectiveness of online and in-class collaborative writing

Bio data



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Abstract

Collaborative writing (CW) was found to be beneficial to the students, and it has great impacts on the students' writing outcomes. However, few studies have been investigated to see whether there are any differences in the impacts of writing between online and in-class collaborative writing. The present study analyzed 120 argumentative essays from 60 students, 30 from the virtual class and 30 from the in-class writing. The study only limits to three types of sentences written from each essay, such as simple sentences,

compound sentences, and complex sentences. The study found that there were great effects of the CW on the students' writing quality. However, there was no difference in the effectiveness of CW in both traditional classroom and online platforms. The study claims that either platform of the language teaching, CW helps enhance students' writing skills, and virtual classroom is also a great tool for writing activities.

Conference paper

Introduction

The last two decades have witnessed a huge growth in the application of collaborative learning, especially collaborative writing (CW) in second language teaching. The term collaborative writing has been defined as a type of writing that involves co-authors to participate at all phases of the writing process, sharing responsibility and ownership of the final product (Storch, 2018). According to Storch (2018), the growing interest in collaborative writing is attributed to: (1) the shift in the nature of workplace writing when writing tasks are completed in groups rather than individual; and (2) the emergence of Web 2.0 applications such as blogs, wikis, and Google Docs, which have shifted literacy practices, making the production and transferring of texts easier. To date, most research compared the effect of collaborative writing (pair work, group work) and individual writing on learners' writing performance in either face-to-face interaction classroom (Dobao & Blum, 2013; Pham, 2019; 2021; Storch, 2005) or computer-mediated learning environment (Elola & Oskoz, 2010; Hsu, 2019; Kressler, 2009). The results from these researches consistently indicated that this pedagogical approach has numerous benefits such as enhancing learners' reflective thinking, helping learners to improve grammatical accuracy, fluency, and improving content quality of the texts. Despite the positive effects of collaborative writing on both learning contexts, whether technology-mediated collaborative writing has significance over face-to-face collaborative writing is still unknown. Few studies are conducted comparing the effectiveness of collaborative writing in traditional learning context and technology-mediated learning environment. This study aims to fill this gap in literature by comparing writing performance of two classes; one adopted online collaborative writing using MS Teams and the other used collaborative writing in a traditional classroom. The findings of this exploratory study will help clarify the effectiveness of collaborative writing in different learning conditions and provide implications for further practice.

Literature Review

Collaborative writing

Collaborative writing has been considered as an effective teaching approach and is widely discussed by many researchers and educators (Pham, 2019; Storch, 2011). According to Storch (2011), collaborative writing refers to an activity in which a pair or a group of participants work together to make a common product. Storch also claimed that all the group members share the ownership of produced text and the peer-review activities solely are not considered collaborative writing. During a collaborative writing activity, students not only brainstorm ideas but also discuss, negotiate to focus on a common goal (Storch, 2019). Therefore, when they work together, they can learn from each other, develop their learning abilities, and achieve better results in their final products (Dobao & Blum, 2013; Heidar, 2016; Pham, 2019).

Collaborative learning is underpinned by constructivism and sociocultural theory of cognitive development. The theory highlights the part of interaction and peer collaboration in second language development. According to Dewey (1938), learning is a

social activity in which learners do things together and interact with each other. Vygotsky's Zone of Proximal Development (1978) explained that higher cognitive functions only appear on the social, intermental plane before the psychological, intramental plane. Novice learners build knowledge in cooperation with more efficient individual experts. Language is the semiotic instrument mediating this process while learning is the gradual internalization of socially built knowledge.

Researchers utilizing sociocultural theory in the research of second language learning claim that learners could have an advantageous effect on each other's development as they could act as both novices and experts (Ohta, 2001; Storch, 2002; Swain & Lapkin, 1998). Due to the difference in both strengths and weakness among two learners, they could provide scaffolded support to each other during cooperation by grouping their different resources and achieve a level of performance which is beyond their individual competence level (Ohta, 2001)

Microsoft Teams (MS Teams)

MS Teams is an application in the Office 365 ecosystem, which provides users with an effective virtual learning and meeting environment (Tran & Nguyen, 2021). The application was introduced and launched globally on March 14, 2017. After more than six years, MS Teams has gained more than 120 million users worldwide. In the context of Vietnam, MS Teams has become a popular application used for online teaching during Covid-19 pandemic among many schools and educational institutions.

MS Teams provides users with a range of functions supporting learning and teamwork. Teachers and students of a class are assigned to a particular channel in order to have online meetings. Groups of students in the same organization can also create their own channel for teamwork and group discussion. This application allows teachers and students to share materials and documents. It integrates many other Microsoft applications such as Microsoft Words and Excel where students and teachers can collaboratively draft and compose documents. During online lessons, the teacher can assign students into break-out rooms, where they can discuss and do the assignment together.

Simple sentence, compound sentence, and complex sentence

A sentence is a group of words that form one or more clauses to express and communicate a complete thought. There are four basic types of sentences in English including simple, compound, complex, and compound-complex sentences. These kinds of sentences are categorized by the type of clauses used to form them.

There are dependent clauses and independent clauses. A dependent clause is formed with subordinators such as when, if, that, or who. A dependent clause cannot stand alone in a sentence because it cannot express a complete thought. In contrast, an independent clause can stand independently to express a thought with a subject, verb, and often a complement.

A simple sentence is created with one independent clause. A compound sentence is a combination of two or more independent clauses. Coordinators, conjunctive adverbs, or a semicolon can be used to join the clauses in a compound sentence. A complex sentence consists of one independent clause and one or more dependent clauses. In complex sentences, the idea in the main clause (independent clause) is more important than that in the dependent clause. The fourth type of sentence is compound-complex sentence which has at least three clauses—two independent clauses and one dependent clause. In this study, compound—complex sentence and complex are sorted in one group, so three

sentence types involving simple sentence, compound sentence and complex sentence are examined.

Previous studies

Collaborative writing, especially collaborative writing on second language learning, has been widely investigated and reported in literature. A range of studies has found positive effects of collaborative writing on learner's performance, especially in terms of accuracy. Storch (2011) recommended that collaborative writing activities, which are lectures of academic writing, would provide a decent learning context for students to improve their quality of academic writing in case of careful training designs. Storch (2002) and Shehadeh (2011) found that collaboration can also help students improve their writing in ideas, organization, lexical resources, and accuracy over individual writing. Other researchers concluded the similar findings that group writing activities provide better writing products among learners (Dobao & Blum, 2013; Watanabe & Swain, 2007).

Dobao and Blum (2013) implemented a study to investigate the students' attitudes and perception to collaborative writing in pairs and small groups. There were 55 Spanish learners divided into two groups, a group worked in pairs and the other worked in a team of four. The study showed that the majority of the participants preferred collaborative writing task, and there was a positive effect of collaborative writing on vocabulary and grammatical accuracy of their written products.

Pham (2021) conducted a study to investigate the effectiveness of collaborative writing on students' writing fluency. The participants were English major students in a university in Vietnam. There were 35 students in the experimental group and 27 in the control group. The two groups were asked to write four different writing essays, one paper for the pre-test, two writing assignments during the training as a normal curriculum, and one paper for the post-test. Unlike the control group, the experiment group was assigned to compose two more essays collaboratively for the pre-test and the post-test. The findings of the study showed that collaborative writing helped improve learners' writing fluency in terms of the number of words in both collaboratively written essays and individually written essays. The study also indicated the positive attitude of students on writing in groups and proposed a useful framework for writing teachers to implement in their classroom. Although the result of the study filled the gap in previous studies (e.g., Ansarimoghaddam et al., 2017; Biria & Jafari, 2013; Storch, 2005; Zabihi & Rezazadeh, 2013), the framework of collaborative writing should be tested in large scale context.

Zabihi and Rezazadeh's (2013) used the Abbreviated Torrance Test for Adults (ATTA) to compare the individual students' writing and pair writing in terms of fluency, accuracy, and complexity. There were 92 university students in Iran participating in the project. The results showed that collaborative writing helped improve accuracy of the written texts compared to individual work. In contrast, there was no effect of collaborative writing on fluency. The limitation of the study is that the students worked in pairs.

Along with the development of the internet and technology, web-based language learning and teaching has become popular and drawn attention among scholars. Especially, online writing or web-based writing tasks using Google Docs, Wiki, or some other platforms has been proven to be beneficial to learners. Talib and Cheung (2017) selected and analysed 15 SSCI journals published from 2006 to 2016. They found that collaborative writing has a positive impact on learners' writing performance in terms of accuracy, critical thinking, and motivation. The study also claimed that technology has enhanced collaborative writing tasks.

Ansarimoghaddam et al. (2017) implemented a study to discover the differences in student's interaction between Wiki and face-to-face when they collaboratively made an

argumentative essay. A whole university class of thirty-two students participated in the research. One group discussed and wrote essays on the wiki platform, while the other groups directly made argumentative essays in the classroom. The research showed that the interaction between group members in collaborative writing came up with social interaction, which motivated students to cooperate and learn from each other. In addition, Wiki interaction made drafting and revising phases more effective to perform while face-to-face interaction was easier for the planning phases.

Kessler et al. (2012) explored the changing nature of collaborative writing affected by Web-based writing contexts. There were 38 Fullbright scholars in a Midwestern university participating in the study. The participants used Google Docs to collaboratively plan and report on a research project. The findings indicated that most students focus more on meaning than form and there were changes made in simple errors in form such as spelling and punctuation. Although fewer students correct their grammar mistakes, the changes they made were generally more accurate than inaccurate. Also, the study found that students were enthusiastic and engaged in working collaboratively.

Valizadeh (2022) examined the effectiveness of collaborative writing on Google Docs on 48 Turkish EFL learners' individual descriptive writings. The participants were divided into two groups with 24 students each. The control group experienced individual writing practice with teacher's corrective feedback whereas the experimental group experienced collaborative writing on Google Docs with corrective feedback from teacher. The findings of the independent samples t-test showed that the collaborative writing using Google Docs group had better performance than those in the individual writing group. The researcher suggested that the Google Docs writing environment can help improve learner's individual writing skills. Although this provided the evidence of collaborative writing on individual writing performance, this study compared the group writing and individual writing.

Bikiwski and Withatage (2016) conducted a study on the impact of web-based collaboration on individual writing with 59 English L2 learners at a university in the US. Both the experimental group (n= 32) and the control group (n=27) completed four in-class web-based writing tasks. The different treatment was that the experimental group worked collaboratively while the control group engaged in the tasks individually. The findings revealed that students who worked in groups gained higher scores in their individual writings compared to those who completed the web-based tasks individually, although there was evidence of a positive effect of web-based tasks on both groups. Bikiwski and Withatage (2016) also proposed a three Teaching Cycle for Web-Based Collaborative Writing: (1) preparation, (2) collaborative writing, and (3) reflection. In addition, the researchers called for more research on the potential benefits of CALL-based collaboration among L2 writers. In response to this call, our study focuses on investigating the difference between online team writing and in-class team writing. Thus, one research question is raised:

Is there any difference between in-class and online collaborative writing in terms of simple sentence, compound sentence, and complex sentence?

Methodology

Context and participants

The current study took place at the Faculty of Foreign Languages of Van Lang University, Ho Chi Minh City, Vietnam. Forty-three students, ages ranging from 19-20, enrolled in the Writing 4 classes participated in the study. Their English proficiencies were equivalent to B1 of CEFR (The Common European Framework of Reference for Languages). The

participants completed all the prerequisite courses Writing 1, 2, and 3 in their English Major program.

In Writing 1, the students learned sentence structures, describing home, persons, and narrating events. In Writing 2, they learned to compose some paragraph genres, such as logical division of orders, process paragraphs, and opinion paragraphs. In Writing 3, the students learned to write academic paragraphs, such as narrative and descriptive paragraphs and comparison/contrast paragraphs. In Writing 4, they were trained to transfer from paragraphs to essays. During the course, they learned how to make their writing united and coherent. In addition, they learned how to compose three genres of essays, such as comparison/contrast essays, cause/effect essays, and argumentative essays. The writing courses lasted for ten weeks, three hours each week.

Research Design

Text analysis was carried out in this research to measure how different the subjects' written performance was in pre-test and post-test. Specifically, the researchers analyzed word count, sentence types, the use of cohesive devices to evaluate the effect of collaborative writing on students' writing in terms of fluency, complexity, and coherence. The pre-test and post-test essays were analyzed to gain data.

Procedure

The study was carried out following three main stages. In the first stage, the students in two intact classes were formed into small groups. The control class consisted of 22 students, five boys and 17 girls, while the experimental group consisted of 21 students, eight boys and 13 girls. Students were allowed to choose the group to work as long as each group has four to five members. In the second stage, the experimental class was trained on how to create a new document in Microsoft Teams for collaboratively writing and editing an essay. Both the control and experimental class were taught the same lessons. The purpose of this course was to train how to compose comparison and contrast essays, cause and effect essays, and argumentative essays. Besides, it aimed at developing students how to present their ideas in essays logically with unity and coherence. In this stage, students in both classes were instructed how to brainstorm ideas for a particular topic, write the essay and how to give feedback. In the final stage, peer feedback skills were also developed for the students to learn how to evaluate their peers' essays. The students in this course met once a week, three hours for each meeting as the normal curriculum of the university. The main difference between the two classes was that the groups in the control group collaboratively write the essays in class, while those in the experimental group work online using MS Teams.

Data collection

Pre-test and post-test essays were collected via an e-learning site which were provided by the school learning management system. Students in the control group were requested to type their essay in Microsoft Words and submit on their e-learning site. Essays had to be submitted after each lesson. However, only argumentative essays were analyzed for research purpose because learners were requested to write argumentative essays in both pre-test and post-test

Findings and Discussion

There were a total of 120 argumentative essays collected from both control and experimental groups to analyze in this research. A total of 30 pretest papers and 30 post-test papers were collected from each group.

Participants of two groups were requested to write an argumentative essay in the pre-test in 60 minutes. The researchers compared 30 pre-test papers of CG with 30 pre-test papers of the EG using the independent samples t-test of SPSS versus 22 to see if there were any differences between students’ number of each sentence type before the study.

Table 1. *Pre-test of experimental group (EG) vs. Pre-test of control group (CG)*

	M	SD	t	df	p
Sentences					
Simple sentence					
EG	5.88	2.3	1.81	30	0.07
CG	4.31	2.4			
Compound sentence					
EG	4.5	1.5	1.05	30	0.3
CG	3.94				
complex sentence					
EG	6.94	1.7	.67	30	0.5
CG	6.31				

* Independent sample t-test

Table 1 depicts the student’s written complexity in terms of number of simple sentences, compound sentence and complex sentence in two groups’ pretests. On average, the total number of simple sentences from 30 students in control group (CG) was 4.31 (M=4.31, SD=2.4), while the mean score of the number of simple sentences of the experiment group (EG) was 5.88 (M=5.88, SD=2.3). Students in EG tended to use more simple sentences than those in CG. However, there was no significant difference in the amount of composed simple sentences in two groups according to the result of an independent sample t-test (p=0.07; p>0.05). In terms of compound sentences and complex sentences, the results were similar. The average number of compound sentences in EG was 4.5 (M=4.5, SD=1.5) and that of CG was 3.94 (M=3.94). Complex sentence types of EG and CG had a similar pattern with 6.94 and 6.31 (M=6.94, M=6.31) respectively.

There was no significant difference between the number of these sentence types composed by two groups (p=0.3; p=0.5). That is to say, the complexity involving using different sentence types in the learners’ written work before the study was not different.

Is there any difference between in-class and online collaborative writing in terms of simple sentence, compound sentence, and complex sentence?

The purpose of this study was to investigate whether there is any significant difference between collaborative writing in face-to-face and online learning environments. In order to find out the answer to this question, the number of different sentence types in the 30 post-test essays of the CG were compared with those 30 in the EG. The researchers only compare post-test performance of the two groups to investigate if there is any difference in their written work after treatment employed during the study.

Table 2. *Post-test of EG vs. CG*

	M	SD	t	df	p
Sentences					
Simple sentence					
EG	6.13	1.9	-0.73	30	0.46
CG	6.81	3.1			
Compound sentence					
EG	6.31	1.5	3.41	30	0.02
CG	4.38	1.6			
complex sentence					
EG	8.88	2.3	.60	30	0.55
CG	8.25	3.3			

* Independent sample t-test

As shown in Table 2, the mean score of simple sentences in EG and CG was 6.13 and 6.81 respectively. The p value was 0.46 ($p=0.46$; $p>0.05$) means that there was no significant difference in the number of simple sentences composed in both groups. The statistics of complex sentences show a similar result. On average, there were about 8.88 ($M=8.88$) complex sentences written in EG posttest essays, compared with 8.25 ($M=8.25$) sentences of CG. It can be seen that there was no difference in the number of complex sentences in two groups ($p=0.55$). Nevertheless, it is noticeable that there were more compound sentences in EG essays ($M=6.31$) than in those of CG ($M=4.38$). The result from the independent sample t-test with $t(30)=.60$, $p=0.02$ shows that there was a significant difference between the post-test of EG and CG. In other words, online collaborative writing helps increase the number of compound sentences in learners' individual written work.

Conclusion

This research attempted to investigate the effectiveness of collaborative writing on English learners' writing performance and compared collaborative writing in two different learning contexts, in class and online. The findings indicate that CW facilitates learners' writing fluency in the argumentative essay genre in terms of length increase. Complexity of text has also been found to be enhanced. Specifically, there was an increase in the number of compound and complex sentences in both the control and experimental groups. Furthermore, there seems to be no difference in the effectiveness of CW in both traditional classroom and online platforms, which is MS Teams, in this research.

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