The impact of collaborative writing via Padlet on students’ writing performance and their attitudes

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ABSTRACT

The study investigates the impact of collaborative writing via the Padlet platform on Vien Dong College students’ writing performance and attitudes. The study employs a quantitative approach using the tests’ results and questionnaire responses. Descriptive analysis is used to interpret the data. Findings illustrated that students’ writing accuracy was improved. Students also had positive attitudes towards the employment of collaborative writing via Padlet. The study suggests that future research should expand to English-majored students, one more instrument might be employed, and other writing task types could be instructed.

1. Introduction

Limitation in English writing instruction and learning is not a new issue. There is a plenty of research has been carried out to investigate writing teaching and learning. In fact, writing is viewed as the hardest skill to learn in language learning. Additionally, in a global context, a variety of companies demand their staff to comprehend both oral and written English in a proficient way (Luna & Ortiz, 2013). In Vietnam, Nguyen (2009) claims that most students find it quite challenging to learn English writing well. At Vien Dong College, English is a mandatory subject divided into four courses: Basic English, English level 1, English level 2, and English level 3. Due to the objectives of the school curriculum, language communication skills are more emphasized in English classes. Besides, from the writer’s teaching experiences, students are seemingly more interested in practicing skills like speaking, listening, and reading rather than writing. This tendency is probably because writing is not concentrated enough in the preceding level when it is not accounted for in examinations. Students then do not focus much on writing skills and might not know how to learn this skill properly. As a result, it leads to weak performance of writing ability in the summative tests among the students in this College.

To find a solution to improve writing performance among students in Vien Dong College, this study aims to employ collaborative writing and Padlet platform. Additionally, the study purposely expands to concentrate on students’ attitudes towards this implementation. To fulfill these goals, the study addresses answering two research questions:

1/ To what extent does collaborative writing via Padlet make and impact on students’ writing performance?
2. What are the students’ attitudes towards collaborative writing via Padlet?

The study provides significant and practical contributions not only to Vien Dong College but also to English writing learning and teaching at the tertiary level. Besides, it theoretically brings up the limited Vietnamese literature on implementing collaborative writing in strengthening writing ability among tertiary students along with their attitudes towards this application. The firstly clear significance is the impact on learning writing at Vien Dong College. The effectiveness of collaborative writing via Padlet can be a solution for the teachers to make an impact on students’ writing, particularly writing accuracy. Another effect is on the instructors. In fact, they can utilize their writing teaching through collaborative writing so that students can practice writing in a flexible and adaptable scheme. Furthermore, it presumably reduces the fear of learning to write among the students, for collaboration is viewed as a natural behavior of the humankind. Eventually, supported by an ICT tool like Padlet, collaborative writing is obviously more effective when millennials students are familiar with digital literacy. It not only enhances the writing activity but also helps to create a friendly online classroom environment to acquire English.

2. Literature review

2.1. Collaborative writing

Luna and Ortiz (2013) illustrate that “collaborative writing means that the student teams up with one or more peers to go through the writing process”. They also point out collaborative writing is a technique for preparing students for assignments where teamwork performance is available. Collaborative writing as tasks and activities are viewed as beginning with pre-draft discussions, arguments, and edits, then a post-draft document produced by more than one writer (Dillon, 1993). Throughout cooperating steps, it seems that students are deeply exposed to a teamwork setting, and their writing learning is obviously strengthened. Besides, collaborative writing is viewed as “an activity where there is a shared and negotiated decision-making process and a shared responsibility for the production of a single text” (Storch, 2013). Being claimed not only as a creative pedagogical tool for teaching, collaborative but writing is also an environment of motivating learning experience for students (Montero, 2005). Regarding to the advancement of Internet technologies, collaborative writing has been developed and widely used in education (Ming, Leping, & Li, 2018). Hence, it is presumed that collaborative writing can be carried out by a range of forms as an active process due to technology (Alsubaie & Ashuraidah, 2017).

Collaborative writing has been authenticated to have several benefits. Baker (2013) states that being assigned to a group can lessen the challenge of writing. Additionally, in a journal published in 2017, Talib and Cheung also claim that collaborative writing activities help motivate students to be involved in writing and improve critical thinking skills. Besides, there are studies illustrating the responsibility of fostering and collective efforts among students in collaborative writing. When Vanhanen-Nuutinen (2006) also points out that collaborative writing can be used for advancing the transfer of development by collective actions, Storch (2019) claims that students who practice collaborative writing have duties for producing the whole text. Besides, Hirvela (2011) states that students have chances to use their language knowledge and collaborate with their friends. In a study in 2005, Storch also points out that language accuracy was enhanced by collaborative writing among students. However, studies are pointing out that writing fluency was not improved by collaborative writing. In their study in 2013, Biria and Jafari (2013) illustrated that writing fluency was not significantly enhanced by collaborative writing. Besides, the research of Zabihi and Rezaazadeh (2013) shows the accuracy was improved while the fluency was not increased among collaborative students compared with individual ones.
2.2. Writing performance

Writing is viewed as a productive skill in that the learner utilizes the target language to present their ideas or feelings. Writing is considered the most challenging language skill due to a variety of language aspects such as grammar, spelling, punctuation, word choice, etc. Therefore, writing fluency and writing accuracy are two criteria that language learners must fulfill if they desire to write effectively. In a study in 2007, Lannin (2007) claims that the level of fluency in writing in accordance with the number of words written in an amount of time, the harmony level, and the cohesion of ideas. Besides, Van Gelderen and Oostdam (2005) also state that an essential characteristic of writing fluency is the creation of various word combinations and sentence structures. According to Tavakoli and Rezazadeh (2014), the impacts on writing fluency are speech rate, pauses, and repair fluency. Unlike fluency, accuracy is related to correction in producing language. Particularly, accuracy includes correct sentences or phrases that learners can speak or write. In writing, accuracy is claimed to be adaptable increasing language by target language norms (Skehan & Foster, 1997). Besides, in a study in 1998, Wolfe-Quintero, Inagaki, and Kim illustrate that the writing accuracy level could be checked by evaluating the errors that the students made in grammar and vocabulary. In the study, writing fluency and writing accuracy are derived from two terms, “content” and “language” that is based on the writing scale assessment from the test handbook (2020) of the standardized test chosen in the study (KEY A2).

2.3. Padlet

Padlet is one of the common platforms which have been used in education. It is viewed as a site where online walls can be constructed. This wall works like an online board or a bulletin board where students can post different types of files, such as photos, documents, or multimedia files. The person who creates the wall is able to control the content, change the layout, design the walls, or change the privacy of the wall. The creator can opt to set different backgrounds for the wall. Moreover, Fukuda, Lander, and Pope (2020) state that feedback and instructions can be published by the teachers and students are able to read them or give comments on their friends’ posts. Besides, Kharis, Ebner, and Wijayati (2020) illustrate that lecturers can assign tasks to students, write comments, and all students in the classroom can follow the results. Therefore, students can access all the ideas from their friends rather than a few responses from their neighbor friends. Access to the wall can be published by many ways, such as: a QR code or direct link. Additionally, the designer is able to manage the visitors’ rights by allowing them to only read, write on the wall or revise their own posts. Until it is erased or the wall is deleted, a wall’s material is permanent. Padlet is capable of allowing several writers to post comments simultaneously. When someone writes a post on a Padlet wall, it will be displayed in real-time. Padlet operations, like every other web tool, involve an internet connection. Because participants do not have to register an account and state their names to be involved in Padlet submission, their confidence or their uncertainty about having the correct answers or not are minimized (Lestari & Kurniawan, 2018). Kharis et al. (2020) also point out that Padlet helps to raise students’ grades and encourages students to involve actively in classroom activities.

2.4. Learner attitude

The achievements in a language are obviously impacted by students’ attitudes towards this target language. In other words, students can only master language skills if they are favorably involved in the language by themselves and express a positive disposition in the learning process. Besides, Practitioners in language teaching and learning, such as teachers, researchers, and learners, should consider a positive attitude as it supports second language learning. Therefore, it seems that learners’ attitudes probably affect their achievements in approaching and absorbing the target language.
Attitude is an abstract idea and is also defined by many researchers. According to Baker (1988), some attitude characteristics are regarding cognition, favorability, and experience modification. Saracaloglu (2000) states in a study that interest, values, and tendency are the features of the affective domain, and they all make an impact on attitudes. Moreover, the temperament to react positively or negatively to a thing is termed an attitude. In addition, the belief in defining the attitude that a person with strong positive beliefs will have a positive attitude and vice versa. Wenden (1991) indicates a widely accepted definition of attitude. He demonstrates that the term attitudes have three components. The views about the participants’ object shape the cognitive, which is the first domain. The affective domain is concerned with the feelings about an object, and the final component is behavioral, which focuses on the consistent acts or behavioral intents in relation to the item. His definition of attitudes and their domains were employed in the current study.

2.5. Research gap and conceptual framework

Plenty of research shows collaboration in writing can improve writing ability. Besides, Padlet is an online platform that can assist and engage collaborative environment. Hence, these two issues provoke the writer’s interest. Firstly, according to Pham and Duong (2017), English writing proficiency achievement is significant among English competencies. When the study of Nguyen and Bao (2020) shows positive attitudes of the use of blogs in teaching English writing skills among teachers and students, Pham and Duong (2017) illustrate that a competence-based approach is used to develop a writing course. However, a prevalent writing teaching technique, namely collaborative writing, has seemingly not been applied much to improve writing teaching and learning in the Vietnamese context. Secondly, the support of technology can also be utilized to improve English writing teaching and learning. When there are enormously educational platforms created to assist the teaching and learning process, Padlet is one of them that is an eminent online board used considerably. This platform supports the learning environment in terms of creating collaborative learning and engaging the students in the lesson (Fukuda et al., 2020; Lestari & Kurniawan, 2018). Although there are aforementioned studies about collaborative writing and the Padlet platform, a combination of both to impact students’ writing ability has not been carried out in Vietnam. Therefore, the authors decided to fill in that gap. The theoretical-conceptual framework below is created to illustrate the primary components which are selected for the study.

![Figure 1. Conceptual framework of the study](image-url)
3. Methodology

3.1. Research design

The experimental design is employed in the study. The participants in the study were classified into two groups: the Experimental Group (EG) and the Control Group (CG). The experimental group underwent collaborative writing through Padlet while communicating writing tasks instructed the control group. There was a pre-test, a treatment, and a post-test. Afterwards, a questionnaire was used to collect data to investigate how participant students respond to collaborative writing via Padlet in EG. The CG also experienced the same tests as the EG. There were two dependent variables in the study: students’ writing performance measured by the tests and the students’ attitudes collected through the questionnaire. The study was during the teaching and learning time of English 1 subject at Vien Dong College.

3.2. Sampling

The sampling method used in the study is convenient sampling. According to Fraenkel and Wallen (2009), convenience sampling is available when a random or systematic nonrandom sample is difficult to carry out. The students’ levels were reliable when they took part in the placement test before and were divided into four different groups of English communication. Particularly, the participants were 61 freshmen who were non English-majored in two English-1 classes that the writer was responsible for. All participants were 18 to 21 years old. 29 students were in the control group, while there were 32 ones in the experimental group. They majored in business administration, accounting, nursing, beauty care, electricity, information technology, and automobile. They all had to take an English placement test before learning English 1. In other words, their English ability was at the same level.

3.3. Instruments and data collection

There were two instruments used to collect data in the study: tests and questionnaires. A writing pre-test and a writing post-test were employed to determine whether the writing performance improved. The writing questions were adapted from a Cambridge University Press preparation material (2020). Test takers have to create a piece of writing within 25 - 35 words; the topics are note and postcard writing. Both groups underwent the tests before and after the treatment. The experimental group was instructed in collaborative writing via Padlet, while the control group was taught by communicative writing tasks. The students’ writing scores were then marked by two examiners with a writing rubric to measure the impact on their writing performance. After that, the summary data were descriptively reported.

Dörnyei and Taguchi (2010) state that a questionnaire has several advantages, such as time, effort, and financial resources. The questionnaire is quite appropriate to find out what people think, particularly attitudes. Therefore, a questionnaire adapted from Farrah (2011) was employed to measure the participants’ attitudes toward the application of collaborative writing via Padlet in a writing class. There were two parts to the questionnaire. The first section asked personal information of the students. The following part was designed in multiple-choice questions with a five-point Likert scale from 1-5. It has positive and negative statements about collaborative writing via Padlet, and they are categorized into two smaller sections A and B. Part A contained 27 statements investigating the attitudes towards the use of collaborative writing via Padlet such as writing skills, other skills, motivation and confidence, collective effort, and responsibility, problem solving and knowledge exchange, and academic improvement. Besides, part B had five negative statements related to collaborative writing via Padlet. Specifically, the groups of questions were related to the attitude’s domains, such as: cognitive, behavioral, and affective.
3.4. Data analysis
Quantitative data from the tests and questionnaires were then analyzed by the software IBM SPSS 26. The reliability of the questionnaire was firstly ensured by Cronbach’s Alpha figure at 0.89. Besides, by having been categorised into the correct level after the placement test at Vien Dong College, the students’ ability was equivalent before being under treatment. Additionally, the writing questions in the tests were taken from a standardized preparation material from Cambridge University Press. Moreover, the tests were scored by two examiners with a clearly consistent rubric. Therefore, these shape the reliability of the study.

According to Fraenkel and Wallen (2009), “Validity refers to the appropriateness, meaningfulness, correctness, and usefulness of the inferences a researcher makes.” In terms of questionnaire, although it was constructed basically from one used in Farrah (2011), the writer had a chance to adjust and adapt the content. Initially, it was also translated into Vietnamese to ensure that all the participants completely comprehended the content. It was also piloted to two English lecturers for error checking in terms of spelling, meaning, and translation. After that, it was once fulfilled by a few English-majored students to find out the problems in logic, cohesion, or others. In his book published in 2012, Creswell states that “the study will be accurate because the information draws on multiple sources of information, individuals, or processes”. Therefore, the validity of the current study was enhanced by using two sources of data, including the test score and questionnaire response.

4. Results and discussion
The impact of collaborative writing via Padlet is presented and interpreted in terms of the pre-test and post-test results, the overall scores, and the two main components: writing accuracy and writing fluency. The students’ attitudes collected from the questionnaire are analyzed afterward.

4.1. Impact of collaborative writing via Padlet on tests’ results
Two tests were scored with the components of writing fluency and writing accuracy after the participants involved. The overall scores were also examined to investigate the differences before and after the treatment used in the study. The following parts of the chapter present the analyses of those components of the tests.

Table 1
Results of the scores

<table>
<thead>
<tr>
<th></th>
<th>Pre-test</th>
<th>Post-test</th>
<th>Sig. (2-tailed) of paired-samples t-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CG</td>
<td>6.82</td>
<td>5.83</td>
<td>.00</td>
</tr>
<tr>
<td>EG</td>
<td>6.38</td>
<td>6.21</td>
<td>.414</td>
</tr>
<tr>
<td>Sig. (2-tailed) of independent samples t-test</td>
<td>0.101</td>
<td>0.188</td>
<td></td>
</tr>
<tr>
<td>Accuracy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CG</td>
<td>7.03</td>
<td>5.79</td>
<td>.00</td>
</tr>
<tr>
<td>EG</td>
<td>6.09</td>
<td>7.46</td>
<td>.00</td>
</tr>
</tbody>
</table>
In the overall results of the pre-test, the $p$-value (0.101) is higher than the alpha (0.05). Therefore, there was no significant difference between the EG and CG in the pre-test mean overall score. However, the $p$-value (0.188) is more than alpha (0.05) in the overall post-test. It means that the post-test’s overall scores were not significantly different.

In the CG, when the $p$-value (0.00) is lower than alpha (0.05), it can be seen that the overall score of the CG is significantly different in the pre-test and post-test. In other words, the overall score decreased remarkably. It is 0.414 in the EG and the figure is more than alpha (0.05). To conclude, when the mean overall score slightly reduced from 6.38 to 6.21, the participants in the EG did not improve their overall writing performance significantly.

### 4.1.1. Students’ writing accuracy

Table 1 also shows the mean difference in writing accuracy between two groups. In the pre-test, when $p$-value (0.002) is smaller than the alpha (0.05), there was a significant difference between the EG and CG in the pre-test accuracy. Because of this dissimilarity in the pre-test, the mean difference in the post-test should be only concentrated on the EG. The writing accuracy was then measured in the post-test. The $p$-value (0.00) is lower than the alpha (.05). However, due to being difference in the mean score in the pre-test, the mean difference in the post-test should be only focused on the EG.

In a comparison of the pre- and post-test in the CG, the $p$-value (0.00) is lower than the alpha (0.05), and the mean writing accuracy score fell from 7.03 to 5.79. It can be concluded that this drop is significant, and it means students in the CG wrote less accurately. However, the mean score of writing accuracy in the EG was increased from 6.09 to 7.46 and $p$ value (0.00) was less than alpha (0.05). In other words, the writing accuracy level in the EG improved significantly after the treatment.

### 4.1.2. Students’ writing fluency

The statistics in the last section of the table show the mean difference in writing fluency among the two groups in the tests. The mean scores were 6.62 in CG and 6.67 in the CG. Additionally, the difference in the pre-test’s writing fluency is not significant when $p$-value (0.884) is more than the alpha (0.05). The writing fluency was measured again after the treatment to indicate whether there were any significant changes in both groups. The EG has a mean score at 4.95, and it was lower than the CG (5.87). The $p$-value is .029, and it is more than alpha (.05). It can be seen that the mean scores of writing fluency in the two groups significantly decreased.

To calculate the mean difference between the pre-test and post-test’s writing fluency of both groups, a paired sample t-test was used. As can be seen, the $p$-value (.018) is lower than alpha (.05) in the CG, showing that the writing fluency of the CG is different significantly in the pre-test and post-test. In other words, the writing fluency score fell remarkably. The EG also had the $p$-value of .000 and it is less than alpha (.05). It can be said that the writing fluency of both groups dropped significantly.
4.2. Students’ attitudes

The students’ attitudes towards collaborative writing via Padlet are presented below.

Table 2
Students’ attitudes towards writing skill

<table>
<thead>
<tr>
<th>Questionnaire items (Writing skill aspects)</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>It assisted me in creating a better paragraph.</td>
<td>3.68</td>
</tr>
<tr>
<td>It helped me brainstorm better.</td>
<td>4.31</td>
</tr>
<tr>
<td>It helped me use sentences and transitions more effectively.</td>
<td>3.71</td>
</tr>
<tr>
<td>It helped me identify errors in part of speech</td>
<td>4.03</td>
</tr>
<tr>
<td>It helped me avoid grammatical errors.</td>
<td>3.75</td>
</tr>
<tr>
<td>It helped me avoid mistakes in spelling, punctuation and capitalisation.</td>
<td>3.59</td>
</tr>
<tr>
<td>Average mean score</td>
<td>3.84</td>
</tr>
</tbody>
</table>

The data in the table above demonstrates students’ self-evaluation of their writing skills after learning with collaboration and Padlet. Generally, they believed that their writing ability was enhanced by learning with collaborative writing via Padlet platform. Particularly, the statement about better brainstorming achieved the highest mean score (M = 4.3). Furthermore, in terms of language or writing accuracy, most of them evaluated positively when they responded that collaborative writing via Padlet improved their usage of sentences, transition (M = 3.7), part of speech error recognition (M = 4), and grammatical error avoidance (M = 3.7).

Table 3
Students’ attitudes towards other skills

<table>
<thead>
<tr>
<th>Questionnaire items (Other skills)</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>It stimulated critical thinking.</td>
<td>4.12</td>
</tr>
<tr>
<td>It developed communication skills.</td>
<td>4.18</td>
</tr>
<tr>
<td>It allowed me to use skills that are not in the individual assessment.</td>
<td>3.96</td>
</tr>
<tr>
<td>Average mean score</td>
<td>4.08</td>
</tr>
</tbody>
</table>

Students positively agreed that other skills were also enhanced. The mean scores were around 4. They illustrated that their critical thinking and communication skills were improved by collaborative writing via Padlet (M = 4.12 and M = 4.18). Moreover, working in groups helped them utilize skills they did not have in the individual performance (M = 3.9). Specifically, they responded that their critical thinking and communication skills were boosted.
Table 4
Students’ attitudes towards motivation and confidence

<table>
<thead>
<tr>
<th>Questionnaire items (Motivation and confidence)</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>It helped me study in a more relaxed learning environment.</td>
<td>3.81</td>
</tr>
<tr>
<td>It helped me involved actively in learning.</td>
<td>3.78</td>
</tr>
<tr>
<td>After learning collaborative writing via Padlet, I felt more confident collaborating with other students.</td>
<td>3.68</td>
</tr>
<tr>
<td>After learning collaborative writing via Padlet, I am keen on more in writing.</td>
<td>3.53</td>
</tr>
<tr>
<td>Average mean score</td>
<td>3.70</td>
</tr>
</tbody>
</table>

In terms of motivation and confidence, students also drew that their motivation and confidence were raised after the treatment. Specifically, they stated that the learning environment was more relaxed when they had collaborative writing via Padlet with their friends ($M = 3.8$). The treatment also helped them participate actively in the learning process ($M = 3.7$). Additionally, they were fond of writing more after the experience ($M = 3.53$) and were willing to collaborate with others ($M = 3.68$).

Table 5
Students’ attitudes towards collective efforts and responsibility

<table>
<thead>
<tr>
<th>Questionnaire items (Collective efforts and responsibility)</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>It helped me concentrate on collective efforts rather than individual efforts.</td>
<td>3.71</td>
</tr>
<tr>
<td>It helped me be more responsible for myself and my group.</td>
<td>4.25</td>
</tr>
<tr>
<td>It helped us to support other weak students in a group.</td>
<td>3.87</td>
</tr>
<tr>
<td>After collaborative writing via Padlet, I felt more cooperative in writing with others.</td>
<td>3.62</td>
</tr>
<tr>
<td>Despite having disagreement, my group reached the consensus.</td>
<td>3.34</td>
</tr>
<tr>
<td>Average mean score</td>
<td>3.75</td>
</tr>
</tbody>
</table>

Students also expressed their positive responses in collective efforts and responsibility. Particularly, collaborative writing via Padlet made them more responsible for group work and themselves ($M = 4.25$). Besides, they agreed that this activity could support weak students in item CER15 ($M = 3.87$). They also stated collaborative writing and Padlet oriented them to the collective efforts more than individual ones ($M = 3.7$).
Table 6
Students’ attitudes towards problem-solving and knowledge exchange

<table>
<thead>
<tr>
<th>Questionnaire items (Problem-solving and knowledge exchange)</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>It increased knowledge, information, and experience exchange.</td>
<td>4.43</td>
</tr>
<tr>
<td>It eased problem-solving.</td>
<td>4.12</td>
</tr>
<tr>
<td>It helped me receive useful feedback.</td>
<td>4.09</td>
</tr>
<tr>
<td>In collaborative writing via Padlet, I had chances to present my ideas.</td>
<td>4.00</td>
</tr>
<tr>
<td>I learned other ways to support for my opinions.</td>
<td>4.09</td>
</tr>
<tr>
<td>Average mean score</td>
<td>4.14</td>
</tr>
</tbody>
</table>

With all the means scores of the items were more than 4, students’ attitudes were positive, acknowledging that collaborative writing via Padlet assisted them in problem-solving and knowledge exchange. Specifically, they stated that the treatment helped them in increasing the exchange of knowledge, information, and experience ($M = 4.43$). They also highly evaluated the improvement in their problem-solving skill after collaborative writing via Padlet ($M = 4.1$). Additionally, the treatment created chances for them to express their ideas and learn to support their opinions ($M = 4$).

Table 7
Students’ attitudes towards academic enhancement

<table>
<thead>
<tr>
<th>Questionnaire items (Academic enhancement)</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>It increased comprehension levels.</td>
<td>4.43</td>
</tr>
<tr>
<td>It increased writing performance.</td>
<td>4.12</td>
</tr>
<tr>
<td>I finished more tasks when cooperating with others.</td>
<td>4.09</td>
</tr>
<tr>
<td>It was an exciting experience.</td>
<td>4.00</td>
</tr>
<tr>
<td>Average mean score</td>
<td>4.16</td>
</tr>
</tbody>
</table>

Similar to the results mentioned in the previous sections, students’ attitudes towards their academic improvement after the treatment were totally positive. Most of them not only agreed that this activity made an impact on their comprehension level and writing performance ($M = 4.4$ and $M = 4.1$), but they also stated collaborative writing via Padlet was appealing ($M = 4$), and they were able to achieve more tasks after experiencing this activity ($M = 4$). It can be clearly seen that collaborative writing via Padlet positively influenced on students’ academic improvement, especially in comprehension level and writing performance.
Table 8
Students’ attitudes towards negative comments

<table>
<thead>
<tr>
<th>Questionnaire items (Negative comments)</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>It was a waste of time due to continual explanations to others.</td>
<td>2.34</td>
</tr>
<tr>
<td>It was challenging to force group members to involve in tasks in collaborative writing via Padlet actively.</td>
<td>3.21</td>
</tr>
<tr>
<td>It made me spend more time planning than individual writing.</td>
<td>3.34</td>
</tr>
<tr>
<td>It made me spend more time on idea brainstorming than individual writing.</td>
<td>3.62</td>
</tr>
<tr>
<td>It made me spend more time on spelling, punctuation, and grammar check than individual writing.</td>
<td>3.62</td>
</tr>
<tr>
<td>Average mean score</td>
<td>3.22</td>
</tr>
</tbody>
</table>

Students disagreed with negative comments towards the implementation. Less than half of students did not think that they had to explain most of the time (M = 2.34). They also responded that it was not difficult to make group members focus on the tasks (M = 3.2), and they did not spend more time in planning rather than in solo writing (M = 3.3). However, they realized that they brainstormed more in collaboration rather than individual work (M = 3.6) and focused more on checking (M = 3.6).

4.3. Discussion and implementations

The finding revealed the answer to the research question 1 - “To what extent does collaborative writing via Padlet make an impact on student’s writing performance?” Firstly, data show that collaborative writing via Padlet impacted student’s writing overall score. In fact, the overall score dropped insignificantly after students were instructed to collaboration via Padlet in writing lessons. It is different from former studies (Hirvela, 2011; Pham, 2021) showing that writing performance was improved with collaborative writing. The consequence was possibly derived from the fact that students had to deal with other testing items in the test. Beside the writing question in the test, they managed to complete question items in terms of grammar, vocabulary, reading or listening.

However, the findings align with previous research that students benefit from collaborative writing in terms of language accuracy (Storch, 2005). When cooperating with others, students certainly learned and exchanged with their friends. As a result, their language accuracy was influenced, and they performed well on the writing test. On the other hand, data about writing fluency shows a different trend compared to previous studies. While writing fluency was viewed as not being improved significantly as writing accuracy (Biria & Jafari, 2013; Zabihi & Rezazadeh, 2013), it dropped considerably in the present study. The unexpected outcome of writing fluency possibly came from the time pressure. When students had to handle other test items, they were put in the situation of rushing. Consequently, they might lack of acceptable number of words in finishing the writing question.

The findings are also in line with previous studies about the impact of Padlet platform on a collaborative learning environment. First, when the data indicate students’ writing accuracy was improved, it is clear that the study is steady that the collaborative environment supports students
to write better. It is also consistent with Zhi and Su’s study in 2015 that Padlet can be utilized for collaborative tasks in the language classroom. Additionally, the findings are appropriate with the conclusion from Fuchs (2014) that Padlet can be employed efficiently for language tasks. Furthermore, when the participants’ writing accuracy was increased, the current study suits the previous research of Biria and Jafari (2013), and Zabihi and Rezazadeh (2013), showing that language accuracy was increased among students who were instructed by collaborative writing. Finally, students’ suggestions focused on the aspect of teacher. It is clear that they expected more in member exchange and mix-level arrangement from the teacher. They were also look forward to more practical topics and less monitoring time from the teacher.

Towards the attitudes of the students implied in the second research question - “What are the students’ attitudes towards collaborative writing via Padlet?”, the data from the questionnaire clearly revealed that participants responded positively to collaborative writing via Padlet. It is also in accordance with previous studies about collaborative writing and Padlet. When collaborative writing was proved to benefit students considerably in several aspects (Baker, 2013; Storch, 2019; Talib & Cheung, 2017; Vanhanen-Nuutinen, 2006), the current study is also consistent with the previous research. In fact, participants responded that collaborative writing supported them in many ways. It not only strengthened their writing skills and other skills but also boosted their motivation and confidence. They also presented that they were more responsible in group working and knew how to express their opinions in clearer and more persuasive ways. It is steady with the claim from Hirvela (2011).

As writing skill is challenging to learn, students should figure out a way to improve their writing learning. Hence, Padlet and collaboration can provide some implications. Students are encouraged to apply technology to improve their writing with the support of some platforms and websites like Padlet or others. Additionally, when showing positive attitudes towards Padlet, students have advantages when learning writing with this platform. When being exposed to an environment immersed with collaboration and Padlet, it is clear that they can develop their writing accuracy by learning, observing, and exchanging ideas and opinions with their friend more effectively and efficiently.

There are also implications for English teachers. Firstly, collaborative learning and technology assist writing teaching and learning efficiently, particularly via Padlet online platform. Therefore, if teachers have to focus on language accuracy and desire to train students in accurate writing, collaborative writing via Padlet can be a solution. Second, cooperating among students should be well-monitored so that teachers can support learning effectively. Finally, the time for giving feedback needs to be calculated carefully to bring maximum benefit to the whole class when all of the students can observe and learn from their friends.

5. Conclusions and recommendations

The study was conducted to explore the Padlet platform’s effects on students’ writing performance and their attitudes towards the implementation. Some crucial findings were concluded.

For the first research question, “To what extent does collaborative writing via Padlet make an impact on student’s writing performance?”, collaborative writing via Padlet assisted the writing learning and teaching process. First, the overall scores fell in both groups. However, the drop among students learning writing with collaboration via Padlet was insignificant compared to other groups. Second, this combination made an impact on students’ writing accuracy. In other words, students who learned writing with collaboration on Padlet earned better performance in language accuracy rather than their friends who did not. Finally, the writing fluency level decreased after
the participants experienced collaborative writing via Padlet. The result was not in correlation with
former studies that writing fluency increased insignificantly. For research question 2, “What are
the students’ attitudes towards collaborative writing via Padlet?”, the data collected from
the questionnaire showed that students were motivated to learn writing with the support from the
collaboration and Padlet. In other words, they had positive attitudes towards this combination.
Particularly, they brainstormed better with collaboration via Padlet in writing and were more
involved in the group duties. They also indicated that it helped them to earn more knowledge,
information, and new experience in exchanging with their peers. Besides, their level of
comprehension was increased as they were instructed in the environment of collaboration and
technological support of Padlet. In conclusion, the study illustrates that collaborative writing via
Padlet brought an impact on students’ writing accuracy. Additionally, they had positive attitudes
towards collaborative writing via Padlet due to several benefits. The main conclusions have been
demonstrated.

Though having some limitations, there are some suggestions for further studies to make
them more practical and appropriate. The first suggestion is about the participants. In further
research, the results will be clearly more significant if the participants are in a larger number or if
they are English-majored students. Another suggestion is about the instrument. One more
instrument might be used so as to investigate the attitudes among students. Additionally, other
writing task types, such as paragraphs or essays are suggested for further research. Last but not
least, writing fluency could be paid more attention. In fact, when the current study shows it dropped
significantly, the former studies had different results on writing fluency. In conclusion, future
research presumably could consider those recommendations to have better results in applying
collaborative writing via Padlet platform to improve writing performance.

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