

Research Article

Investigating the Impact of Using a Collaborative Web Platform to Enhance Secondary Level Students' Writing Performance

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Abstract

The use of technology for mundane lessons, such as writing, can lead to a more interactive learning experience for language learners. This study aims to explore the impact of using a collaborative web platform known as Padlet to enhance the writing skills of second language learners. The present research examined the experiences of secondary school students in using Padlet and the impact on their writing skills. The respondents in this study consisted of ten students ranging from the ages of 13 to 14 who were enrolled in a public school in Malaysia. A qualitative approach was employed, and data were collected using a combination of a reflection form and interviews. The findings of the study revealed that real-time collaboration, as well as the use of multimedia features via Padlet, significantly improved engagement, motivation, and writing proficiency as the students were able to write collaboratively, share feedback, and make corrections, altogether contributing to the improvement of one's writing. Nevertheless, technical concerns such as lag and usability issues with the mobile version of Padlet were reported by the participants. In addition, the absence of an auto-correction tool, as well as formatting options that were not intuitive, diminished the writing experience for some students. Although Padlet facilitated active participation, challenges such as technical difficulties and a lack of certain writing tools hindered its full potential in enhancing writing skills. Implications suggest that Padlet possesses potential as an educational tool that can transform conventional practices into a more effective and engaging learning process for students.

Keywords: collaborative web platform, computer-assisted language learning, Padlet, collaborative writing, student engagement

INTRODUCTION

There has been a significant focus on the integration of technology in language education within the framework of Computer-Assisted Language Learning (CALL), which emphasizes the affordances of digital technology to support language teaching and learning. CALL tools have the potential to facilitate interaction, collaboration, and real-time feedback (Chapelle, 2001; Levy, 1997). The Ministry of Education, Malaysia, has developed the Digital Education Policy (DEP) as a part of the Malaysia Education Blueprint (MEB) 2013-2025, which emphasises technology integration into teaching-learning processes in Malaysia (Ministry of Education, 2023). DEP seeks to improve the education system through an educational environment that is technology-enabled, accessible, and sustainable (Ministry of

Education, 2023). The policy also advocates for the use of innovative instructional practices that incorporate the use of technology to enable students' engagement in active learning and collaboration (Nordin & Alias, 2023). On the other hand, the Continuous Professionalism Development Plan (PPB) and the Teacher Professionalism Development Master Plan have been realigned to ensure that teacher knowledge, skills, and attitude are aligned with the requirements of the twenty-first century (Nordin & Alias, 2023). Through these plans, the teaching quality of Malaysian educators will be improved, and they will also possess the professional development and technological competencies to address students' learning needs in this modern technological world (Shuib & Yunus, 2021).

Writing skills are regarded as being more difficult than other skills like listening, speaking, or reading because they require second language learners to effectively comprehend and master lexical and grammatical concepts and apply them appropriately in forming sentences (Govindarajoo et al., 2022). Although writing is a relevant component of English as a Second Language (ESL) education (Jong & Tan, 2021), Malaysian students struggle with writing due to aspects such as choosing the wrong topic, instructional methods, and a lack of feedback (Siddek & Ismail, 2021). A wide range of digital interactive platforms, such as digital boards, collaborative writing platforms, and discussion tools, have been introduced to facilitate student engagement and enhance interaction. In the context of developing students' writing skills, these tools enable learners to express their ideas, conduct collaborative writing, and receive timely feedback. In relation to these developments in technology, there has been an increasing uptake in the use of digital tools and applications in Malaysian schools. One such tool includes Padlet, a collaborative web platform in which users can post comments on a digital wall, and research has demonstrated that it may be useful in improving the quality of the students' writing (Muniandy & Yunus, 2022). The integration of Padlet in teaching and learning can revolutionize writing classes from the mundane to social learning spaces that are cooperative, creative, and enhance efficient discussions (Ting & Shukor, 2022). When integrated into classroom practices, Padlet enables teachers to design meaningful and student-focused learning assignments that improve writing while highlighting the importance of writing as the foundational aspect of language learning.

Despite the increasing trend in the usage of digital applications in teaching and learning, there is still a lack of empirical studies on the role of Padlet to improve secondary-level students' writing skills. Extensive literature focuses primarily on teacher insights and within the primary school context (Ramadhani et al., 2023), but evidence on Padlet usage among secondary school learners is still limited. This research, therefore, seeks to fill this gap by investigating the impact of using Padlet in the secondary school setting.

The two research objectives constructed are shown as follows:

- 1) To investigate the use of Padlet as a learning tool to enhance secondary school students' writing skills.
- 2) To investigate secondary school students' perception of using Padlet for writing.

LITERATURE REVIEW

Student engagement in education involves active participation that students exhibit in their learning processes (Perry, 2022). Numerous educators have identified and classified it as students seeking to participate in the learning process, encompassing emotional, behavioral, and cognitive dimensions, whereby engaged students are not only attentive and involved in academic activities but also emotionally invested in their learning and motivated to succeed (Salhab & Dalher, 2023; Budiastuti et al., 2023). Engagement among students plays an essential role in improving performance (Mohamad et al., 2022; Sudin et al., 2022), framing it as a road to achievement in learning. Engagement in writing can be defined by how often one participates in writing activities and the quality of the feedback they receive and provide

to other users. In other words, it concerns the level of engagement, positive attitude, and participation that students have in the writing process (Sanvicens, 2020). It can be described based on students' willingness to dedicate time and effort to the writing process, their interest in developing ideas in textual form, as well as their determination to constantly improve the quality of the written works. Examples of effective technology integration include the use of collaborative web platforms. For instance, it was reported that students' higher engagement levels on Padlet directly affect their progress in writing since Padlet can enhance active learning and group writing (Phan & Dao, 2023; Suparmi, 2022).

The use of technological tools such as Padlet in writing lessons provides a significant opportunity for students to enhance their writing skills and engage in the learning process actively (Ramadhani et al., 2023). Incorporation of multimedia features in writing can provide more engagement, and individualised feedback can be provided when students are working collaboratively using Padlet (Muniandy & Yunus, 2022). Padlet also enables students to conduct discussions, share writings, and receive feedback from peers as well as teachers in real time, thus making it more communicative and supportive for the students (Fadillah, 2021; Muniandy & Yunus, 2022). If students are involved with technology use, they tend to be active in, share with other students, and discover more effective methodologies that may be useful in improving their educational experience. It is therefore important that technology be incorporated into the classroom with efficiency to contribute positively towards sustaining student interest and achieving better learning outcomes (Sadry, 2022).

In this study, collaborative writing is also incorporated in the learners' use of Padlet since it functions as a collaborative web platform that provides students with a virtual wall to contribute to their collective work. Collaborative writing refers to a type of writing in which two or more writers actively contribute to the process of composing a text and have equal decision-making over its production (Coffin, 2020). It adheres to manners of group-wise study, learning by effective problem solving, and accomplishing tasks (Coffin, 2020; Aldossary, 2021). It fosters critical thinking and metacognitive processes, furthering students' appreciation of different points of view and expectations of the audience (Coffin, 2020; Sanvicens, 2020). This method enhances writing skills and improves group responsibility and involvement (Coffin, 2020). The implementation of collaborative writing into language learning enhances interaction and cooperation, so the quality of the writing work would improve (Tuan & Nga, 2022).

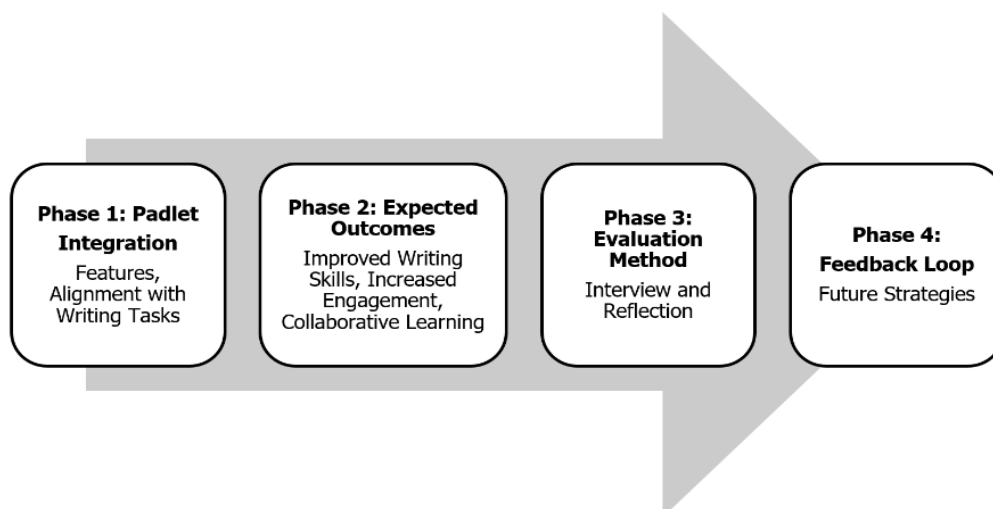


Figure 1: Framework for Padlet integration in writing instruction

Figure 1 shows the integration of Padlet in the writing instruction for this study. Phase 1 refers to the Padlet integration phase, whereby educators choose and map Padlet's features to writing tasks that would engage the students and foster collaboration. In phase 2, the expected outcomes that can be attained are outlined, such as enhanced writing skills, as well as cooperative learning, engagement, and positive indication of their writing proficiency. Phase 3 shows that the outcomes are evaluated using interviews and reflections to determine the impact on students' writing skills. The fourth and final step involves a feedback loop that will integrate formative assessment findings into subsequent instructional practices to enhance teacher practices continuously. This aligns with literature that supports the various teaching practices that require reflective practices in the enhancement of teaching methodologies (Picauly & Listyani, 2024). Altogether, the use of Padlet in this study facilitates the participation of all the learners, as everyone is expected to contribute to the document as well as assist in the editing process. Using Padlet, the students post comments on others' contributions, which can help in immediate peer assessment and promote teamwork. Through writing via Padlet, the students conduct meaningful discussions and reflection in achieving higher understandings and mastery of the writing process.

METHODS AND SAMPLING

The current study employed a qualitative research method involving second language learners in the secondary level context. Anleu (2005, as cited in Suryani & Daulay, 2022) defines qualitative research as a scientific way to obtain comprehensive data on values, opinions, and the social environment and behaviors. A total of ten Form 2 students aged 13 to 14 years old who were enrolled in a public school in Sabah, Malaysia, participated in this study. The criteria for inclusion required that the students be actively involved in English writing lessons using Padlet for a total of five weeks. To obtain sufficient qualitative data regarding the use of Padlet in the enhancement of writing skills, the study used a reflection form to answer the first research objective and interviews to answer the second research objective.

After the students had used Padlet for writing for a total of four continuous weeks, data collection was employed using a reflection form in the fifth week to gather data regarding the students' use of Padlet for writing. In addition, the data collection process included interviewing the participants in Week 6 after they used Padlet. These interviews were conducted after school or during after-school interview sessions. The reflection form and interviews gathered specific details regarding Padlet use, including aspects such as the Padlet features, difficulties that occurred, and how it led to improvement of outcomes. In this way, the students were able to spend more time reflecting on their experience of using Padlet as well as their preferences and behaviors it impacted in writing tasks.

Table 1: Padlet Weekly Topics and Writing Tasks.

Week	Topics Covered	Writing Tasks
2	Saving Money	Introduction to Padlet. Write sentences about saving money using one of the following terms: "always," "usually," "sometimes," or "never."
3	Poem: My Hero	Describe two significant heroes.
4	Exploring Transport	Share a favorite mode of transport and a peculiar one.
5	Writing an Email	Write an 80-word email to Marcella with information.

Table 1 illustrates the writing tasks of the students during Weeks 2 to 5, in which Padlet was integrated into the learning processes of the students. In the second week, the students were taught about Padlet and

were given guidelines on how it can be used. In the writing task, they wrote about what they always, usually, sometimes, or never do in saving money. Simplification of saving money was chosen to ensure that all the students would be able to write about the topic at that level easily, and the writing task helped to engage the students with Padlet and gave the teacher information about the students' saving behaviors.

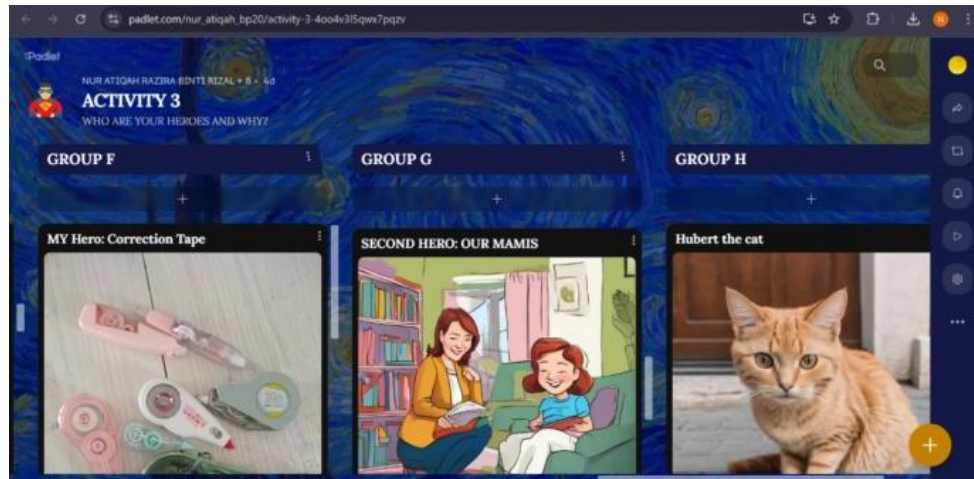


Figure 2: 'My Hero' writing task

In the subsequent week, the use of Padlet was still employed in the lesson tasks, whereby students had to share and comment on their poems regarding the most influential heroes in their respective groups (Fig. 2). In Week 4, students shared and discussed one preferred and one strange type of transportation, as illustrated in Figure 3 below.

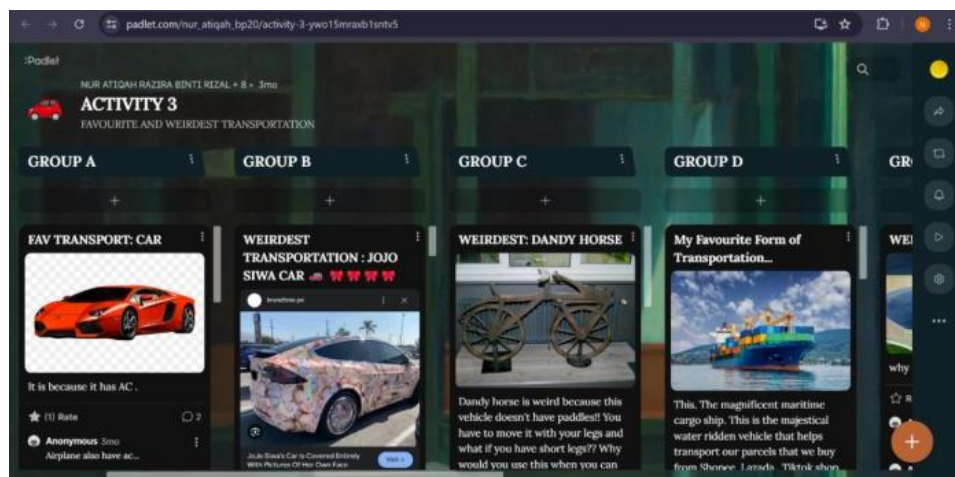


Figure 3: 'Exploring Transportation' Writing Task

This continuous use of Padlet enabled collaboration and engagement, while also providing the students with opportunities to receive feedback and improve their writing skills through interactive elements. This approach ensured that students could spend most of their time using the platform and thus could get better familiarity with the platform's performance. As indicated in Table 1, in the fifth week, the students had to compose an 80-word email to Marcella using the information that was given. Using Padlet on a weekly basis, along with qualitative interviews and reflections in Weeks 5 to 6, provided rich data for the

assessment of the extent to which Padlet affected students' writing performance and their perception of the tool.

Content analysis was conducted to analyze all the data obtained from the interview and self-reflection. The data analysis for this study followed a systematic qualitative approach based on Miles and Huberman's (1994) three key steps: data reduction, data presentation, and data verification. First, data reduction entails classifying the textual data collected from reflections and interviews to address research questions concerning students' perceptions about the impact of Padlet on writing. The interviews that were conducted were transcribed; the data gathered were sorted and textualized to reflect the different insights of Padlet in facilitating the improvement of the writing performance. In the process of the data presentation stage, the qualitative data collected were generalized in a manner that introduced variance concerning students' experience and perspective so that the two researchers could compare them and make a pattern with regard to the effectiveness of using Padlet. Lastly, data verification sets a process to combine these conclusions to get a generalized conclusion of the impact of Padlet and the implications for instruction. It provided a chance for exploring how Padlet can contribute to the improvement of writing and provided a model for educators to focus on the ways of improving their practices.

To ensure the validity and reliability of the study, several extensive measures were taken in the research. The qualitative study method was chosen deliberately to provide broader insights into the extent of effectiveness of using Padlet in developing writing skills among the students and to acquire a deeper understanding of the gathered sources of data through the analysis of the participants' insights. To ensure the validity of the study, the research employed two qualitative data collection methods, including interviews and post-lesson reflection sessions. The questions that were employed in interviews and reflection were appropriate to acquire a wide insight into students' experiences related to using Padlet in their writing tasks. These tools were specifically intended to encourage the respondents to respond in further detail about the impact of using Padlet on their writing patterns.

FINDINGS & DISCUSSION

The results of the study revealed that the utilisation of Padlet played a crucial role in enhancing the secondary school students' writing performance. Drawing from the results of the reflection form and interviews, the students discussed Padlet's usefulness by expressing diverse opinions, pointing out that compared to more conventional tools, Padlet was very engaging, and actively encouraged idea sharing and participating in the process, which contributed to the overall students' writing skills. The analysis entailed reading and synthesizing the data into appropriate themes and sub-themes. As shown in Table 2, the qualitative content analysis was performed, where the texts were extracted and examined for their recurring themes and sub-themes, with careful consideration given to the diverse contexts of the secondary school students.

Table 2: Themes and Sub-Themes of Study

Research Objective	Themes and Sub-Themes
1. To investigate the use of Padlet as a learning tool to enhance secondary school students' performance in writing.	<p>Theme 1: Useful Padlet Features in Enhancing Writing. Sub-Themes: AI-Generated Images, Rating System, Collaboration with Peers, Customization, and Personalization.</p> <p>Theme 2: Impact on Writing Experience. Sub-Themes: Enhanced Writing Skills, Motivation, and Engagement.</p>

2. To investigate secondary school students' perception of using Padlet in writing.

Theme 1: Affordances of Using Padlet for Writing.

Sub-Themes: Real-Time Feedback, Enhanced Collaboration, Enhanced Creativity, Accessible and Convenient, Peer Learning.

Theme 2: Challenges of Using Padlet in Writing.

Sub-Themes: Lack of Auto-Correction, Interface Complexity, Non-Intuitive Formatting Options, Lagging and Performance Problems, No Autosave Feature, Mobile Version is Not User-Friendly, and Difficulty in Navigating and Deleting Content.

Research Objective 1: To Investigate the Use of Padlet as a Learning Tool to Enhance Secondary School Students' Performance in Writing.

Students' responses in the reflection forms were analysed to answer Research Objective 1, which aimed to investigate how the use of Padlet improved secondary school students' writing skills. The findings were categorized into two main themes, namely Padlet features that the students found useful for writing, as well as the impact of Padlet on the students' writing.

Useful Padlet Features in Enhancing Writing

a) AI-Generated Images

In this study, it was revealed that Padlet's ability to integrate various multimedia elements, such as images and AI-generated pictures, was a standout feature for the students. The results of the reflections indicated that three students found the most engaging and valuable aspect of using Padlet to be the incorporation of multimedia, particularly images and AI-generated pictures. For example, Participant 1 described,

“The feature that we find effective is the AI-generated picture tool because if you do not have a photo, you can search for one.”

This highlights how the inclusion of multimedia can enrich the writing process by providing visual aids that enhance understanding and engagement. Similarly, Participant 2 noted,

“The ‘I can't draw’ feature helps us to search for pictures that we want easily.”

The study implies that with Padlet's engagement of its features, particularly the AI-generated picture tool, promoted heightened engagement as well as satisfaction among the students. Suryani and Daulay (2022) have also noted that the use of multimedia, like photos and videos, can reduce stress and increase creativity. This is in accordance with Wu's (2024) claim that the use of graphics can enhance learning in line with the learners' mode of learning. These findings suggest that integrating visually rich content aligns well with students' preferences and cognitive styles, making learning more enjoyable and effective. In addition, the interactive nature of multimedia tools encourages active participation, which is essential for meaningful learning experiences.

b) Rating System

Interestingly, the rating system in Padlet is a unique way of scoring the work by the students and giving them feedback on the quality of their work. Participant 2 stated,

“Padlet is most useful when used for creative writing pieces that are posted online and can include features such as ratings and comment sections.”

This feature allows students to see how their peers evaluate their work, thereby fostering a sense of accountability and encouraging improvement through constructive criticism. By knowing that their written work will be rated by other students as well, there will be a sense of responsibility to produce quality works that will be appreciated by others. The rating that is implemented by Padlet improves the performance of students as the value added through feedback (Mngomezulu et al., 2024). This feature enables peer reviews for formative assessment purposes. As a result, one can deduce that this process of receiving feedback and then giving feedback in return helps with constant improvement while also improving the skill of writing.

c) Collaboration with Peers

Another feature that adds to the efficient way of writing is the availability of the comment section on Padlet. Four students agreed that Padlet facilitates collaboration with peers, and their responses are as follows:

“They can help them to improve their writing by getting the opinion of the other students on what they have written.” (Participant 2)

“...with the comment features, one can post or read other people’s comments, which helps to exchange many vocabularies and grammar in the class.” (Participant 3)

“We are also able to make new friends and know about different writing styles and about some reforms and improve our grammar as well” (Participant 6)

“Real-time collaboration makes me see what my classmates type in real time; this encourages creativity and also helps me in writing.” (Participant 9)

According to the findings of Pham (2021), multimedia educational tools help to increase students’ interest and creativity, while Padlet, as an interactive tool, visually and with the help of various elements corresponding to different learning styles, creates a more interesting and creative learning process. These suggest that the constant updating of the comment section of Padlet not only supports peer feedback in writing but also offers the chance of learning from others, which is essential in the development of writing skills. This mechanism fosters peer-to-peer feedback, allowing students to learn from each other's strengths and weaknesses, refine their writing skills, and gain insight into diverse perspectives. Hence, it plays a crucial role in promoting collaborative learning and enhancing overall writing development.

d) Customization and Personalization

Some other features that make writing engaging on Padlet include the ability to switch between layouts and backgrounds in relation to other writing tools. For example, Participant 10 described,

“The fact that one can change the layout and background of writing makes the writing process enjoyable.”

This is because a student may feel that their work is more personal, and this could create more desire in the students to write. In line with Sutrisno et al.'s (2023) study, the students can learn more when preferred learning styles are provided, with visual aids that coincide with Jong and Tan's (2021) findings, who noted students are motivated when learning aids match their preferences. This implies that when students are exposed to individualized virtual learning spaces, their cooperation and learning of writing skills are boosted greatly.

Impact on Writing Experience

a) Enhanced Writing Skills

The research conducted by Tuan and Nga (2022) indicates that exposure to different writing styles and collaborative editing might enhance skills, highlighting the positive impact of technology. The act of receiving feedback and engaging with peers improves their writing abilities, aligning with ideas that highlight the advantages of varied illustrations and cooperative efforts (Tuan & Nga, 2022). Some of the students shared that they had better writing skills while using Padlet. For instance, Participant 9 said,

“Padlet also helps me to learn from the writings of my classmates and be encouraged to write better writings as well through posts and comments that I come across.”

Similarly, three more participants affirmed,

“The use of different shortcuts in writing makes the work of writing easier and more fun.”
(Participant 1)

“It (Padlet) is effective in group writing tasks and is good for us (students) since it provides the opportunity to learn from friends.” (Participant 8)

“...with Padlet, it is not difficult to write better sentences anymore because of Padlet’s interesting features.” (Participant 10)

These observations are in parallel with the findings stating that information technology, like Padlet, can assist in the writing process (Suparmi, 2022). Hence, these are the reasons why it is important to include the use of tools that enable interactivity and multimedia in educational tools to support the learning process, specifically in writing skills.

b) Motivation and Engagement

The recognition of Padlet’s vibrant features supports studies showing that multimedia tools enhance involvement and promote active learning (Sadry, 2022). A visually appealing platform, such as Padlet, helps to enhance students’ interest in writing and their level of participation. One of the participants agreed that Padlet’s engaging environment motivates students to participate actively in writing tasks and made the following brief statement:

“Padlet encourages writing because of its bright and cheerful tone.” (Participant 1)

The response of Padlet on student motivation and engagement in the results is supported by studies on interactive and visually appealing advances in technology. Research indicates that interactive digital platforms enhance student engagement and engaged participation (Muniandy and Yunus, 2022). Four more participants also stated that Padlet has an impact on students’ motivation and engagement in the classroom.

“Padlet makes writing easier because it is fun and incorporates group work.” (Participant 2)

“Padlet motivates me in writing skills by working with peers shown on the (virtual) walls.”
(Participant 7)

“It (Padlet) is fun and creative.” (Participant 8)

“Padlet helped me with group projects and made it more engaging, though there were some technical problems; Padlet was beneficial for the learning process.” (Participant 10)

These responses described Padlet as a tool that makes them look forward to learning, translating into greater effort and improved writing outcomes. These findings align with research indicating that interactive and visually stimulating technologies boost student engagement and participation (Muniandy & Yunus, 2022). However, to avoid technical difficulties, students can use both mobile and web applications of Padlet and check which mode works best, update the application, or use a reliable connection to the Internet. Teachers can give quick solutions to some of the challenges facing them and allow the students to work in groups to solve the rest of the problems, to avoid students losing their motivation or engagement in using the tool.

Research Objective 2: To Investigate Secondary School Students' Perception of Using Padlet in Writing.

The second objective is to assess secondary school students' opinions on using Padlet for writing. The findings were categorized into two themes, namely the affordances of using Padlet for writing and the challenges of using Padlet.

Affordances of Using Padlet for Writing

a) Real-Time Feedback

Padlet's real-time peer evaluations improve collaborative learning, which is validated by studies showing that timely feedback improves writing abilities and fosters a growth mindset (Rofiah et al., 2024; Mohamad Shah, 2023). The participants supported this, as reflected in a few of the statements provided by the participants:

“I like Padlet because we can write at the same time and correct each other's mistakes right away.” (Participant 9)

The ability to have instant access to the work of their peers and comment on it keeps the students engaged and contributes to the creation of a positive collaborative learning environment. Another student mentioned that this feature was helpful, stating,

“Padlet has made writing more enjoyable as it gives a visually appealing place to share our ideas together at the same time, which makes us participate more.” (Participant 10)

From these responses, the feature creatively opens doors for educators to illustrate a variety of approaches and valuable lessons that would enhance the students' writing skills (Mohamad Shah, 2023). Moreover, frequent saving reduces the influence of lagging on learning, as well as receiving constructive peer feedback keeps the flow of the collaborative learning process as much as possible despite these limitations. Consequently, they can stay motivated in the activity while the technology glitches do not undermine the benefits of receiving feedback.

b) Enhanced Collaboration

Padlet also enhances collaboration in their writing tasks because students can write simultaneously, as affirmed by Participant 4, who described,

“I do like the Padlet application because it helps us work simultaneously while observing the work of the other group members, therefore enhancing our writing skills altogether.”

Other participants agreed with the statements that were made during the interview, such as:

“Padlet has made writing more enjoyable because it opens up a discussion wall to share our ideas.” (Participant 8)

“...the real-time interaction increases my interest in writing tasks.” (Participant 10)

The increase in collaborative learning by using peer evaluations in real-time is consistent with the prior research studies that timely feedback contributes to the improvement of writing skills, is beneficial to students, and encourages the growth mindset (Rofiah et al., 2024; Mohamad Shah, 2023). This feature has the potential to make the educators provide various techniques and valuable writing lessons that would improve language skills. However, to overcome technical issues that might occur, such as lagging and limited formatting options, students may have to prevent excessive overlap of editorial work and save data frequently to avoid incomplete data loss. Thus, they can remain interested in the activity and continue to derive the use of receiving feedback despite possible technical glitches.

c) Enhanced Creativity

Padlet has been lauded for its ability to foster creativity among students. Many participants appreciate how Padlet's features contribute to a more imaginative writing experience. This is mostly because of its various features that facilitate writing tasks. For example, Participant 3 highlighted,

“We like that when we are writing with Padlet, we can use photos and use different means to make a post pop out.”

This provided an example of how the incorporation of multimedia enhances creativity beyond typical writing. Similarly, Participant 7 stated,

“Padlet has many features you can add more make it interesting in writing classes.”

From the participants' responses, it has been directly shown that Padlet can make writing tasks better and more enjoyable due to its features. This is in line with previous studies suggesting that the introduction of multimedia features, such as those found in Padlet, increases engagement and creativity (Suryani & Daulay, 2022), therefore increasing stimulation and writing engagement of the tasks in writing.

d) Accessible and Convenient

Padlet also facilitates ease of use and accessibility, which makes it a positive aspect among learners. One of the statements from the participant:

“I like to use Padlet for writing lessons as it does not complicate the process of writing, and it is easy to use as well.” (Participant 5)

This indicates the ease of the writing process using Padlet in comparison to the other complex digital tools modes that may be difficult for some students to learn. According to the study by Sadry (2022), the design and accessibility of Padlet improve student engagement and minimize obstacles to learning, aligning with research emphasizing the significance of user friendliness in educational technologies. Participant 6 asserted that,

“Padlet, an online tool, is really wonderful and has encouraged us to write short descriptions in detail and in an organized manner.”

This supports how this tool increases the writing flow and organization. The features that make the Padlet easily manageable and easily accessible eliminate hindrances to writing and promote engagement. Therefore, the platform's user-friendly design and quick accessibility streamline the writing process and reduce barriers that might otherwise hinder engagement.

e) Peer Learning

Padlet facilitates peer learning by providing tools that enable students to observe and provide comments on one another's work, which is an aspect that fosters teamwork. Participant 4 was able to support this improvement, stating,

“We can see other people’s POV, have more variation in presenting our opinions, and allow others to comment on their work.”

This feature not only allows students to observe and study from one another but also helps create a sense of teamwork. Participant 9 supplemented these remarks further, saying,

“They can see my work, and I can also see theirs and write comments; it is a group effort.”

This underlines how Padlet promotes peer learning where students can learn from each other as they provide feedback. That is in line with findings showing that peer feedback improves writing quality as well as fosters cooperation, as Fransiska and Hertiki (2023) stated that such features strengthen the cooperative aspect of writing.

Challenges of Using Padlet for Writing

a) Lack of Auto-Correction

The most frequent issues that students mentioned while using Padlet were the absence of auto-correction of spelling and grammar while posting a comment. Participant 6 expressed their concern in this:

“We dislike that Padlet lacks auto correction, which makes it hard for me to find many false errors.”

From this, it indicated that students, depending on such options to correct errors and enhance the grammar, would be frustrated since the Padlet is incapable of auto-checking the grammar. Real-time grammar correction could enhance the usefulness of Padlet (Arouri et al., 2023), who highlighted that such features are crucial for apps for writing. By eliminating this limitation, there would be a favorable chance among the students to improve their writing skills in the desired manner.

b) Interface Complexity

The Padlet interface could be seen as a disadvantage because of the variety of features and options it has. For instance, a few participants described,

“The interface can be a bit confusing at first, but once one gets into it, it can be great.”
(Participant 9)

“When we wished to discard our writing, it was difficult to know where and how to discard the writing because in Padlet, it was not easy to see the instructions.” (Participant 10)

This points out that the first impressions one acquires from the interface of a tool can be negative or can create confusion in the first instance, as it may be regarding this tool in relation to student learning. Difficulty is always a factor with complex systems such as Padlet, and users have shown dissatisfaction with application designs. Simplification of the presented interface might improve the learning process and the overall satisfaction of users (Ghani & Noradzan, 2022).

c) Non-Intuitive Formatting Options

Padlet's non-intuitive formatting options were noted as a challenge, making it difficult for some users to navigate and present their content effectively. For instance, a few participants supported these statements:

“It (Padlet) is difficult for me to understand the layout of Padlet, especially the format, and this was common when using the mobile version of the Padlet application as with the desktop version of Padlet.” (Participant 7)

“Sometimes I have found my text doesn't have the right format,” and added that the options are not very easy to understand.” (Participant 10)

This goes with Ghani and Noradzan's (2022) view that complex interfaces impact user satisfaction and usability. It was noticed that the availability of numerous formatting options that Padlet offers complicates the work of a student and negatively influences the presentation of their work; therefore, it is recommended to improve usability and interface.

d) Lag and Performance Problems

The most common inconvenience that many participants reported was the lagging and slow loading of the Padlet. One of the students highlighted,

“It's (Padlet) a bit slow sometimes.” (Participant 4)

This shows how these performance problems can interfere with writing and influence the perception of the application. Along the same line, Participant 9 stated,

“Sometimes several students edit at the same time, and the system slows down a lot, making it hard to follow the changes.”

The responses suggest that while Padlet offers collaborative benefits, its technical limitations may hinder smooth interaction and potentially reduce its overall effectiveness as a learning tool. These performance concerns interrelate with previous findings on how technological challenges affect the use of digital learning technologies (Ghani & Noradzan, 2022). Performance problems affect educational technology immensely by reducing user participation and learning outcomes (Arouri et al., 2023). Such issues point to the need for better platform stability.

e) No Autosave Feature

The lack of an autosave feature in Padlet, highlighted by students, like Participant 4, who noted,

“It does not save automatically.”

This presents a significant technical challenge. This shortcoming can result in data loss if students forget to manually save their work, potentially diminishing their productivity and confidence in using the tool. Strom (2021) emphasizes that autosave features are essential for maintaining user engagement and preventing the loss of work due to technical issues or user errors. The absence of such a feature undermines the effectiveness of Padlet by introducing risks of data loss, which can lead to frustration and reduced confidence among users. As a result, students may experience increased frustration and decreased confidence, negatively impacting their overall experience with Padlet.

f) Mobile Version is Not User-Friendly

As for Padlet's mobile version, students encountered several difficulties regarding the equipment of the user interface. Participant 2 pointed out usability differences,

"The mobile user interface is a bit confusing to use compared to the desktop user interface."

These responses indicate that problems with usage on selected devices may be encountered while using the respective versions. Hence, the issues encountered can be attributed to a more general problem in educational technology whereby inconsistencies arising from the differences in the layout of the desktop and mobile versions affect the level of usability and, therefore, learners' satisfaction levels (Ghani & Noradzan, 2022).

g) Difficulty in Navigating and Deleting Content

Some students encountered difficulties navigating and managing their content on Padlet. Participant 2 described,

"When we wanted to delete our writing, it was hard to find where and how to delete it as the instructions in Padlet were not clearly stated."

This lack of clear instructions on the platform can lead to frustration and decreased productivity as students struggle with basic tasks. Such navigation and deletion issues underscore broader usability concerns. Researchers have indicated that inadequate directions and complex navigation can frustrate users and diminish productivity (Ghani & Noradzan, 2022).

CONCLUSION

The purpose of this study is to investigate the impact of Padlet on secondary school students' writing and their perceptions towards this collaborative web platform. Some key findings included that the use of Padlet, particularly the collaborative and media insertion options, improved the students' focus on writing skills. The students indicated that Padlet's interactive tool enables students to enhance engagement, motivation, and writing abilities due to options like real-time collaboration and multimedia. In addition, the use of Padlet also helped them in writing activities as it made the tasks fun and allowed learners to give feedback and express themselves creatively. Furthermore, Padlet's accessibility and ease of use ensure that students can focus on improving their writing skills without being hindered by technical complexities. However, there are still some limitations, which are as follows: First, data collection was based on self-report measures only, in which subjects could provide biased information because of social desirability.

Second, the sample was relatively small; therefore, these results should be further investigated in future research. Future research could move further on the results of this study by addressing several questions to achieve an improved understanding of the effectiveness of Padlet in students' learning. To overcome

potential biases in the current study, including increasing the sample size and using more number of participants, more diverse participants, and combining with other data collection methods can be used, for example, teacher interviews, classroom observations, and teacher performance assessment of Padlet. Furthermore, examining the effects of Padlet on the other two language skills, speaking and listening, and, in fact, on general students' comprehension reading level, and exploring the viewpoints of teachers about the functioning of this platform would have been informative regarding the multifaceted educational utility of the tool. Such longitudinal studies could also measure the benefits of Padlet on subsequent development of written language, which would enrich knowledge about the role of different technology tools in enhancing language learning and helping in the development of further proper strategies of their use in classrooms.

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CONFLICTS OF INTEREST

The authors of the manuscript have no financial interest, commercial affiliations, conflicts of interest, or any relationships to report that may appear to influence the nature of the research conducted for this manuscript.

AUTHOR CONTRIBUTIONS

Nur Atiqah Razira Binti Rizal: Conceptualization, original draft preparation, data curation, investigation. **Wirawati Ngui:** Supervision, reviewing, editing. **Emi Emilia:** Reviewing, editing. **Finita Dewi:** Reviewing, editing.

DECLARATION OF GENERATIVE AI

During the preparation of this work, the authors used ChatGPT to enhance the clarity of the writing. After using ChatGPT, the authors reviewed and edited the content as needed and take full responsibility for the content of the publication.

DATA AVAILABILITY STATEMENT

Data available within the article or its supplementary materials.

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