Student learning experience with technology-supported feedback in higher education: a phenomenological study

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Abstract

The integration of technology-supported feedback in higher education has significantly contributed to the advancement of second-language writing, with the potential to enhance learning outcomes, promote student engagement, and facilitate personalized learning experiences. Amid growing interest in examining the role of teacher feedback in higher education, research on the subjective experiences of university-level Thai English as a Foreign Language (EFL) students engaged in technology-supported teacher feedback remains scarce. To address this gap, we conducted a phenomenological study involving twenty-seven first-year Thai EFL students over a 16-week learning period, utilizing the online application Padlet for teacher feedback. Following the course, students participated in a qualitative survey reflecting on their learning experiences. Thematic analysis was employed to analyze the collected data. The results revealed that Padlet proved to be a user-friendly and convenient learning platform, positively impacting students' confidence, motivation, and vital learning skills, including interaction, collaboration, and autonomy. Moreover, it encouraged reflective learning practices, error-based learning, and writing skill enhancement. Nonetheless, the platform's technical and writing limitations posed challenges, disrupting the students' learning experiences and adversely affecting the quality of their work. While Padlet facilitated an effective and engaging feedback process, its open nature triggered feelings of anxiety, fear, and embarrassment among students, who felt exposed as their peers could view their mistakes highlighted by the teacher's corrective feedback. Considering the study's findings, teachers should familiarize students with Padlet's platform specifications before assigning tasks. This would mitigate accessibility challenges that could negatively influence students' learning experience, motivation, performance, and learning outcomes.

Keywords: Padlet, Technology-supported teacher feedback, Learning experience, Digital literacy, Writing accuracy, Reflective learning, Autonomy

Introduction

This study investigates the integration of technology-supported teacher feedback within higher education settings, focusing on the phenomenological experiences of students using Padlet, a collaborative digital platform. The research aims to delineate how such technology can enhance the educational process by fostering enhanced student interaction and learning autonomy, and how it impacts the efficacy of writing skill development. Prior studies, such as those by Arouri et al. (2023) and Rashid et al. (2019), have emphasized the transformative role of interactive platforms in education, demonstrating that tools like Padlet not only facilitate teacher feedback but significantly contribute to improving students' writing abilities. However, while feedback provision is a standard educational practice, its effectiveness hinges on the appropriate selection of technological tools that align with students' specific learning needs and preferences (Rofiah et al., 2023). Existing literature supports the notion that technology integration, such as automated writing assessments (Warschauer & Grimes, 2008) and peer feedback mechanisms (Sari, 2019), can profoundly influence educational outcomes. Moreover, the term technology-supported teacher feedback is used interchangeably with technology-mediated feedback to describe the process of providing feedback or guidance using technological tools or digital platforms as a means of communication and interaction between teachers and students in educational settings (Cunningham, 2019). Depending on the platform, this mediated feedback can be text, audio, or video (Borup et al., 2015).

Despite the growing body of research on the utility of technology in education, there remains a substantial gap in understanding the unique challenges and experiences of students when engaging with technology-supported teacher feedback, particularly in the context of English as a Foreign Language (EFL). Previous investigations have largely concentrated on peer feedback dynamics and its benefits for collaborative and reflective learning (Frison & Tino, 2019; Rashid et al., 2019; Sari, 2019), yet little is known about the nuanced student interactions with teacher-mediated feedback using technology. This study seeks to fill this gap by exploring the detailed experiences of students with Padlet, analyzing both the perceived challenges and the technical constraints that might influence writing accuracy and submission quality. It also aims to highlight the critical role of teacher guidance in helping students navigate these digital tools effectively, addressing potential technical and emotional barriers such as accessibility issues, anxiety, and embarrassment. By focusing on these aspects, the study aims to offer insights into optimizing the use of technology-supported feedback to foster greater writing precision and learner independence.

This research is guided by the following research questions:

1. What are the nuanced perceptions of EFL students regarding their 16-week learning experiences within a writing course that employs technology for the facilitation of teacher feedback?

2. What multifaceted challenges and intricacies are faced by EFL students as they engage in learning and receive feedback through technological means?

Literature review

Padlet, a prominent Web 2.0 platform, is extensively utilized to enhance interaction and collaboration in educational contexts (Deni & Zainal, 2018). This platform provides a versatile, web-based bulletin board where an unlimited number of students can simultaneously engage, discussing and sharing a wide array of content on what are termed 'pads' (Arouri et al., 2023). Renowned for its user-friendly interface, Padlet is designed to accommodate users at varying levels of technological proficiency, making it accessible for both teachers and students (Sari, 2019). It supports multiple languages—over 42, to be exact—and is compatible with a diverse range of file types and documents, including Microsoft Word, Excel, as well as multimedia files like photos, videos, and audio clips (Arouri et al., 2023). The platform's flexibility extends to its accessibility on various devices, such as computers, tablets, and mobile phones, without the need for a personal account, enabling seamless integration into educational settings (Jong & Tan, 2021). Additionally, Padlet has the capability to incorporate external media from various online sources, including Google, YouTube, Instagram, and Twitter, enriching the educational content (Purwanto, 2020). Furthermore, it fosters a competitive and collaborative classroom environment through its notification system, which alerts users about new submissions and interactions (Zainuddin et al., 2020).

  Expanding on its functional diversity, Padlet facilitates a myriad of collaborative learning activities, including brainstorming sessions, discussions, and assessments, which are pivotal for academic engagement and interaction (Rashid et al., 2019). It supports dynamic collaborations not only between students and teachers but also among students, thereby enabling project work and assignments to transcend geographical and physical boundaries (Mahmud, 2019). A notable feature of Padlet is its support for peer-to-peer communication, allowing students to react to, comment on, and discuss their peers' posts, thereby enhancing their critical engagement and feedback skills (Park et al., 2023). The platform's provision for anonymous participation creates a secure and open environment where students can freely express their thoughts, ask questions, and provide feedback without the fear of revealing their identities, thus encouraging a more honest and uninhibited exchange of ideas (Johnson et al., 2023; Sari, 2019). This anonymity not only boosts confidence among students but also fosters a non-judgmental space for communication. Moreover, the interactions and feedback generated within this framework serve as a form of 'self-

assessment' for educators, guiding them to refine their teaching strategies in response to student needs and feedback, thereby optimizing educational outcomes (Arouri et al., 2023).

Padlet is often described as a user-friendly interface, making it an ideal choice for teachers looking to enhance students' writing skills collaboratively (Do et al., 2023). Jong and Tan (2021) incorporated Padlet in the Malaysian English as a Second Language (ESL) context to improve students' writing skills and provide effective feedback on students' writing tasks. The students reflected positive attitudes towards Padlet, as it was an easy-to-use platform. They agreed that using Padlet for writing and receiving teachers' feedback was easier than the conventional ways of writing and assessment. Similar findings were echoed in the Indonesian EFL context. Taufikurohman (2018) reported that the students had positive perceptions of Padlet as a suitable tool for learning descriptive text writing. Its convenient accessibility empowered students' engagement and autonomy, as they could participate, discuss, and share their ideas beyond traditional classroom settings (Rashid et al., 2019). It transformed the traditional classroom into a digital wall where they could learn from their mistakes and benefit from the teacher's immediate feedback (Jong & Tan, 2021). In contrast to previous studies that primarily utilized Padlet for delivering feedback during in-class activities (e.g., Albarqi, 2023; Taufikurohman, 2018), our research extends the application of Padlet to include providing feedback on assignments. This novel aspect of our study highlights the versatility of Padlet as an educational tool, demonstrating its potential to facilitate feedback processes both inside and outside the classroom. By leveraging Padlet for assignment feedback, we aimed to explore students' learning experiences and challenges with the aim of promoting their engagement with course materials beyond traditional instructional settings.

The current body of literature Albarqi (2023), Deni and Zainal (2018), Mahmud (2019), and Teng et al. (2020) highlights the role of Padlet in elevating students' writing accuracy in both individual and collaborative tasks through its versatile platform. In the Cypriot context, Meletiadou (2021) reported that the integration of Padlet improved various aspects of students' individual writing tasks, including grammar, mechanics, sentence structure, vocabulary, and organization. It encouraged them to use new vocabulary and write more complex sentences. The Vietnamese university students similarly found Padlet helpful, as it gave them an opportunity to learn from each other and exchange ideas and opinions (Tuan & Nga, 2022). It created a secure learning environment that boosted their confidence and motivation (Apridayani & Waluyo, 2022). Additionally, it improved the students' writing fluency as they became more aware of transition, word choice, coherence, clarity, and structure. These findings concur with Rashid et al. (2019), who interestingly indicated that incorporating Padlet improved the students' accuracy, especially in grammar, vocabulary, and punctuation marks. It encouraged them to carefully check their writing before posting, as it would be publicly accessible and receive peers' and teachers' feedback.

The interactive features of the Padlet platform facilitate teachers' immediate feedback, which plays a pivotal role in enhancing students' learning experience, improving their writing skills, and providing valuable insights into their academic progress (Fadhilawati et al., 2020; Sari, 2019; Tuan & Nga, 2022). In an attempt to explore the pedagogical impact of Padlet implementation in the Malaysian ESL context, Deni and Zainal (2018), in their qualitative study, reported that the teacher's supportive feedback positively influenced students' attitudes towards technology-mediated feedback. They valued and appreciated the teacher's constructive comments and suggestions, which effectively improved their writing weaknesses. The majority of students indicated that the teacher's feedback, mediated through Padlet, was immediate, accessible, and beneficial. However, there were some students who found it to be somewhat threatening, and it triggered their feelings of fear, anxiety, and stress. These negative feelings were incited as their classmates could see the teacher's suggestions with too many grammatical errors. As this practice posed a threatening experience, the students indicated their preference to submit their corrected assignments through an alternative platform of their choice (Deni & Zainal, 2018; Pratiwi & Waluyo, 2023). Besides, Cleary (2022) suggested that teachers should allow anonymous participation and encourage group work and peer feedback to increase students' engagement, reduce social pressure, and alleviate students' anxiety and shyness relating to 'looking bad'. Despite the extensive research on teachers' feedback, the area of technology-supported teacher feedback and its impact on the students' learning experience has received limited attention in the Thai EFL context.

There is a consensus in the literature (Albarqi, 2023; Mahmud, 2019; Tuan & Nga, 2022) that the integration of Padlet empowers students' active engagement with their mistakes and turns them into valuable opportunities for improvement. The wide accessibility of Padlet has made the learning process more autonomous. Supporting this claim, Deni and Zainal (2018) reported that the students observed and learned from other students' ways of writing. This improved their writing weaknesses, as they learned from the good posts and how other students addressed the teachers' comments and suggestions. These findings were corroborated by Albarqi (2023), who similarly found that using Padlet increased the Saudi EFL students' awareness of the weak linguistic and language aspects of their writing. It helped them identify their linguistic errors, learn, and improve their writing practices. The feature of access history in Padlet served as a record of the students' ability to track changes made to the content throughout the semester (Rashid et al., 2019). This provided insights into their weak aspects and the improvement in their writing skills (Albarqi, 2023). This study addresses a critical void in understanding EFL students' perceived learning experiences of incorporating Padlet to mediate teacher feedback.

Despite the supportive features that Padlet offers to enhance students' writing skills, various challenges continue to undermine the effectiveness of its implementation (Deni &

Zainal, 2018) This claim was substantiated by Jong and Tan's (2021) mixed-methods study, which demonstrates that the Malaysian ESL students experienced some challenges, such as the lack of stable internet connection, digital literacy skills, and familiarity with the platform, which resulted in frustration and discouragement among the students. Therefore, the researcher suggested that the students should be given considerable time to ensure active participation and effective sharing of ideas (Waluyo & Tuan, 2021). Moreover, Do et al. (2023) departed from the conventional consensus about the benefits of Padlet and reported a lack of discernible improvement in the Vietnamese EFL students' writing skills, particularly in organization and language use. The researchers cited the challenges of the students' low English proficiency level and low level of autonomy. The class size posed another challenge and made it difficult for the teachers to track students' progress. Additionally, the researchers acknowledged the difficulty of finding out who was writing. Therefore, they suggested the teachers divide the class into small groups and assign the students to work on different walls.

Beyond student-related difficulties, using Padlet to enhance students' writing skills might pose additional technical challenges that could potentially influence their learning experience. Jong and Tan (2021) highlighted the possibility of copying peers' work, limiting students' creativity and motivation. This form of cheating was attributed to the lack of an anti-plagiarism option on the platform and the difficulty of checking students' work in large class sizes (Subramaniam & Fadzil, 2021). Another technical issue is the lack of a privacy feature in Padlet, which allows students to see others' mistakes and teachers' suggestions. This resulted in what Rashid et al. (2019) and Jong and Tan (2021) reported as pressure, anxiety, and embarrassment. Privacy concerns emphasize that 'open' learning environments like Padlet are still inadequately safe for some students (Deni & Zainal, 2018). To sum up, the findings from existing literature underscored the features of Padlet, which made it a valuable tool for enhancing students' writing skills by mediating teachers' timely and collaborative feedback. However, there is a need to explore the challenges that the Thai EFL students encounter when learning and receiving feedback through Padlet.

Methodology

This phenomenological study investigated EFL students' perceptions of their learning experiences and the challenges they faced when using technology-supported feedback through Padlet. Phenomenological research refers to the qualitative study of individuals' subjective experiences and perspectives, aiming to gain a holistic understanding of the phenomenon and generate findings that are grounded in the participants' own perspectives (Williams, 2021). The rationale for employing phenomenological design in our research was driven by its compatibility with our research questions and objectives, as well as its potential to illuminate the subjective experiences of Thai EFL learners in utilizing

technology-supported feedback in second language writing. The research focused on capturing the raw, pre-reflective sensory experiences of students, aiming to uncover the subjective quality of their encounters without imposing interpretations, classifications, or meanings (Van Manen, 2017). Coupled with a qualitative design, it allowed for the exploration of evolving attitudes and experiences (Taguchi, 2018), enabling students to share their thoughts and ideas (Bird, 2005). Additionally, it facilitated speculative investigations beyond quantitative data (Hammersley, 2007). The integration of Padlet served as a platform for students to submit assignments and receive feedback, shedding light on how technology-enhanced feedback impacted their learning processes and outcomes.
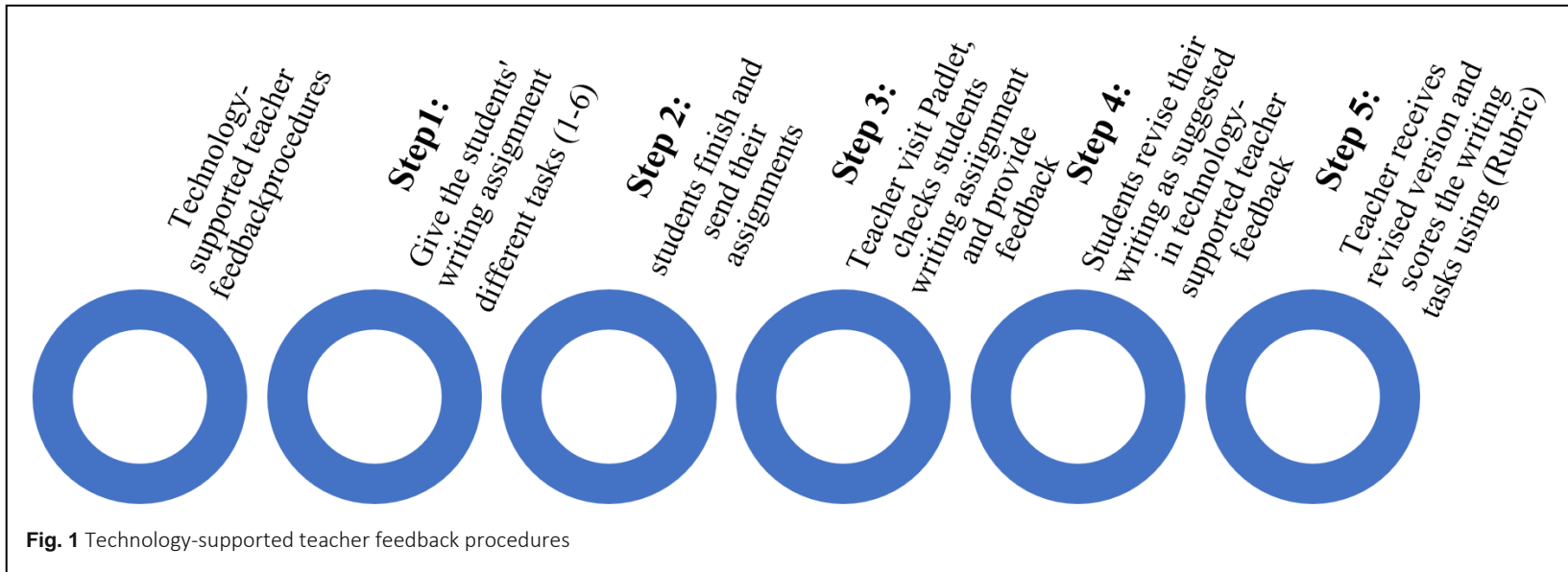
Context and participants

The study involved a cohort of twenty-seven first-year Thai EFL students enrolled in an English program at a public university in southern Thailand. The study employed a purposive sampling approach, a method of census sampling. This ensured comprehensive coverage of the entire population, eliminating the need for random sampling, and facilitating a thorough analysis. This strategic sampling method allowed for the selection of participants possessing specific experiences, knowledge, or perspectives that directly aligned with the research objectives (Palinkas et al., 2015). It was particularly advantageous for gaining in-depth insights and achieving a more nuanced understanding of the research topic (Hanson et al., 2011). These participants were chosen due to the researcher's involvement in teaching the course during data collection. The course in question, "Listening and Speaking for the Teachers of English," spanned 16 weeks, with each weekly session lasting two and a half hours. This course was selected for investigation because its primary goal was to enhance students' communicative speaking and writing skills. It aimed to reinforce understanding and retention of topics like dreams and classmates while also developing critical thinking and communication skills. Incorporating these tasks prepared students for real-world situations where they may need to communicate their ideas effectively through writing. They also provided a more comprehensive evaluation of students' language development and proficiency. All participants were at a similar proficiency level, corresponding to Common European Framework of Reference (CEFR) level A1, with the course aiming to elevate them to level A2. The course was offered online, providing accessibility and flexibility to the participants. Further details about the participants are presented in Table 1.
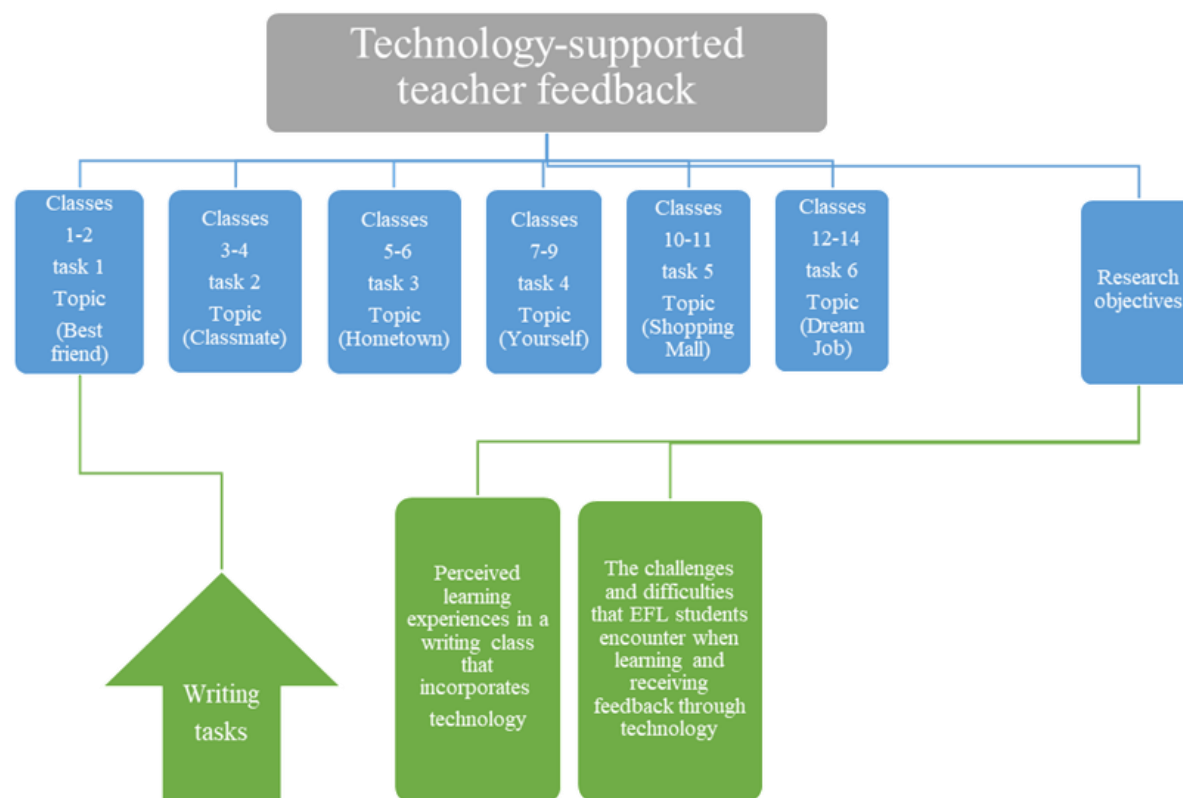
Table 1 Demographic characteristics

		N	Percentage
Gender	Male	8	29.62
	Female	19	70.37
Learning device	Laptop	13	48.14
	PC	7	25.92
	Tablet	4	14.81
	Mobile	3	11.11
Course	Listening and Speaking for the teachers of English	27	100

Intervention

Our study was conducted at the tertiary EFL level with twenty-seven students. The rationale for this intervention was to explore the Thai EFL students' perceived learning experiences and the challenges they faced when learning and receiving technology-supported teacher feedback through Padlet. In the first meeting, the teacher gave the students orientation on accessing Padlet, posting their assignments, checking the teacher's feedback, and resubmitting their revised tasks. The technology-supported teacher feedback procedures were systematically implemented (Figure 1) in five steps. First, the teacher would give the students an assignment as specifically planned in the Thai Qualification Framework (TQF3) of the course. After delivering the lesson's content, the teacher would provide a writing model that helped guide the students on writing format, style, and length. There were six assignments with different topics during the semester (Figure 2). Second, students would do the assignment and submit it to Padlet through a link provided by the teacher. The link would be shared for each assignment after the class. The teacher would set a submission deadline for five days, i.e., two days before the upcoming class. This gave the teacher enough time to review the assignment before proceeding to the new assignment. Third, the teacher will check and provide individual technology-supported teacher feedback. Fourth, the students would re-visit Padlet and revise their writing tasks according to the teacher's feedback. After revising, they would update their assignment with the final revised version (Figure 5). Finally, the teacher would re-check the revised version and give scores utilizing a rubric that was discussed with the students in the first class (Figure 3).

Technology-supported teacher feedback procedures

Step1: Give the students' writing assignment different tasks (1–6)

Step 2: students finish and send their assignments

Step 3: Teacher visit Padlet, checks students writing assignment and provide feedback

Step 4: Students revise their writing as suggested in technology-supported teacher feedback

Step 5: Teacher receives revised version and scores the writing tasks using (Rubric)

Fig. 1 Technology-supported teacher feedback procedures

Fig. 2 Writing tasks and technology-supported teacher feedback

Criteria	scores			
Total 5 Points	1	1.5	2	2.5
Content	Does not have clear purpose, the main idea was confused with irrelevant details,	Contains a purpose but it was vague. The main idea was not stated precisely	Has a purpose but it was not stated clearly, introduce one main idea but it is less clear	Maintains clear objective, present clearly a single, and pivotal main idea.
Language	Uses complicated or incomplete sentences, limited and unsuitable vocabulary that negatively affect the overall clarity.	Uses unclear sentences with limited or repetitive vocabulary, that might confuse the readability	Uses varied sentences, suitable vocabulary with some mistakes in grammar that does not affect the overall clarity.	Uses correct, and varied sentences, suitable vocabulary with no grammatical mistakes.
Organization	Displays no clear organizational plan due to the lack of transitions and the imbalance between the development and support of the idea.	Displays inadequate organization due to the limited or inappropriate transitions.	Displays a suitable organizational plan with some helpful transitions.	Displays clear, progressive and interrelated organization.
Mechanics	There are a lot of mistakes related to issues of spelling, capitalization and punctuation.	There are some mistakes related to issues of spelling, capitalization and punctuation.	There are a few mistakes related to issues of spelling, capitalization and punctuation	There are no mistakes related to issues of spelling, capitalization and punctuation.

Fig. 3 Scoring rubric

Padlet was utilized for two primary reasons: Firstly, the university subscribed to Padlet, providing lecturers with individual usernames and passwords. Secondly, Padlet offers a collaborative platform where teachers and students can interact and exchange ideas. Unlike other applications, Padlet's flexibility and accessibility empowered students' learning autonomy, and extended their learning beyond the classrooms' settings. The technology-supported teacher feedback was given in three phases for each task. First, the students would write their assignment on a given topic and submit it to Padlet. The students were required to turn in their assignments prior to the deadline that the teacher set in the classroom. Second, the teacher would read each assignment and provide feedback within the text and at the bottom of the submitted assignment (Figure 5). The teacher's feedback usually included suggestions for changes in spelling, punctuation, grammar, and idea organization. After submitting their assignment, the teacher could access and edit the student's assignment by clicking on the 'edit' option provided at the top of the assignment. The teacher could change text, add comments, or make any other modifications, including scraping the text, highlighting with a yellow color, or underlining. Scraped parts (Figures 5 and 6) indicated that the sentence structure, idea, or coherence was wrong. Highlighted parts showed that the teacher added the sentences, phrases, or words. The underlined parts pointed to spelling, capitalization, or punctuation errors that the students had to revise (Figures 4, 5, and 6). Third, the students would edit and resubmit their assignments for the teacher to review. However, only some of the submitted assignments had to go through the three stages. In other words, students who submitted correct and clear assignments were not asked to revise and resubmit again. The teacher would check and grade their first submission.

In a sequence of progressively complex writing tasks derived from the course curriculum TQF3, students were methodically engaged to enhance their writing skills through a variety of thematic exercises. Task 1 required students to compose a 200–250-word essay about their best friends, emphasizing the correct use of pronouns, punctuation, and sentence structure. This foundational task was followed by Task 2, where students extended their writing to 200–300 words on a topic concerning any of their classmates, with a specific focus on maintaining correct subject-verb agreement and the effective use of descriptive adjectives. In Task 3, the assignment expanded to 250–300 words about their hometowns, directing attention towards adhering to structured paragraph guidelines. Progressing to Task 4, students were challenged to write a self-reflective piece limited to 300 words, structured with a clear topic sentence, supporting details, and a conclusive statement. Task 5 shifted focus to a more subjective narrative, asking students to describe their favorite shopping malls in one to two paragraphs, including reasons for their preferences.
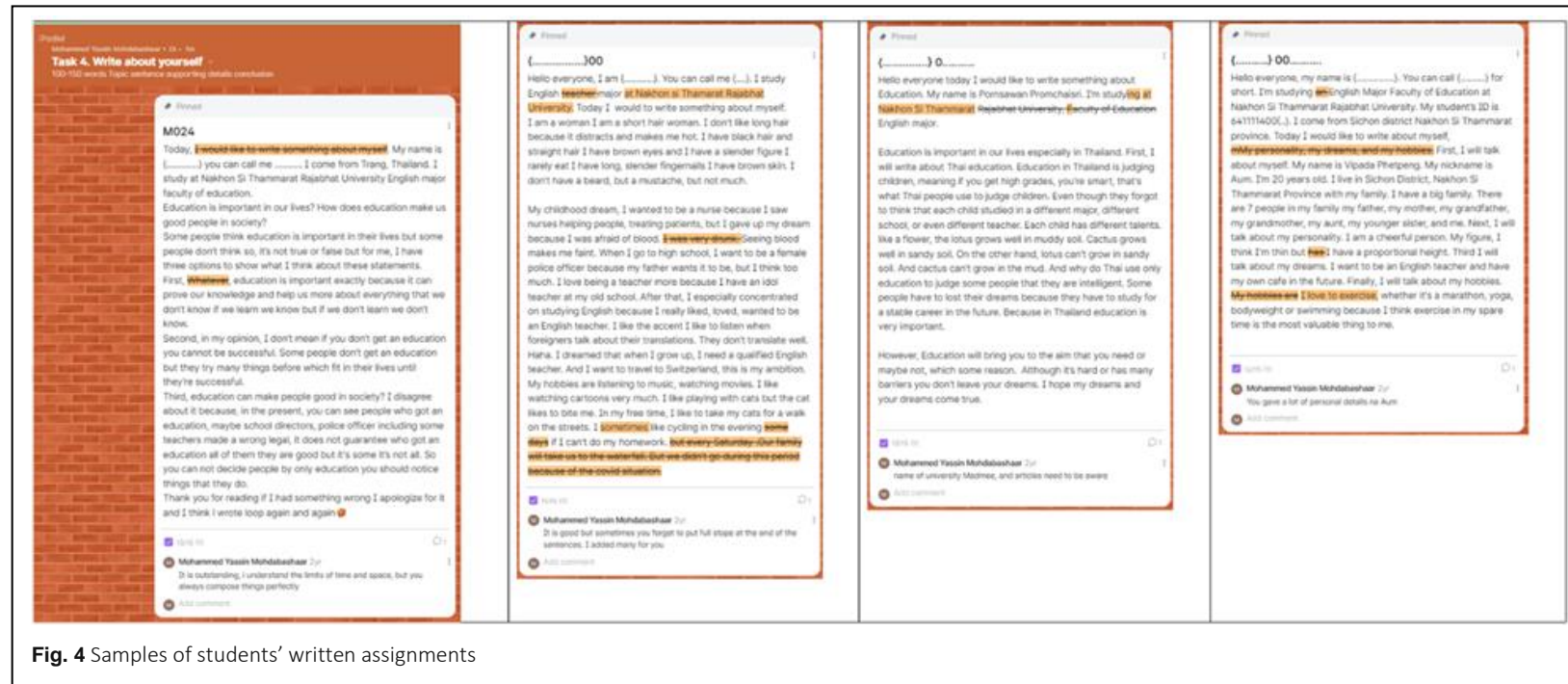
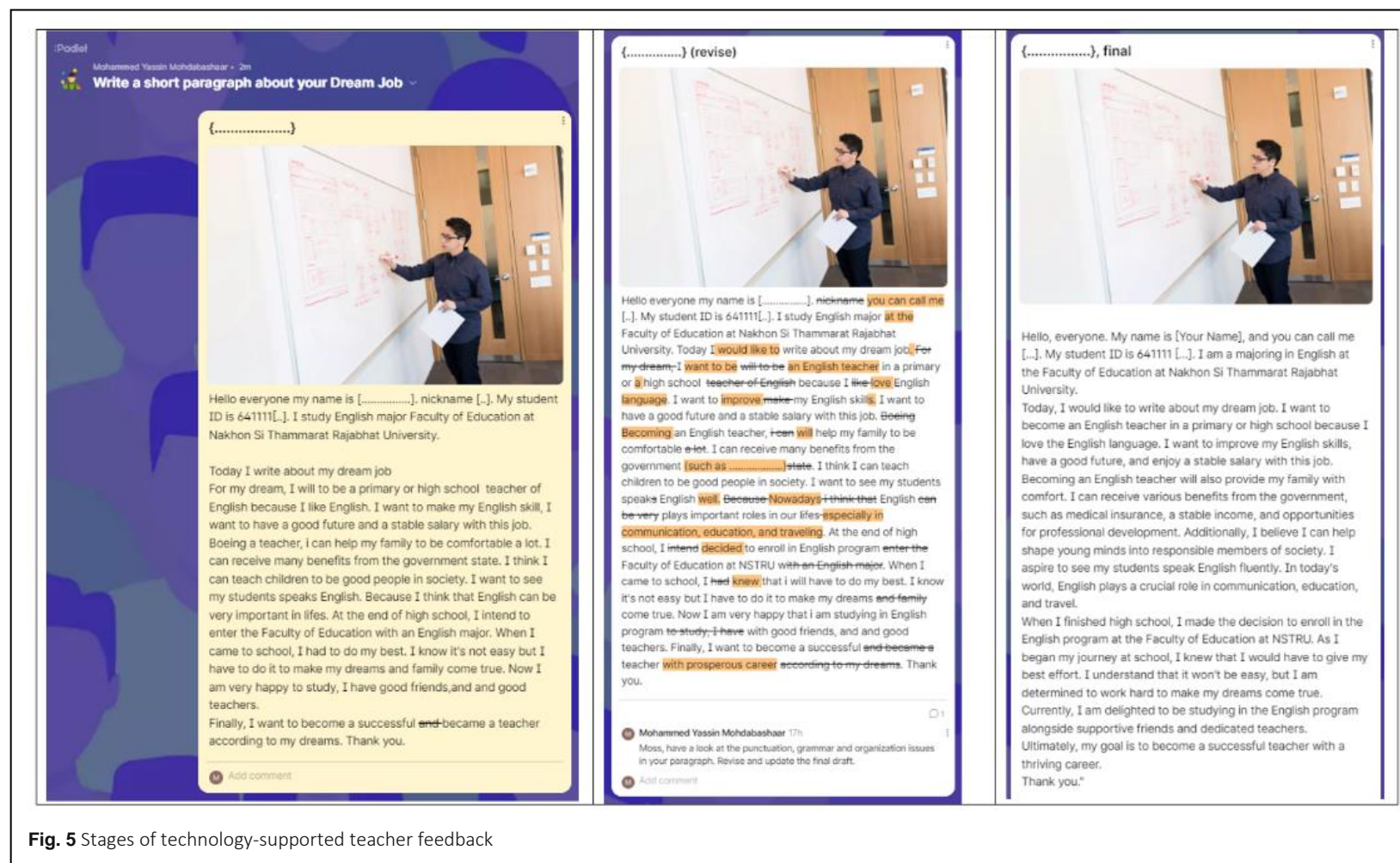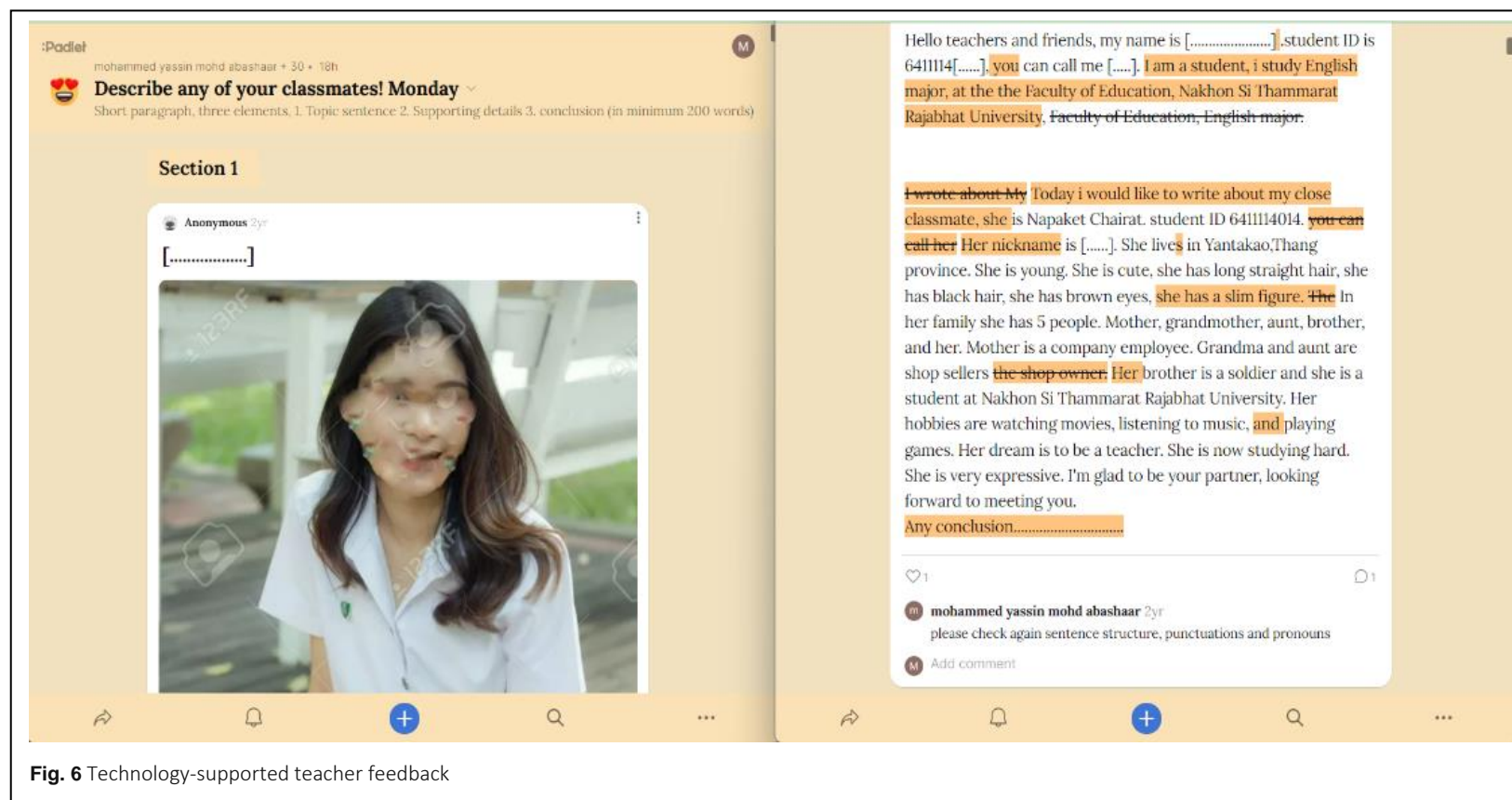**Fig. 4** Samples of students' written assignments

Fig. 5 Stages of technology-supported teacher feedback

Fig. 6 Technology-supported teacher feedback

The learning activities culminated with Task 6, where students were required to articulate their aspirations in a structured essay format, describing their dream jobs. These assignments not only aimed to cultivate a range of writing skills but also to foster personal expression and critical thinking among students.

The rubric consisted of four criteria: 1) content, 2) language, 3) organization, and 4) mechanics. Each criterion was given a full score of 2.5 with a range of four levels (1; 1.5; 2; 2.5) (Figure 3), with a full 10 scores for each assignment. The designated scores for all the assignments were 10% of the overall course grade (100%). At the end of the semester, the teacher calculated these scores and divided them by 10%.

Data collection tool

A survey with open-ended questions was utilized to gather qualitative data from the participants. This objective was to explore the Thai EFL students' perceived learning experiences and the challenges they encountered when learning and receiving feedback through technology. The survey items were adopted from Aneros (2020), Rashid et al. (2019), and Sari (2019), who similarly explored the students' experiences with using Padlet. The survey consisted of two sections: first, the participants' demographic data, and second, open-ended questions. The open-ended questions included: 1) How was your experience while using Padlet in the speaking and listening course? 2) How do you access Padlet, and was that convenient, especially for writing? 3) What are your perceptions of Padlet as a bulletin board that the teachers asked you to use to submit your writing assignments? 4) What do you think of the technology-supported teacher feedback? 5) How did you develop your writing skills through Padlet? 6) What are the challenges or difficulties you faced while using Padlet? Are there any other issues that you want to share about your experience while using Padlet? These open-ended questions encouraged respondents to provide detailed and nuanced perspectives and experiences, as they were not limited to predefined response options. They enabled the participants to address issues and challenges that the researchers might not have considered, providing valuable insights and perspectives (Agee, 2009). This type of survey was specifically used in this study because it gave the respondents space to express themselves freely and provide rich and detailed responses. It allowed the researchers to gain deeper insights into participants' thoughts, feelings, and experiences (Pietsch & Lessmann, 2018).

Data collection

After receiving approval from the Ethics Committee in Human Research (ECHR), the data was collected at the end of the second semester of the academic year 2022–23. Three EFL lecturers checked the survey to ascertain the reliability of its items. Before the data collection, the researchers followed the data collection protocol, explained the purpose of

the study, and reassured the participants about the anonymity and confidentiality of their responses. The data was collected in an online session through Google Meet. The survey was administered through Google Forms. Responding to the survey questions took the participants 25 to 30 minutes. The researchers obtained 27 responses, or 100% of the expected responses. For ethical considerations, the participants' real names were replaced with an (S) code, which stands for students when reporting the findings.

Data analysis

The data were analyzed through inductive thematic analysis (ITA). It was utilized in the present study as it allowed linking the learners' various concepts, perceptions, and experiences and comparing them with their dissimilar backgrounds and points of view (Alhojailan, 2012). The researchers obtained detailed, structured, systematic, flexible, and nuanced, yet complex, accounts of the data (Vaismoradi et al., 2013). Steps proposed by Braun and Clarke (2012) were followed. After cleaning and preparing the qualitative data, the researchers first familiarized themselves with the data by reading the responses thoroughly and repeatedly. Second, generate initial codes. Codes potentially relevant to the research question were highlighted and labeled for a data feature. This helped in organizing the data into meaningful groups. Third, search for themes. The researchers sorted the different codes into potential themes and gathered all the relevant codes within the identified themes. Fourth, review potential themes. Themes were refined, and the list of codes was checked to see if they could adequately and accurately support each theme. At this stage, some subthemes collapsed, and other irrelevant themes were dropped. Fifth, the themes that further provided a structured foundation for the interpretation of the findings were defined. Finally, report the findings. Themes that significantly contributed to answering the research questions were selected and reported.

Results

Students' perceived learning experiences

After conducting a thematic analysis of the qualitative data on EFL students' perceptions of their 16-week learning experiences in a writing class that incorporated Padlet to mediate teacher feedback, the following themes emerged:

Theme 1: Convenience and ease of use

The use of Padlet as a tool to provide teacher feedback in a writing class was positively appreciated by the EFL students who participated in the 16-week course. The students highlighted the convenience and speed of the application, which allowed them to submit assignments, access different sources of information, and communicate with the teacher

online. They also appreciated the assistance and guidance they received from the teacher through Padlet, which facilitated their writing development and learning outcomes.

"Padlet is a good application that facilitates studying, submitting assignments, and is convenient to use." (S2)

"Using the Padlet application is convenient and fast." (S3)

"Padlet is a convenient application for linking pictures from different sources without downloading them." (S4)

"Padlet allows us to communicate with teachers in writing and respond to the current situation. It is an application that enables teachers to assist students in writing online, making it convenient for both teachers and students." (S14)

Theme 2: Teacher feedback and correction

According to the students, Padlet enables the teacher to respond and correct any mistakes in their grammar, spelling, or content. Moreover, Padlet allows the students to see the teacher's comments and suggestions on their individual works, which helps them to learn from their errors and improve their writing skills. Furthermore, the students find the teacher's feedback interesting and beneficial, as it provides them with additional opinions and ratings on their assignments. In other words, Padlet facilitates a more effective and engaging feedback process for the teacher and the students.

"Teachers can respond immediately and correct any mistakes." (S2)

"It also makes it easy for teachers to check grammar." (S3)

"When work is assigned and finished, teachers read and suggest any flaws in the article or text and rate it. They also suggest additional opinions in the comments of individual works." (S5)

"Teacher suggestions allow them to know and remember not to make the same mistakes next time." (S9)

"When there is a mistake in space or grammar, the teacher will comment to correct it. It allows us to learn and understand more about the mistake." (S13)

"The teacher used to give comments under our assignment or highlight the mistakes in the text using a different color. This was really interesting because the teacher could edit the job and give comments which we could see right away." (S18)

Theme 3: Improvement in writing skills

Students reported that Padlet helped them practice typing and using language better, learn from their peers' mistakes, become more aware of their own errors, and improve their writing skills in subsequent assignments. They also appreciated the teacher's comments that highlighted their weaknesses in punctuation, grammar, and word choice. The data

suggest that Padlet is an effective tool for enhancing EFL students' writing performance and confidence.

"Padlet helps us practice typing and using language better." (S6)

"Students learn from their friends' mistakes once the teacher checks their work." (S10)

"Using Padlet in Listening and Speaking Course made writing assignments easier. Students became more aware of their mistakes and tried to write better in their assignments." (S12)

"I discovered my weaknesses in punctuation and grammar through the teacher's comments. I learned to use appropriate words and became more careful with my next assignment." (S17)

Theme 4: Importance of grammar and punctuation

The students acknowledged the importance of proper grammar, punctuation, and word choice for effective communication. They also appreciated the teacher's comments and corrections on their mistakes. Moreover, they demonstrated a willingness to improve their writing skills by revising their work based on the feedback. Therefore, the use of Padlet as a feedback tool seems to have a positive impact on the students' writing development and confidence.

"There may be some issues with the misuse of words and punctuation marks." (S1)

"First of all, each sentence needs to have proper grammar. It is important to avoid inappropriate or unclear sentences that may not convey the intended message. Secondly, it is essential to ensure that sentences are correctly punctuated and capitalized. Lastly, we need to pay attention to the use of uppercase and lowercase letters." (S16)

"I recognized my shortcomings in using punctuation correctly and made amendments in my next work." (S17)

Overall, the data suggests that using Padlet in a writing class for teacher feedback is perceived as convenient and easy to use, allowing for improved writing skills and attention to grammar and punctuation. The limitations of the free account are noted as a potential drawback, but overall, the use of Padlet is viewed positively.

Students' challenges and difficulties

Theme 1: Limitations of Padlet platform

One of the challenges of using Padlet to mediate teacher feedback in a writing class is the limited access to some of its functions. This was a common perception among the EFL students who participated in a 16-week learning experience incorporating Padlet as a digital tool. Several students reported that the application would freeze or crash due to high usage (S3, S8), which could affect their work quality and submission. Another challenge was the

visual presentation of the essays on Padlet. Some students found it hard to read the content because of the image perspective (S4) or the limited space for writing (S18). They also wished they could upload multiple images to match their content (S6) or decorate their work with more options (S18). Furthermore, some students struggled with editing their work on Padlet. They mentioned that they could not edit their work if they did not log in before posting (S9) or if they accidentally pressed the wrong button (S24). They also complained that Padlet did not have a word count feature (S14), which made it difficult to meet the requirements. Additionally, some students were concerned about missing deadlines and losing points because of the difficulties in using Padlet (S7). These limitations might have affected the students' engagement and motivation in the writing class, as well as their ability to receive and provide effective feedback. Therefore, it is important for teachers to consider the potential drawbacks of Padlet and explore alternative ways to enhance the feedback process in a writing class.

"The difficulty is that sometimes the application freezes due to high usage." (S3)

"Sometimes, the image perspective makes it challenging to read the essay content." (S4)

"Adding images that match the content is a useful feature, but only one picture can be uploaded, making it challenging for mobile phone and tablet users." (S6)

"Editing work can be challenging while using Padlet, and missing deadlines can result in point deductions." (S7)

"The word count feature is missing in Padlet, making it difficult to determine if the required number of words is met." (S14)

"The application's limitations include space restrictions for writing and limited decoration options." (S18)

Theme 2: Writing challenges

EFL students faced challenges during their 16-week learning experiences in a writing class that incorporated Padlet to mediate teacher feedback was achieving grammatical and structural accuracy in their writing. According to the qualitative data collected from the students, they struggled with various aspects of grammar, such as typing and grammar correctness (S12), sequential accuracy (S15), error correction (S16), punctuation and markers (S17), and grammatical accuracy (S22). Moreover, they reported that they often made typos (S23), structural and grammatical errors (S25), and lacked precision in their writing (S26). These challenges suggest that EFL students need more guidance and practice in using Padlet to improve their writing skills and receive feedback from their teacher.

"Typing and grammar correctness can be a challenge for some students." (S12)

"Maintaining grammatical and sequential accuracy while writing is challenging." (S15)

"Learning new things about correcting errors is a challenging aspect of using Padlet." (S16)

"Using markers and punctuation can be challenging, and errors may only be noticeable after reviewing the work." (S17)

"Grammar accuracy is not always achieved while writing." (S22)

"Rushing while typing may result in frequent typos." (S23)

"Structural and grammatical errors are common." (S25)

"The student's lack of precision in writing is a common issue." (S26)

Theme 3: Feedback visibility and pressure

Some students expressed concerns about the visibility of their work and feedback to their classmates, which could lead to plagiarism, embarrassment, or anxiety. They also reported difficulties with managing deadlines and tasks without notifications from Padlet. However, other students appreciated the opportunity to learn from their peers and improve their writing skills by seeing the teacher's suggestions and corrections. They felt motivated to produce their best work and avoid mistakes when using Padlet. Therefore, the use of Padlet in a writing class may have both positive and negative impacts on the students' perceptions, depending on their individual preferences and expectations.

"Friends can copy our work." (S2)

"Although Padlet is useful, our classmates can see the teacher's suggestions and mistakes in our assignments." (S3)

"When using Padlet, there are no notifications for tasks or deadlines, and it's easy to lose points if one forgets." (S5)

"The challenge with using Padlet is the visibility of classmates and teacher feedback, motivating students to produce their best work." (S10)

"Embarrassment may arise when classmates notice errors in their work." (S13)

"Submitting work may cause anxiety, and mistakes may go unnoticed." (S21)

Discussion

The main objectives were to explore the EFL students' perceived learning experiences and the challenges they encounter when learning and receiving feedback through technology. The findings are therefore discussed in relation to EFL students' learning experiences and the difficulties they faced when learning and addressing feedback through Padlet.

Students' learning experiences

The first finding revealed that the Thai EFL students found Padlet a convenient and easy-to-use platform, which enabled them to interact with the teacher and submit their assignments easily. This finding is consistent with Arouri et al. (2023) and Do et al. (2023), findings that have described Padlet as a user-friendly platform. It helped the students submit their work, receive the teacher's feedback, and improve their writing skills. The

Indonesian EFL students appreciated the role of Padlet in learning descriptive text writing (Taufikurohman, 2018). This positive experience was echoed in Jong and Tan's (2021) findings, which revealed that the Malaysian ESL students reflected positive attitudes towards Padlet as it made writing assignments, interacting with the teacher, and processing the teacher's feedback easier than the conventional ways. Besides, the students liked the Padlet platform as it facilitated teacher-student and student-student interactions during various collaborative activities. These interactions allowed the students to share their views, ask questions, or give feedback on their peers' posts (Sari, 2019). They also served as a form of self-assessment, guiding the teachers to adjust their teaching strategies in a way that addressed students' needs (Arouri et al., 2023). Moreover, the findings revealed that the dynamic nature of the Padlet platform fostered students' creativity as it gave them a space to embed pictures from Google. This finding aligned with Purwanto (2020), who indicated that the use of Padlet offered access to diverse multimedia resources that supported the students' different learning styles, reinforced understanding, and enhanced their digital literacy skills. These findings stress the need for integrating interactive platforms such as Padlet, which facilitate technology-supported teacher feedback and ensure students' collaboration, engagement, and autonomy in second language writing.

The second finding indicated that the Thai EFL students appreciated the interactive nature of Padlet, which facilitated teachers' feedback and guided them to correct grammar, spelling, and content errors. This corroborated previous findings in Fadhilawati et al. (2020) and Sari (2019), which reported that the teacher's immediate feedback improved students' writing skills and provided valuable insights into their academic progress. In line with Tuan and Nga (2022), the Thai EFL students valued and appreciated the teacher's constructive comments and suggestions, which effectively improved their writing weaknesses. Deni and Zainal (2022) elaborated on this finding further and explained that the pads served as a storage of answers, which allowed the students to revisit, learn from mistakes, and avoid committing the same mistakes in the next assignment. Teachers' comments under the students' posts informed the students about their mistakes and how they could improve their writing mechanics. Alabbad and Huwame (2020) believe that the teacher's constructive feedback created a learning environment within the classroom community that boosted the students' engagement. These findings highlight the significance of technology-supported feedback through Padlet and its role in improving students' writing skills through continuous improvement and self-correction. Teachers can use Padlet to facilitate opportunities for students to learn through reflection.

The third finding was that the Thai EFL students had a positive learning experience as Padlet helped them learn from their mistakes, particularly in the aspects of grammar, spelling, and punctuation. In concurrence with this interesting finding, Albarqi (2023) reported that the utilization of Padlet helped Saudi EFL students identify their linguistic

errors, learn, and improve their writing practices. Pads provided a record of the changes made in the content throughout the learning process (Rashid et al., 2019). However, access history and privacy features are typically offered in Padlet's paid accounts, such as Padlet Pro, Padlet Plus, or Padlet Business. In other studies, Mahmud (2019) and Tuan and Nga (2022) affirmed that the use of Padlet enabled students to actively engage with their mistakes and turn them into valuable opportunities for improvement. Moreover, the findings revealed that the students gained a rich and comprehensive learning experience as they could access and learn from other students' mistakes. Deni and Zainal (2018) attributed the students' awareness of their errors and the effective improvement in their writing weaknesses to Padlet's open and collaborative features. These features facilitated learning from their peers' posts and the ways they addressed the teacher's comments and suggestions. As a result, the students could achieve writing accuracy, especially in the aspects of grammar, vocabulary, and punctuation (Rashid et al., 2019). Teachers can use these findings to promote collaborative learning and incorporate structured peer-review activities for students to enhance their writing accuracy.

Moreover, the findings remarkably revealed that the students' confidence was enhanced by Padlet's versatile platform and the teacher's supportive feedback. In contrast with this finding, Tuan and Nga (2022) indicated that the Vietnamese students' confidence was fostered by the secure learning environment provided by Padlet. In other words, allowing anonymous interaction encouraged the students to participate in discussion and peer feedback without fear of classmates' reactions (Do et al., 2023). Regarding the students' motivation, the study findings notably revealed that the Thai EFL students were motivated to carefully check their submissions before posting as they would be publicly accessible. Their motivation was not sparked by their interest but rather by their fear of the teacher's feedback and peers' judgment. In relation to this finding, Jong and Tan (2021) reported that the limitations within Padlet's platform were suspected of inciting the students' demotivation and disengagement as they hindered their ability to interact with the teacher or peers, submit their work, and effectively engage in classroom discussion. Subramaniam and Fadzil (2021) attributed the student's loss of interest to the possibility of copying and the lack of a plagiarism detection option on the platform. This resulted in the uniformity of the students' contributions, which Subramaniam and Fadzil (2021) attributed to the difficulty of monitoring and checking students' works, especially in large classes. To sustain students' confidence, teachers must be aware of the technical and pedagogical limitations of Padlet as an education platform. They should create a supportive and non-judgmental classroom setting by providing constructive feedback and encouraging students to actively engage in discussions without fear of criticism.

The fourth finding revealed that the Thai EFL students acknowledged the importance of correct grammar, punctuation, and word choice for effective communication. This finding

aligns with Navaz and Sama's (2017) study, in which the students believe learning grammar is essential to enhancing their English proficiency and language accuracy. Consequently, the findings showed that the Thai students were willing to revise their work based on the teacher's feedback. Albarqi (2023) consistently reported that the teacher's immediate, clear, and constructive feedback through Padlet enhanced students' enthusiasm to revise their assignments and improve their writing skills. The valuable insights offered by these results reflected the role of constructive mediated-feedback through technology in developing students writing skills through a step-by-step learning-to-write process.

Difficulties EFL students encounter when learning and receiving feedback through technology

Padlet has provided teachers with a space to address students' writing weaknesses and leverage their skills through technology-supported feedback (Rashid et al., 2019). Simultaneously, it has offered students opportunities to interact, collaborate, share their views, and participate in class discussions and assessment processes (Jong & Tan, 2021). Despite these advantages, several technical limitations, writing difficulties, and unrestricted accessibility features adversely affected students' learning experiences in various educational settings (Deni & Zainal, 2018; Do et al., 2023). Numerous technical issues, such as platform freezes or sporadic crashes, disrupted students' learning processes and overall learning experiences in our EFL context, which they believed reduced the quality of their work and hampered their submissions. To clarify, this technical challenge could be attributed to the students' unstable internet connection, poor devices, unfamiliarity with the platform, and varying levels of educational support (Chulee et al., 2023; Rofiah et al., 2022). Besides, the Thai EFL students indicated that they were dissatisfied with Padlet as they could not upload multiple images and decorate their assignments. Unfortunately, the platform offers predefined templates with only limited customization text options, such as changing fonts, colors, and sizes. The platform does not support embedding multiple pictures or videos, like Facebook. These technical limitations restricted students' creativity, led to uniformity across contributions, and challenged attempts to personalize or innovate beyond the predefined options (Rofiah et al., 2023). Additionally, the students complained about the lack of a word count option on the platform, making it challenging to meet the tasks' requirements. It posed a similar difficulty for the teacher as well, as they could not accurately assess students' work based on word count criteria. It makes students' submissions either too short or lengthy, with unnecessary details. Furthermore, other students shared the difficulty of editing their assignments on Padlet as they were not logged in. In contrast to this finding, Jong and Tan (2021) reported that students could easily access shared pads through a teacher-provided link and begin participating in discussions or activities without the need to create a personal account. This technical issue could be

attributed to the teacher's unclear orientations, the students' inadequate devices (e.g., mobile), or a lack of digital literacy (Aba Sha'ar et al., 2022; Aba Sha'ar et al., 2023). The findings of the study inform teachers on how to integrate Padlet to mediate teachers' written feedback and supplement Padlet with additional applications to boost students' creativity and foster a more personalized learning experience.

Moreover, in contrast to the prevailing consensus regarding the role of technology in writing accuracy, in Albarqi (2023), Jong and Tan (2021), and Rashid et al. (2019), our findings revealed that the integration of Padlet could not assist the students in achieving writing accuracy in various linguistic aspects. This challenge could be attributed to students' unfamiliarity with Padlet and the lack of prior training on leveraging the benefits of Padlet's features. Arouri et al. (2023) attributed the students' writing inaccuracies to obstacles they encountered, including limited internet connectivity and the short duration of assignments. Further, the findings revealed that the students could not avoid repeated typos and maintain writing precision, especially in punctuation and grammar mistakes. This lack of precision is linked to the students' limited experience learning to write through technology. Therefore, they suggested more guidance and practice in using Padlet to overcome these inaccuracies. Jong and Tan (2021) confirmed that the recurrence of these mistakes and the fear of getting lower grades triggered students' frustration and discouragement. To alleviate the challenges of the digital divide, digital illiteracy, lack of experience with learning to write through technology, and unfamiliarity with the Padlet platform, the teachers should organize students into smaller groups or utilize multiple Padlet boards for collaborative projects, ensuring all students have the opportunity to actively participate and contribute.

Furthermore, the findings revealed that the students reported fear of grade deductions due to the lack of notifications from Padlet. This finding aligns with Musayaroh (2022), who reported that the lack of notifications on the Padlet platform led to students submitting assignments late and missing important updates on the shared pads. However, the reality is that Padlet provides notifications to the student's email if they have created an account. They simply must go to the settings in their account and click enable notifications (Rofiah et al., 2023). Zainuddin et al. (2020) confirmed that the notifications in Padlet increased students' competitiveness and collaboration. The research also showed that the students' anxiety and embarrassment were a result of the open learning environment that Padlet provided. The finding corroborates Mahmud's (2019) results, which similarly indicated the students were threatened by the visibility of their submissions and the teacher's feedback. To support the students' engagement and participation, Cleary (2022) suggested that the teachers should allow anonymous participation. Additionally, Deni and Zainal's (2018) advice to teachers is to offer an alternative platform of the students' choice to submit their corrected assignments. However, the student's concern about their reputation motivated

them to produce their best work and carefully check before posting on Padlet (Rashid et al., 2019). This study provides guidelines for teachers to implement group work options to alleviate students' concerns about visibility and eliminate anxiety associated with individual writing tasks.

Implications, limitations, and recommendation for future research

The incorporation of Padlet into writing instruction has notably enhanced student writing capabilities by facilitating technology-supported teacher feedback, boosting student confidence, and promoting interactions both among students and between students and teachers. The provision of a platform for submitting assignments encourages reflective learning, offering students a crucial opportunity to analyze their mistakes and develop essential skills such as critical thinking, communication, and autonomy. While not explicitly emphasized, students may have cultivated critical thinking skills as they engaged with received feedback, developed communication skills through feedback discussions, and enhanced their learner autonomy during review and revision processes. These educational advantages extend to educators as well; the study's findings emphasize the importance of teacher orientations in helping students acclimate to the platform, thereby mitigating accessibility issues and improving writing proficiency. Moreover, the research suggests that integrating supplementary applications with Padlet could help overcome its technical constraints, enrich the learning environment, spur creativity, and cater to diverse learning styles. Importantly, this study sheds light on the variable digital literacies of students and the open, flexible nature of learning within the Padlet environment, factors that teachers must consider given their potential impact on student motivation, performance, and overall educational outcomes.

  Despite these contributions, the study is not without its limitations and areas requiring further inquiry. The research predominantly captures students' perceived learning experiences, which underscores the necessity of including educators' perspectives in future research to gain a more comprehensive understanding of the practical challenges and benefits of technology-supported teacher feedback. Additionally, the study's reliance on a qualitative methodology, while enriched by thematic analysis to organize and interpret data, suggests the benefit of incorporating quantitative methods in subsequent research to validate and expand upon the findings presented. Future studies could employ a mixed-methods approach, which would provide a more robust framework for assessing the efficacy and impact of Padlet and similar technologies in educational settings. This approach would also allow for a broader evaluation of how these technologies affect learning dynamics and outcomes across different educational contexts and disciplines.

Conclusion

This qualitative study investigated the perceived learning experiences and challenges of EFL students when engaging with technology for learning and receiving feedback, with a focus on the use of Padlet. The findings reveal that Padlet was appreciated for its convenience and user-friendliness, facilitating collaborative learning, and enhancing student motivation and confidence through effective teacher feedback. This feedback mechanism not only bolstered students' writing skills but also supported reflective learning practices, encouraging them to critically evaluate their errors and cultivate crucial skills such as interaction, collaboration, and autonomy. Despite these benefits, the study identified significant challenges associated with the platform, including technical issues, and writing challenges that adversely affected the students' learning experiences and the quality of their submissions. Moreover, the open nature of the platform sometimes led to heightened feelings of anxiety, fear, and embarrassment among students, particularly as their errors and teacher feedback were visible to peers. The findings suggest that integrating additional applications to complement Padlet could enhance academic achievement, foster creativity, and accommodate diverse learning styles. To maximize the benefits of technology-supported feedback and ensure equitable access, it is crucial for educators to address challenges related to students' varying levels of device availability, familiarity with the Padlet platform, and differing digital literacy skills.

Authors' contributions
The authors are responsible for the whole manuscript. The authors read and approved the final manuscript.

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