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Technology Enhanced Learning: Applying Padlet, VoiceThread and Microsoft Teams in online university courses.

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Abstract: *The use of technology in language teaching and learning has been rising in popularity with rapid developments in technology as well as increased need due to the recent coronavirus pandemic. Moreover, the sheer number of technologies available and the choices with how to implement them can be quite daunting for educators.*

In this article, three technologies implemented in Master of TESOL university online courses are presented and explored with regards to their enhancement of learning: Padlet, VoiceThread (video recordings) and Microsoft Teams (chat forum). Firstly, the applications of these technologies were mapped to the TPACK framework (Mishra & Koehler, 2006) along with educator observations on their implementation. Secondly, data from surveys and interviews provided students' perspectives on the use of technology and the benefits and challenges they experienced. Thematic analysis of this data revealed six themes: Engagement and interactivity, Peer learning, Flexibility, Record of work, Usability, and Challenges.

The findings of the study demonstrate how technologies can enhance learning through increased motivation and participation, shared learning and self-directed learning. The goal of this article is to inform TESOL educators on the potential of these technologies and inspire them to explore options for integrating technologies in their own classrooms and contexts.

Introduction

Technology enhanced language learning (TELL) has been rising in popularity with rapid developments in technology as well as an increased need for their implementation due to the recent

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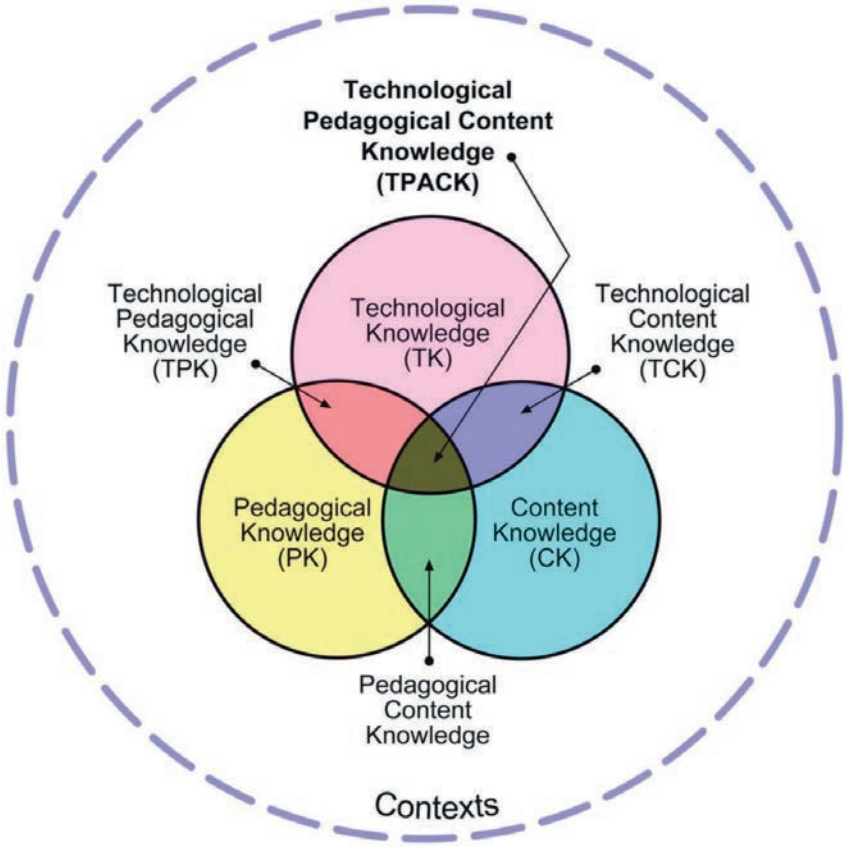
coronavirus pandemic. TELL can be synchronous or asynchronous and can be implemented in various forms, such as classroom-based activities, using technology to access information, homework activities, or as an extension of classroom learning (e.g., online gaming or language learning apps). Technology has also been prevalent in assessment practices, such as online testing and more recently, the emergence of advanced Artificial Intelligence (such as ChatGPT) has resulted in heated discussion on its usefulness (as a resource) or not (i.e. banning it altogether) (See Furze, 2023). Educators require knowledge and skill to evaluate and adapt technological tools to teach in the digital era (Zhou & Wei, 2018). However, the sheer number of technologies available and the choices with how to implement them can be quite daunting for teachers, particularly those who are new to teaching, or have limited experience with technology.

Research in the field of TELL has explored successful applications of technology across all macro and micro skills (i.e., reading, writing, listening, speaking, grammar, vocabulary, and culture) and discussed related considerations (e.g., Levy, 2009). According to Shadiev and Yang's (2020) review of the literature on TELL, writing, speaking and vocabulary received the most attention. Taking a different approach, Zhou and Wei (2018) highlighted the effective use of technology in the three dimensions of self-regulation: 1. Cognitive and metacognitive strategies (remembering and processing language), 2. Affective strategies (e.g., emotions, attitudes, motivation), 3. Sociocultural-interactive strategies (communication and cultures). This research demonstrates the vast array of potential for implementing technology in TESOL and raises the question of which technology to choose, when to apply it and how to implement it for enhanced learning.

As explained in the aptly titled article 'Putting the pedagogical horse in front of the technology cart' (Sankey, 2020), the technology should not be the starting point, but rather, the pedagogical aims should inform which technologies are chosen and how they are implemented. In other words, we should first consider the objectives for the activity or lesson and then choose a tool (e.g., a specific technology) that will ensure these objectives are met in an effective manner. Zhou and Wei (2018) emphasised the important role of teachers in "identifying the best technology tools and guiding students to be strategic, self-regulated language learners when using technologies" (p. 488).

Mischra and Koehler (2006) proposed the TPACK model as a conceptual framework for guiding teachers' integration of technology into classroom pedagogy. The TPACK model (Technological Pedagogical Content Knowledge) offers a conceptualisation of the complex and interrelated roles of the three aspects of content, pedagogy and technology within classroom environments. Figure 1 presents these three aspects and the ways they overlap to indicate interrelated knowledge.

Figure 1. The TPACK framework



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Content knowledge (CK) "is knowledge about the actual subject matter that is to be learned or taught" (Mishra & Koehler, 2006, p. 1026). In the context of TESOL, this knowledge refers to content knowledge of vocabulary, sentence structure, verb conjugations, etc. Pedagogical knowledge (PK) is knowing appropriate methods for teaching and learning, including "classroom management, lesson plan development and implementation and student evaluation" (Mishra & Koehler, 2006, p. 1026). In TESOL, this knowledge refers to using communicative approaches or task-based teaching, as well as

pedagogical strategies of active learning and group work, and assessment styles. Technology Knowledge (TK) is knowledge about various technologies and the skills required to utilise these technologies, referring to any technology deemed appropriate for use in the TESOL classroom (such as those listed below). Of course, the separation between these aspects is not clearly distinct, but for the purposes of applying technologies in the classroom, this framework is a useful tool to consider these aspects and their interconnectedness.

The term 'enhanced' within the field of TELL can be somewhat vague. It is often referred to as promoting or complementing the teaching and learning, using technology to motivate students, to provide more authentic experiences for language use, to assist learning or to increase engagement through fun activities (e.g., Akbari et al., 2016). Technology enhancement may also support students in adjusting learning to their own pace or even ensuring students learn how to be responsible in the digital world (e.g., Zhou & Wei, 2018). As will be explored in this article, enhancement can occur in numerous ways.

This article draws from examples of technology used in a Master of TESOL program at an Australian university. While it is understood that educators at universities have increased access to technologies (particularly paid versions) and have greater autonomy on technology choices, the aim of sharing these examples is to demonstrate ways in which classroom activities can incorporate technology for increased learning. Throughout the explanation of technologies and their application, alternative technology options that achieve similar goals are suggested. In the university courses in this context, the technologies were applied for the university students' learning and development as well as models for incorporating technology in their future TESOL classroom contexts.

The following section outlines the Methodology for this study including details of the context and data collection and analysis. Next, the three technologies are described and examples of how they were implemented in the courses are explained. Results are then presented in two parts: 1. Mapping to TPACK framework with educator observations, and 2. Results from surveys and interviews organised into identified themes. Finally, the discussion section returns to the exploration of enhancement and how learning was enhanced throughout the examples in this study.

Methodology

Context

The context for this article is a Master of TESOL program at an Australian university. The technologies outlined below were used in five courses in this program. One of these courses was particularly focused on reviewing and implementing technology for use in TESOL teaching. During the pandemic all courses in the program shifted to online mode and the use of technology increased to accommodate this change. The five courses generally applied a constructivist approach to teaching and learning, through active learning strategies (Felder & Brent, 2009), meaning that course activities involved critical thinking and the application of students' own experiences and understandings to engage with the course content. Subsequently, the purpose of the technologies was to contribute to these active learning approaches. The data referred to in this article are from surveys and interviews exploring students' experiences of technology used during the online delivery.

Participants

The students in the Master of TESOL program had varying backgrounds in the field of language teaching, ranging from no experience to numerous years' experience teaching in TESOL contexts. Some students were non-native English speakers themselves. At the time of data collection, students in the program were geographically distanced, some students were in Australia while others were overseas. Their ages ranged from 23 to more mature adults.

The data was collected from five courses in the Master of TESOL program. A total of 59 students were enrolled in one or more of the five courses during one trimester. 15 students chose to participate in this study and complete the online survey, of which four students also participated in a follow up interview. This data is complemented by one educator's reflections on the technology implementation. The educator taught three of the five courses during the data collection period.

Data collection

After receiving ethical clearance to conduct the study (GU Ref N0: 2021/328), students in the courses were invited to participate in an online, short answer survey. Participants were made aware that participating in the study would in no way affect their grades or their standing with the university. The online survey asked the

same set of questions for each of the specified technologies the participants may have used during one or more of their courses. These questions centred on usability, interactivity, collaborative benefits, and challenges of using the technology (see Appendix for survey questions). At the end of the survey, participants indicated their willingness to participate in a follow up interview. The interview questions delved further into participants' experience of the technologies, and invited suggestions on improving their implementation. These questions were underpinned by the constructivist pedagogical approach in the courses and were designed to understand the students' perspectives on whether (or not) the technology assisted in their engagement with course content and their learning. Despite the limited number of students who participated in the survey and interview, this data, along with the educator's observations, provides some useful insights into the use of technologies in online courses.

Data analysis

Example activities using the various technologies were firstly mapped onto the TPACK framework in order to reflect on how they enhanced the teaching and learning. Educator reflections on the enhancement of learning were included in this section. Secondly, data from the survey and interviews was coded and analysed using thematic analysis (Braun & Clarke, 2022). Only data pertaining to Padlet, VoiceThread, Teams or general technology was included. Initial coding of this data was related to aspects of active learning such as collaboration, sharing ideas, accessing information, types of activities and details of the specific technologies. The subsequent identification of themes was informed by the goal to understand if and how the technology was enhancing the learning. Therefore, these themes align with the earlier discussion on the meaning of 'enhancement'. Six key themes were identified, and results are presented according to these themes. Quotes from participant interviews presented in the results section were very lightly edited for ease of comprehension, such as deleting repetitive phrasing or filler words (e.g., 'um', 'you know').

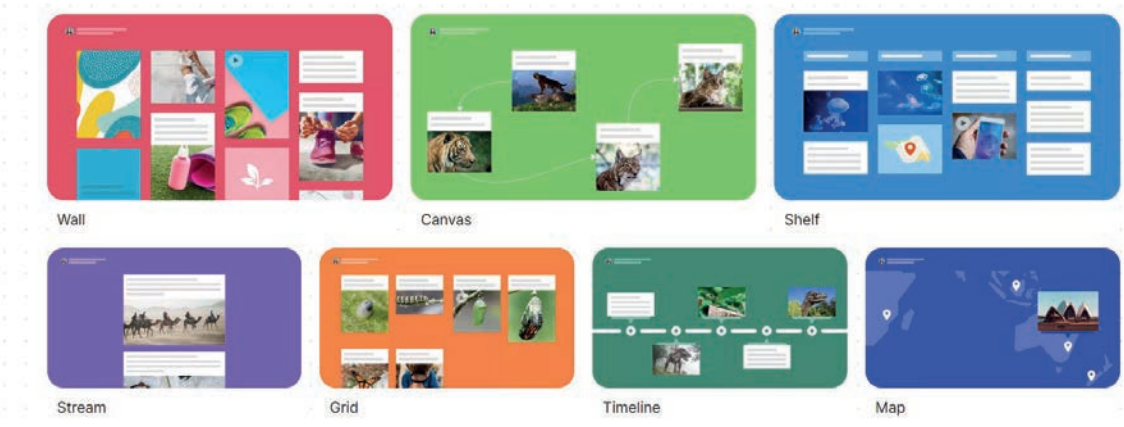
The Technologies and their Application

Padlet

Padlet is an interactive, online whiteboard with multiple options for contributions using written, audio or visual modes or through

uploading documents, videos, etc. It is a collaborative tool that permits multiple users to contribute synchronously or asynchronously. Padlet activities can increase students' engagement and participation (Frison & Tino, 2019; Shoecraft, 2022), contribute to the co-construction of new knowledge (Dewitt et al., 2015), and provide a space for shared learning, revision and assessment (Shoecraft, 2022). Padlet is also very simple for students to use, and easy for teachers to create. There are seven options for the style of Padlet (Figure 2) depending on the purpose of the activity.

Figure 2. Padlet styles



Note: Figure reproduced from https://Padlet.com/

Practical considerations:

- A free version is available, which includes three Padlets. These can be deleted and reused.
- Once completed, a Padlet can be downloaded in various formats.
- Students do not need to have an account to access and post. It will show their post as anonymous. If necessary, students can be instructed to add their name to a post.
- Share a Padlet through QR code, link, or embed it in a course site.
- Accessible on computers, tablets, smart phones.
- Padlets can be displayed on a class whiteboard for discussion during face-to-face activities or used for interaction and recording responses during online classes.
- Padlet is a viable host platform for other incorporations of technology (e.g. video recordings, blog posts, discussion board activities).

Applications of Padlet

One example in the university courses was the use of Padlet to record self-introductions during the first week of class ('wall' style) (see Table 1). Using stimulus questions, students added their introductions using a choice of written (with a photograph), oral or video recording.

A 'canvas' style Padlet was used for a debate activity (see Table 1). The class was divided into groups (for or against), and then posted their arguments onto the Padlet using two different colours (one colour for 'for' and another colour for 'against'). Each argument was connected to a counter argument to provide a visual image of the debate and to generate new ideas.

The 'shelf' style Padlet was used for activities involving stimulus (see Table 1). A short document, or video was posted at the top of each column with specific questions to be answered below. For example, watching a video and answering comprehension questions or reading a text and explaining why you agree or disagree with the statement. This type of Padlet was used in a variety of ways, such as a group activity where each group completed one of the columns and then reported back to the whole class. Another option was to complete a column individually and then share responses with the whole group. For a longer activity, all groups or individuals completed all the columns and then compared their responses with others.

VoiceThread

VoiceThread is a cloud application that runs in Google Chrome or Mozilla Firefox (voicethread.com) and requires purchase of a licence. When used for oral language activities, VoiceThread can be an enjoyable way to improve oral English skills (Zemlyanova et al., 2021) and has options to provide feedback directly in the program which supports feedback literacy development. Examples of using VoiceThread on their website (voicethread.com) include providing individualised feedback on students speaking, practicing for IELTS speaking tests, and asynchronous discussions on media-based stimulus.

VoiceThread was chosen because it accommodates multiple forms of media and simplified options for feedback. However, video recordings using other devices and software (e.g., smart phones or iPads with iMovie app) are also beneficial for language learning as an opportunity to practice spoken language and build confidence in speaking skills. Recording directly into PowerPoint

is another option to practice presentation skills. Digital storytelling provides opportunities for interdisciplinary projects that support speaking skills and creative thinking (Shoecraft, in press; Yang et al., 2020). Video projects are an authentic, relatable activity for students and can act as a precursor to a more academic writing task (Hafner, 2014).

Practical considerations for VoiceThread

- VoiceThread is a paid service.
- VoiceThread has the option to leave comments throughout the video (in written, audio, visual formats).
- Can record directly into the program.
- Can add different types of documents, including PowerPoint slides or images.
- Instructions and practice in using the technology is required to ensure success.

Applications of VoiceThread

In one of the courses, students were tasked with recording a vlog (video blog) explaining or teaching one aspect of the English language (e.g., verb conjugations, minimal pairs, pragmatics of greetings, or even tips on how to learn English) (see Table 2). Examples of vlogs were viewed in class as well as an example of the assignment recorded in VoiceThread. An explanation on using VoiceThread was provided during class and students had an opportunity to practice using the technology to record a 1-minute video on any topic of their choosing. In addition, the weekly task for the course required students to create another short video using VoiceThread for increased exposure and low stakes practice with the technology. For the vlog assignment, students pre-recorded their videos and submitted them to the course site. They had the option to use additional aspects of the technology, such as multiple types of media or special effects. However, this was not a requirement to succeed in the assignment. Once vlogs were submitted, the assignment required watching at least 2 other videos and leaving comments, thus practicing their feedback skills.

Microsoft Teams

Microsoft Teams (https://www.microsoft.com/en-au/microsoft-teams/education) is a technology for increasing communication between educators and students and among students, through

written messages or calls. Online classes can be hosted in Teams with video and chat functions as well as 'hands up' and emoji responses. The main focus of Teams usage in this article is as a chat forum, where students can post ideas and respond to comments, as well as share resources.

Chat forums are a great place for students to practice their writing skills, engage in discussions on various topics and share ideas. Participating in these types of forums can increase engagement and motivation which leads to increased learning (Akbari et al., 2016). In this course, Microsoft Teams was used as a chat forum, however, other technologies such as message boards or private chat groups on social media platforms are also good options.

Practical considerations for Teams

- Teams is part of the Microsoft suite and is a paid software.
- There is a mobile app for Teams.
- Teams can be used for communication between individuals or groups as well as for whole class activity (through the creation of a specific Team with all class members enrolled).
- Share files, videos and other media in the Team.
- Can comment on posts and react to posts using emojis.
- Host meetings (live classes) in the Team and record the meeting.
- There are ever evolving features, including accessibility features, being added by Microsoft.

Applications of VoiceThread

During one course, specific questions were posted each week for the students to leave a response. They were also encouraged to comment on each other's posts – either agreeing, suggesting alternative ideas or developing ideas further. These activities were generally weekly tasks (i.e., homework activities) to be completed asynchronously to consolidate understanding and encourage continued engagement with the topics. This forum also provided a space for students to generate their own discussions on course content, share teaching ideas, ask each other questions, and share resources related to the discussion (e.g., videos or readings) (see Table 3).

Results

The data analysis consisted of two components: 1. TPACK mapping with educator reflections and 2. student reflections from survey and interview data.

TPACK mapping and educator reflections

In this section the specific examples using the three technologies (described above) are mapped to the TPACK framework – using the content knowledge, pedagogical knowledge and technological knowledge. They are presented in tabular format and are followed by educator reflections on the use of the technology for enhancing the learning.

Padlet

Table 1. Mapping Padlet activities to TPACK framework

Activity	**Content Knowledge**	**Pedagogical Knowledge**	**Technological Knowledge**
Self-introductions activity	Introductions, language related to themselves	Creating a welcoming, community atmosphere for the class with the intention to reduce anxiety and increase willingness to speak and share ideas.	Knowing how to use Padlet (Padlet would be used often throughout the course). Knowing the different options for posting on Padlet and having a choice.
Debate Activity	Understanding and discussing elements of the English language and using debate style language.	Thinking critically and engaging with multiple perspectives on the topic.	Posting arguments on Padlet provided a written record of ideas to be viewed later or by those who were absent. Activity could be conducted in an online class. Using Padlet technology add to the 'fun' element.

Comprehension activities using multimedia	Comprehension exercises related to specific class topics using spoken and written forms of language. Apply these understandings to own contexts.	Students critically engaged with the content provided rather than a lecture from the educator. Sharing of ideas across individuals and groups.	Padlet provided options for multimedia in one location. Record of all responses for increased sharing of ideas.

In the self-introduction activity, the learning was enhanced through the fun aspect of using Padlet and all class members contributing through their choice of medium, which led to increased participation. They could also self-correct and refine their submissions, potentially contributing to increased confidence in their language use. The second activity was a novel way to conduct a debate without requiring students to speak in front of the whole class. Students engaged critically with the topic through group discussion and written responses. It was a good way to complete a debate activity in the online class. The third example provided a variety of multimedia for individuals and groups, in one simple location. Students could review work completed by other groups or individuals in addition to completing the activities themselves.

VoiceThread

Table 2. Mapping VoiceThread activities to the TPACK framework

Activity	**Content Knowledge**	**Pedagogical Knowledge**	**Technological Knowledge**
Practice activity	Know the technology	Practice technology in low stakes activity	Develop practical use of the technology (digital literacy).
Homework task	Understanding and explaining a class topic.	Sharing knowledge among class members. Also, scaffolding for vlog assignment.	Further increase knowledge of using the technology.

Vlog assignment	Understand and describe a particular aspect of English language.	Develop oral presentation skills. Peer feedback opportunities. Watching videos to increase own understandings of topics.	VoiceThread provided option for pre-recorded oral presentation to alleviate potential stress. Students could practice and re-record presentations. Options to use different media in presentation and showcase their own skills. Feedback options directly in VoiceThread.

This application of VoiceThread demonstrated the benefits of introducing new technology, but also the importance of appropriate scaffolding to ensure success. The opportunity to manipulate the technology in various ways meant students could showcase their strengths, develop digital literacy and be creative in the assessment task. Moreover, the use of video recordings meant students could pre-record their video prior to submission. Whilst practicing 'live' presentation skills is important, pre-recording alleviated potential stress on students to perform, thus improving their confidence in speaking. They had an opportunity to self-correct when watching and re-recording their own videos in relation to presentation skills (such as pronunciation, speed, eye contact), content and flow of ideas, as well as technical aspects of lighting, effects, use of props, etc. Peer feedback options increased peer learning, as well as developing students' feedback skills.

Microsoft Teams

Table 3. Mapping Teams activities to TPACK framework

Activity	**Content Knowledge**	**Pedagogical Knowledge**	**Technological Knowledge**
Responses and discussion on topic related questions.	Write blog style posts on their understandings of topics. Use more informal language.	Critically engage with topics and learn from each other's ideas and experiences. Broaden their own perspectives.	Teams provided options to contribute synchronously or asynchronously. Options for various mediums, such as emojis and document sharing. Options to self-correct submissions before posting.

These activities encouraged students to engage critically with the topics and broaden their understandings beyond their own lived experiences. Discussions on Microsoft Teams provided models of critical engagement from others' posts, as well as time for reflection prior to posting. The technology of chat forums (as opposed to classroom discussions) enabled increased opportunity for all students to contribute their ideas and to practice their language skills in a less formal context. In the beginning, motivation to post was potentially related to participation being part of assessment. However, over time, discussions grew organically beyond the requirement for assessment.

Students' reflections

In this section, findings from the survey and interview data are presented. 15 participants completed the survey. All 15 indicated they had used Padlet and Teams during one or more of the university courses, whilst only 11 participants had experienced VoiceThread in these courses. Four participants also completed an interview. Only one of the interviewees had experienced VoiceThread in their courses. Findings are presented according to six themes identified during the coding process: 1. Engagement and interactivity, 2. Peer learning, 3. Flexibility, 4. Record of work, 5. Usability, 6. Challenges.

Engagement and interactivity

One focus of the surveys and interviews was the opportunity for (increased) interaction when using the technologies. Interviewee 2 clearly summarised this focus by stating "the main reason between being in class learning and online learning is just the interactivity with your peers". They continued to explain that the technologies "really do have their place [in online classroom] and should be used within the space well".

There was an overwhelming positive response to Padlet in the surveys, with all 15 participants indicating that it was useful for interactions with peers, with some answers including emphatic adjectives such as "extremely" and "absolutely". One participant stated that it was a "good way to put down discussed ideas in visual format, in real time". Interviewee 2 explained that:

> Padlet really helped [with interactivity]. Kind of bridge that gap and still feel like you're able to have a really good deep level educational discussion with your peers even though it's not face to face, because obviously everyone can't talk at the same time in an online space they can't just turn on your microphones and start talking, it just doesn't work. So having those visual formats, being able to just type out your ideas and have it update live. I think that really helped support the interactivity in class a bit more. Obviously, there's a time for the teacher to talk and for us to listen, but having those activities filtered in as well and having us be able to discuss what we think about the content, I think that's what they really helped with.

Interviewee 4 agreed that Padlet increased interactivity but also commented, "I also know that during class time you are reliant on those conscientious students to actually complete it, and so you see basically the same students week after week doing it when you have a small group, that's what it is". One possible reason for students not contributing to the Padlet could be concerns with sharing ideas in a public space. Interviewee 3 mentioned the option to post anonymously in relation to their own experience: "If I look back to very first very first trimester of studying at [university] If I think back myself, I was actually always afraid to post something. You know what if I'm wrong? Or what if? What if somebody doesn't agree and will not agree with my ideas and the very first trimester, and it's a little bit stressful. But with the anonymous, I don't worry".

Nine of the 11 participants who had experienced VoiceThread responded that it was an interactive technology. The remaining 2 participants said it was somewhat interactive. Many of the positive comments relating to VoiceThread were related to the comments feature: "The ability to add comments directly into the Thread makes it easier for everyone to interact". One participant recognized the multiple options within VoiceThread to potentially enhance engagement: "the different ways you could display content in many forms; this played to different classmates' strengths I think".

The survey participants indicated varying degrees of engagement with Teams depending on how it was incorporated into the different courses. Survey participants commented that "We didn't use it much, just for messages", "it was more used for messages or sharing ideas from the lecturer". It appeared that those who experienced Teams for group activities and weekly blog posts generally found the technology interactive. Teams usage was elaborated on during the interviews. Interviewee 2 commented that "Teams, blog posts and reflections on readings increased interactivity because it was assessment, but over time, people became really interested in topics rather than just doing for assessment". They said that this form of assessment forced people to "really think about the topics and form an opinion not just regurgitate" and "I think people ended up getting really passionate about the discussions and we're really interested in other peoples' posts and they would say hey OK, what exactly do you mean by that? Can you tell us more? Because it was just so interesting". Further use of Teams for group work is mentioned in the following section on peer learning.

Peer learning

Discussions, group work, sharing ideas, and oral presentations in the courses were opportunities for peer interaction and potential learning. This theme of peer learning was evident in responses from participants when discussing activities using the three technologies.

Many survey responses commented that Padlet was helpful for sharing ideas and collaborating with classmates, although one participant stated, "I think it would be good as a forum for sharing ideas, although the level of engagement and interaction within the Padlet influence the effectiveness". Interviewee 2 elaborated on using Padlet during discussions: When you just give us yeah 10

minutes to go and fill in the Padlet and then again we can see everyone's live updates and read through their ideas and still be able to bounce off each other even though we're not in a classroom setting. I think it's very helpful". Interviewee 3 explained class activities where each group read one article and then posted a summary on the Padlet. They said it was "good because I don't have time, I just can read their summaries and I can learn what kind of article is this and if it is interesting I can read it, I just can read others note taking". Interviewee 3 continued to say that "sometimes when I do some assignment, it's easy to go back to that Padlet, and if I was not sure about this theory, I can just read that tile and learn, learn very quickly and well".

Survey responses indicated that VoiceThread had benefits for peer learning as they could watch other students' presentations and learn from them – both with the content in the video and how the technology was used by classmates. One participant commented that they also enjoyed seeing classmate's personalities in the videos.

Peer learning was also mentioned with regards to Teams. For example, "posting reflections on the readings on teams was helpful – like a blog in one spot". Another survey participant stated, "I used it to communicate with my teammates when we were doing our group assignments". Interviewee 3 elaborated on this group work aspect saying that it was convenient for having discussions with group members who were in another city. In addition, Teams was great for "sharing files, in one easy spot, to work on group assignments" (Interviewee 3).

Flexibility

Comments from the participants referred to flexibility when using technology. These comments were related to accessing content at various times throughout the trimester (see also 'record of work' section), contributing asynchronously and options to engage with the technology in various ways or with different mediums.

In regards to Padlet, Interviewee 3 mentioned they were concerned with speaking in online classes as a second language English speaker, particularly since face-to-face classes involved body language and facial expressions that are not always present in online classes. They stated that "using the technology [Padlet] I think I have more opportunity and I have more chance to post my ideas and my ideas or my opinions more frequently and no time limits .... if I want to add my opinion I can put it whenever I want, even if after the class".

One survey respondent mentioned that a benefit of VoiceThread was to prepare work at their own pace, and another said that a benefit was to "try to video record repeatedly until I feel satisfactory with recordings". As stated previously, participants also recognised that the options within VoiceThread played to the strengths of different students.

Interviewee 4 mentioned that all the technologies were often used effectively to provide extra resources on topics. They particularly liked that these resources used different multimedia: "these resources could be a journal article linked or resources could be a newspaper article, link to something to like, you know, put it all together or anything. I find anything that uses any sorts of triangulation is really helpful for learning".

Record of work

When asked about Padlet in both the surveys and interviews, participants often referred to the benefit of having a record of work that was completed in class. For example, "I think it [Padlet] is very helpful in terms of recording the activities done in class, the ideas shared, and serves as future reference" (survey response). Interviewee 3 mentioned that it was great to have ideas written down to use for "reviewing the study, especially when I do the assignments". They elaborated that during the class they would understand content, and acknowledge good ideas, but then when doing the assignment couldn't remember the idea exactly, so could go back to read about it again. Interviewee 2 agreed that the record of ideas was beneficial for assessment tasks stating:

> I went back to them heaps because it's just a nice little collection of some ideas in dot points of all the main features of those kind of theories. So when I was doing an assessment and I was like hang on, what was that theory that I really enjoyed and thought was really helpful? Then I would go back to the Padlet and just have a look and have it all there. It was really convenient.

Interviewee 4 explained that the record of work on the Padlet also helped when they missed a class: "when I had to miss class this week, so I would always check what the hell is happening on the Padlet and go through the answers".

Usability (Practice & Instructions)

A specific question in the survey was whether the technologies

were 'easy to use'. There was often a positive response to this question, but there was also elaboration (in both the survey and interviews) on the opportunities to practice the technology in the class and the provision of clear instructions that influenced the usability of the technologies. When discussing the use of technology in general, Interviewee 3 stated that at first it was "not really familiar, but after like a week or two or three weeks so it's more familiar and more much comfortable for me" (Interviewee 3). They also said the technology was quite easy "if the instruction is clear". In class demonstrations of technology was mentioned by Interviewee 4, stating that "for me what works really well as when we actually get that nice quick walkthrough that just demonstrates [the technology]". In addition, Interviewee 1 said that opportunities to practice and play with the technologies helped increase usability and confidence.

When asked whether Padlet was 'easy-to-use', the survey responses were an overwhelming yes (100%). Interviewee 3 concurred that "Padlet is really easy". Interviewee 2 also talked about using Padlet for their own teaching: "I make my own Padlet for like a little activity for students to use. Just because it's cute and it's nicely presented and it's very simple to use, so it's kind of fun, adds some brightness to the class".

Of the 11 participants who had experienced VoiceThread, 8 responded yes and the remaining 3 replied with "50/50", "hard to say" "in theory – yes, I still struggled to use it competently". Even with participants who responded yes, there was frequent mention of helpful instructions that contributed to the usability, or that practicing with the technology helped to increase capability. One participant responded, "with the teacher's support I felt comfortable using it". Generally, the survey responses indicated that there were some trepidation or challenge in using VoiceThread, but their confidence grew with the practice sessions and clear instructions. Interviewee 1 stated that "if you had the chance to play around with it [VoiceThread] on your own time without anyone listening to or watching you doing it, it's really helpful".

13 participants responded that Teams was easy to use, and 2 said "no" or "not for me". As previously stated, there were some differences in how Teams was utilized in the courses which may have contributed to these responses.

Challenges

A number of challenges were identified by the participants in relation to specific technologies, or the use of technology in

general. Some of these challenges were related to the individual circumstances of the participant whereas other challenges were related to the technology itself, or the specific use of the technology (by educators or students). For example, Interviewee 1 mentioned that their equipment was quite old and so some of the technologies did not work so well. They upgraded the equipment, and it worked much better. Interviewee 1 also highlighted that assumptions are made about students' technology skill levels. As an example, they said that training or instructions on Powerpoint had "possibly been left out because it's been assumed that people know what they're doing with PowerPoint[1], but I hadn't used it before. Not for 10-15 years".

Interviewee 4 mentioned sometimes the technology would not work for students during live classes which was disruptive: "There's so many ways that you know it can interrupt their system and they're just not in that time able to, you know, troubleshoot. That takes up too much time, so." Interviewee 3 commented that if there were lots of technologies being used in a course, then it was sometimes difficult to remember which one to use to submit or post answers and homework.

Often survey participants responded with no challenges when using Padlet, but one challenge mentioned was "get students engaged in sharing ideas". Another participant said it was "difficult to see 'where' on the Padlet our groups were entering". One response said they had difficulty getting the video function to work the first time.

One survey participant said that "figuring out how to do slides [in VoiceThread] at first was tricky, but again, once you get it, you're good". They also said that VoiceThread worked better on a laptop rather than a phone or tablet.

One challenge in using Teams was "understanding all the functions" and "getting used to the layout" (survey responses). On survey participant replied, "it was a bit confusing at first time about setting related (find hidden channels or teams, setting the camera and mic). As previously mentioned, Teams was used in different ways in the courses which led to mixed responses on the technology's effectiveness for engagement and collaboration. Interviewee 4 also talked about challenges with Teams in regards to how it was utilised: "I like teams, but again, teams only works

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(1) PowerPoint was one option for media to use in the VoiceThread presentations.

with the person running it. If it's very hands off, it just sits there. If it's very hands on, you know, it works well and also depends on who's actually going to interact with it as well".

Interviewee 4 mentioned that sometimes students shared information on Teams that was more personal and was perhaps accidently shared to the whole class. They said the post was "to do with their personal assignment or their personal circumstances. And while I would hope that the student is aware of that, I don't know if they're also aware of that everyone else can see it like they might be OK with sharing it with the course convenor, but are they are OK, when they realize that they've shared it with the course".

Discussion

The beginning of this article problematised the use of technology with regards to the choice of technology available and the necessary reflections on the meaning of 'enhanced' in Technology Enhanced Language Learning. Having introduced three specific technologies and example applications, attention will now return to a discussion on 'enhancement' of learning. This section will explore how these technologies and activities enhanced the participants' learning. Drawing on the use of the term enhancement in the literature (see Introduction) and from the constructivist viewpoint, the following discussion is organised into three sections exploring how enhancement occurred through increased motivation and participation, shared learning and self-directed learning.

Motivation and participation

The use of technology is often seen as a fun activity (such as gamification) which can increase the motivation for students to participate in an activity. Therefore, learning may be enhanced through this improved engagement with the activity and the content. Enhancement also occurs through activities which increase confidence. This has a cyclical effect of increasing motivation which leads to further confidence boosting.

In these courses at the university, Padlet was generally a useful technology to enhance learning through students' motivation to participate and opportunity for interactions (Table 1). Study participants described Padlet as a fun technology that was easy to use and permitted all students to contribute ideas simultaneously. There was a fun element in the self-introductions Padlet with the flexibility to contribute using their chosen medium

which increased confidence and willingness to participate. The debate on Padlet was also a novel way to encourage student participation and engage in critical thinking.

The use of VoiceThread contributed to the development of digital literacy skills that permitted participation in different forms (Table 2). The flexible options for presenting ideas meant students could draw on their own strengths to participate. Thus, learning was enhanced through students applying their own creativity and drawing on their self-confidence.

Participation in all three technologies was improved through the flexibility to formulate responses and refine them before posting or submitting. This process decreased stress or anxiety related to a lack of confidence and fear of making mistakes. In particular, the anonymous option in Padlet provided an easy entry into posting ideas for the whole class to view. Therefore, enhancement of learning was achieved through building confidence, encouraging participation and strengthening motivation.

Shared learning

All students arrive in our classes with prior knowledge, experiences and skills which can be utilised for shared learning and peer teaching opportunities in the classroom. All three technologies in this study provided options for sharing ideas and modelling language use through individual or group work activities. Often in classrooms there is only time to hear the ideas from a small number of students – whether in a whole class scenario or a small group. Opportunities for everyone to share their ideas using the technology means more voices are heard and a larger range of diverse ideas are presented. Thus, widening all students' perspectives and understandings.

In this study, the increased confidence and opportunities for all students to post and participate augmented the sharing of ideas and learning from each other's perspectives, particularly through asynchronous engagement (i.e., access to a record of work). Students improved their digital literacy through practicing the technologies as well as viewing how others engaged with and utilised the technology, particularly when using VoiceThread. Discussions occurring in Teams modelled language use as well as appropriate interaction when discussing complex and sometimes sensitive ideas (Table 3). Group work in Teams assisted students in building connections with each other despite geographical distances, and they could easily record and share ideas and

documents. Therefore, learning was enhanced through increased opportunities to share ideas and engage in peer teaching and learning.

Self-directed learning

Learning enhancement may occur when technology permits students to adjust learning to their own pace or skill sets. Many language learning apps (e.g., Duolingo) use a self-directed approach to learning. Of course, self-directed learning also requires the students to maintain motivation throughout the learning journey. Language learning in particular cannot be achieved solely on extrinsic motivation provided by educators. Learners need to become self-motivated and take control of their learning both in and out of the classroom in order to successfully learn a language. It is necessary for educators to assist students in becoming aware of the strategies for language learning (see Eisenchlas & Shoecraft, 2022), and technology can assist in this endeavour.

Participants in this study mentioned the benefits of engaging with content and activities asynchronously. They could review ideas from class and post their own ideas if they missed class, or when they were completing assessment tasks. In addition, students could asynchronously access multimedia resources posted on Padlet or Teams. Therefore, this flexible access enhanced learning because students were engaging further with course content outside class time.

Oral presentations using VoiceThread avoided some of the stress and anxiety experienced when students are required to deliver a live presentation (Table 2). Creating presentations in VoiceThread maximised students self-directed learning in both experimenting with the technology and delivering their presentation at their own pace. They could watch and re-record their videos until they were satisfied with their submission. This review process strengthened students' abilities to identify errors and self-correct. In addition, students had agency in their media choices to use in the presentation. Therefore, the technologies and their applications in this context enhanced learning through encouragement and opportunity for students to become more self-directed and take ownership of their own learning.

Conclusion

This paper has examined the implementation of three specific technologies (Padlet, VoiceThread and Microsoft Teams) in

university courses through mapping the activities to the TPACK framework, educator reflections and analysing participants reported experiences. Alternative technologies have been suggested to mitigate some of the challenges for educators and students to access specific, paid technologies. Despite being a small data set, this study has provided insight into the benefits, and some challenges, of these technologies to enhance learning. This enhancement may present as increased motivation and opportunity for participation, shared learning, or self-directed options for learning. Throughout all of these activities, students were applying their language skills to participate in and successfully complete higher level thinking tasks. Within other TESOL contexts, enhancement of language learning can emerge through the application of technology to motivate students to participate through 'fun' activities, opportunities for all students to participate, and the provision of flexible options for participation. Enhancement also occurs when technology promotes the use and application of language knowledge to engage in discussions, shared learning and critical thinking activities. Moreover, flexibility and asynchronous engagement with technology is beneficial for developing self-reliant and self-directed learners.

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Appendix

Survey questions related to Padlet, VoiceThread and Microsoft Teams

Short answer responses. The same 9 questions were asked for each of the three technologies.

1. Did you use VoiceThread/Padlet/Microsoft Teams in one or more of your courses?
2. Was it an easy-to-use tool?
3. Did this tool help you understand the content/materials better? For example, did it improve your understanding of a topic or understanding of the reading?
4. Did you find the interactive nature of the tool beneficial for sharing ideas with classmates?
5. Do you think you engaged better in the class by using this tool?
6. Did you find this tool useful for collaborations with the class members?
7. What were the challenges with using this tool?
8. What were the benefits of using this tool?
9. Are there any other comments you would like to make about this tool?

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