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**Research Article**

# An investigation into the rationales for the use and non-use of technological tools by Thai EFL university teachers during and after the COVID-19 pandemic

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**ABSTRACT**

This study explores how Thai university instructors adjusted their use of technology before and after the COVID-19 pandemic. It aims to examine the technological tools that instructors used during the pandemic, identify which tools remained in use as teaching returned to in-person and hybrid formats, and investigate the factors influencing their adoption, discontinuation, or continued use. Semi-structured interviews with eight instructors from various universities provided detailed insights into their decisions about adopting and discontinuing certain technologies. The findings indicated significant shifts in technology usage: tools like randomizer apps, essential during remote learning, were abandoned when face-to-face classes resumed. Conversely, tools like Zoom and PowerPoint remained widely used in both in-person and hybrid settings due to their versatility. The use of platforms such as Google Meet and Microsoft Teams decreased as virtual interactions declined. Tools that enhance teaching effectiveness, like Quillbot and ChatGPT, were adopted for their benefits in content delivery and student interaction. Design tools such as Canva saw increased usage for creating engaging visual content. Analysis using the technology acceptance model revealed that the perceived usefulness of tools, instructors' attitudes towards technology, and institutional support significantly influenced these trends. The shift towards hybrid teaching models also supported the continued use of adaptable and effective tools. These results highlight the importance of understanding instructors' preferences and challenges with technology to help educational institutions develop targeted support and professional development programs. Properly aligning technology integration with teaching needs can enhance educational quality and student engagement in a post-pandemic landscape.

**Keywords:** rationale, use of technological tool, Thai EFL university teacher, COVID-19 pandemic, technology acceptance model

## INTRODUCTION

Technology has long played a significant role in English teaching. Digital tools such as computers, tablets, and mobile phones are widely used by educators worldwide to facilitate language acquisition (Vuorikari et al., 2016). Teachers in various countries, including Thailand, have found these tools to be effective for enhancing student engagement and learning outcomes (Kanchai, 2021). Numerous studies globally have demonstrated the positive effects of integrating technology into language instruction, enabling educators to utilize programs and platforms tailored to the needs of their students (Bui, 2022). In addition, these tools have empowered

teachers to deliver personalized instruction, fostering more inclusive and accessible learning environments in different cultural and educational contexts.

The COVID-19 pandemic drastically altered the educational landscape, making the use of digital technologies in teaching virtually mandatory across the globe. Teachers and students adapted to remote learning environments, often for the first time, by implementing online classes and digital solutions to maintain continuity in education (Ulla & Perales, 2022). This rapid shift was accompanied by significant challenges, including limited digital literacy, unequal access to technology, and the need for professional development to navigate new tools. In this context, tools such as Zoom, Google Meet, and Microsoft Teams became indispensable for educators worldwide, while region-specific platforms like Baidu in China and LINE in East Asia also gained prominence (Kanchai, 2021; Li, 2022; Zhou et al., 2023). The pandemic emphasized the critical role of technology in facilitating learning under unprecedented conditions.

As the global situation improves, countries are transitioning back to on-campus or hybrid models of education. In Thailand, for instance, online classes are no longer mandatory, and educators face the challenge of determining which tools remain relevant and effective in a post-pandemic context (Kornpitack & Sawmong, 2022). This transition mirrors a broader trend across many educational systems, where school administrators and teachers are re-evaluating how best to incorporate technology to address 21st century educational demands. Suphakicco (2022) highlighted that such adjustments are essential for aligning teaching strategies with student interests and leveraging modern technology, particularly as education systems recover from the impact of COVID-19. Similarly, global reports suggest that hybrid and blended learning approaches are becoming more prevalent, reflecting the need for tools that are versatile and adaptable to changing learning environments.

However, while global research has provided insights into the adoption and impact of technology during the pandemic, there is a gap in understanding how educators decide which technologies to continue using once in-person classes resume. Prior studies have largely focused on the initial adoption of technology during the pandemic, but fewer have examined the rationale behind technology retention, modification, or abandonment in a post-pandemic educational landscape. Cross-national comparisons suggest that contextual factors such as institutional policies, technological infrastructure, and cultural attitudes influence these decisions. For example, studies in neighboring countries such as Vietnam and Malaysia reveal shared challenges but distinct patterns in the integration of educational technologies, highlighting the value of comparative analyses (Bui, 2022; Nurzhanova et al., 2024). By addressing this gap, this study explores how Thai university instructors determine the usefulness of technological tools after returning to in-person and hybrid teaching. Investigating the rationales for technology use in diverse settings can offer valuable lessons for global educators striving to optimize their use of educational technologies.

This study examines the technological tools used by Thai university instructors before, during, and after the COVID-19 pandemic and investigates their reasons for adopting or abandoning specific tools. Although this study is focused on Thailand, its findings contribute to the broader understanding of how educators worldwide navigate the integration of technology in rapidly evolving educational contexts. The study aims to explore the technological tools Thai university instructors used during the COVID-19 pandemic for online teaching and examine which tools remained in use as teaching transitioned back to in-person and hybrid formats. Additionally, it seeks to investigate the factors influencing instructors' decisions to adopt, discontinue, or continue using particular technological tools in the classroom. By identifying these factors, this study provides insights into the evolving role of educational technology and its alignment with pedagogical needs in a post-pandemic era.

To address these issues, the study seeks to answer the following questions:

1. During the widespread of the COVID-19 pandemic, what technological tools did teachers use to teach students in an online environment?
2. After the COVID-19 pandemic situation improved, what technological tools do teachers use to teach their students?
3. What are the teachers' reasons for using, not using, and continuing to use particular technological tools in the classroom?

## LITERATURE REVIEW

The COVID-19 pandemic has dramatically shifted educational practices worldwide, leading to an unprecedented reliance on digital technologies for teaching and learning. This section reviews relevant literature on technology integration in education, focusing on the adoption, use, and impact of technological tools in English as a foreign language (EFL) instruction before, during, and after the pandemic.

### Technology Integration in Language Teaching

The integration of technology in language teaching has long been recognized for its potential to enhance learning outcomes. Studies have demonstrated that digital tools can facilitate various aspects of language acquisition, including vocabulary, grammar, listening, speaking, reading, and writing skills (Kanchai, 2021; Vuorikari et al., 2016). For example, Bui (2022) found that the use of digital tools like language learning apps and online dictionaries significantly improved students' vocabulary retention and pronunciation accuracy. Similarly, Boonmoh and Kulavichian (2023) noted that the adaptation to digital education post-pandemic helped Thai EFL teachers enhance their instructional practices and student engagement. This aligns with findings from global studies, such as Al Arif et al. (2023), which demonstrated that integrating ICT tools in EFL classrooms facilitates both student motivation and autonomous learning.

### Impact of COVID-19 on Technology Use in Education

The onset of the COVID-19 pandemic in early 2020 forced educational institutions globally to transition to online learning. This shift necessitated the rapid adoption of digital tools and platforms to facilitate remote instruction (Li, 2022; Zhou et al., 2023). In Thailand, Ulla and Espique (2022) highlighted that hybrid teaching approaches incorporated platforms such as Zoom and other video conferencing tools to support instructional continuity. Similarly, Praditsorn & Ulla (2022) highlighted the use of Facebook as an educational platform during the pandemic, particularly in combination with Zoom for online instruction. Kusuma (2022) also noted that the familiarity and practicality of certain platforms influenced their adoption during emergency remote teaching. This global trend was not limited to Thailand. In Indonesia, for example, Al Arif et al. (2023) reported similar patterns in ICT adoption among EFL instructors, highlighting the role of regional infrastructure in shaping tool preferences.

### Adoption and Continued Use of Technology Post-Pandemic

As the situation improved and in-person classes resumed, the continued use of certain technological tools became a topic of interest. Research indicates that while some tools were abandoned, others remained integral to teaching practices. For instance, Praditsorn & Ulla (2022) noted that Zoom, initially adopted out of necessity, continued to be used for its convenience and effectiveness in hybrid learning environments. This finding is mirrored in Malaysia, where Bui (2022) observed a similar reliance on blended learning tools, reflecting their sustained relevance in post-pandemic education. Nurzhanova et al. (2024) highlighted trends in higher education, where e-learning tools continued to be valuable for their flexibility and support in various teaching scenarios.

### Challenges and Barriers to Technology Integration

Despite the benefits, several challenges hinder the effective integration of technology in education. These include limited digital literacy among teachers, inadequate infrastructure, and resistance to change (Boonmoh et al., 2022; Bui, 2022). In Thailand, Neerapan (2025) emphasized the need for ongoing professional development to enhance teachers' competencies in using digital tools effectively. Boonmoh and Kulavichian (2023) also pointed out that continuous support and training are crucial for overcoming these barriers and ensuring effective technology integration. Globally, research by Ulla and Perales (2022) emphasizes that institutional support plays a critical role in mitigating these challenges, particularly in regions with less developed technological infrastructure.

### Empirical Studies on Technology Use in EFL Contexts

Several empirical studies have explored the use of technology in EFL contexts. Kanchai (2021) conducted in-depth interviews with three EFL university lecturers in northeastern Thailand, revealing that their ICT

literacy significantly improved during the pandemic. The study underscored the importance of prior teaching experiences in shaping teachers' attitudes towards online education. This aligns with findings by Alibrahim (2024), who highlighted that digital training programs enhanced educators' confidence and willingness to adopt e-learning tools.

In another study, Boonmoh et al. (2021) investigated the use of online tools by Thai EFL teachers and found that tools like Quizizz and Kahoot were widely adopted for their interactive features. This study involved 126 Thai secondary teachers who were surveyed to understand their use and perceptions of technology in the classroom. The findings revealed that most teachers had knowledge of technological tools and had integrated these tools into their classes, although some faced barriers such as inadequate facilities and lack of support.

Al Arif et al. (2023) investigated the perceptions and expectations of 337 Indonesian EFL university students regarding the use of ICT in English language learning. The study employed a mixed-methods design, using both online questionnaires and semi-structured interviews. The findings indicated that students spent more time using ICT for general purposes than for English learning but showed positive attitudes towards ICT in their language studies. The study emphasized the need for adequate technological facilities and internet access to support effective learning.

Ulla and Perales (2022) examined the implementation of hybrid teaching approaches and digital tools in EFL classrooms post-pandemic, emphasizing the role of professional development and institutional support in facilitating effective technology integration. Similarly, Alibrahim (2024) and Nurzhanova et al. (2024) found that post-pandemic, teachers continued to use digital tools for their perceived usefulness (PU) and ease of integration into traditional teaching methods.

### Theoretical Framework: Technology Acceptance Model

Technology acceptance model (TAM) provides a useful framework for understanding the factors influencing teachers' adoption and use of technological tools. According to Davis (1989), PU and perceived ease of use (PEU) are critical determinants of technology acceptance. This model has been widely applied in educational research to predict technology adoption behaviors (Kabilan et al., 2011). For instance, Scherer et al. (2019) demonstrated that TAM effectively explains variations in technology adoption among educators in diverse educational systems. Similarly, Xia et al. (2023) highlighted the model's relevance in examining the acceptance of educational technologies by special education teachers, underscoring its adaptability to specific instructional contexts.

The literature highlights the significant impact of the COVID-19 pandemic on the adoption and use of technological tools in education. While the transition to online learning posed numerous challenges, it also accelerated the integration of digital tools in teaching practices. Understanding the factors that influence the continued use of these tools can help educational institutions develop targeted support and professional development programs to enhance teaching and learning in a post-pandemic world.

## MATERIALS AND METHODS

This study employed semi-structured interviews as the primary data collection instrument. Follow-up in-depth semi-structured interviews were conducted to gain a clearer understanding of the participants' perspectives. The interviews were conducted in English and divided into three sections: background information of the interviewee, technological tools employed during COVID-19, and tools used following COVID-19. The collected data were analyzed to determine which technological tools teachers used to teach students in an online environment during the pandemic and which tools they continued to use post-COVID-19, along with their reasons.

### Participants

This study was conducted in Thai universities during the academic year 2023, when students returned to on-site learning. Eight EFL instructors from different universities in Thailand were invited to participate in semi-structured interviews. The criteria for selecting the target group included: They must be university lecturers of English and must have at least five years of teaching experience to ensure they had experience with online teaching during the COVID-19 pandemic. The universities selected were a mix of public

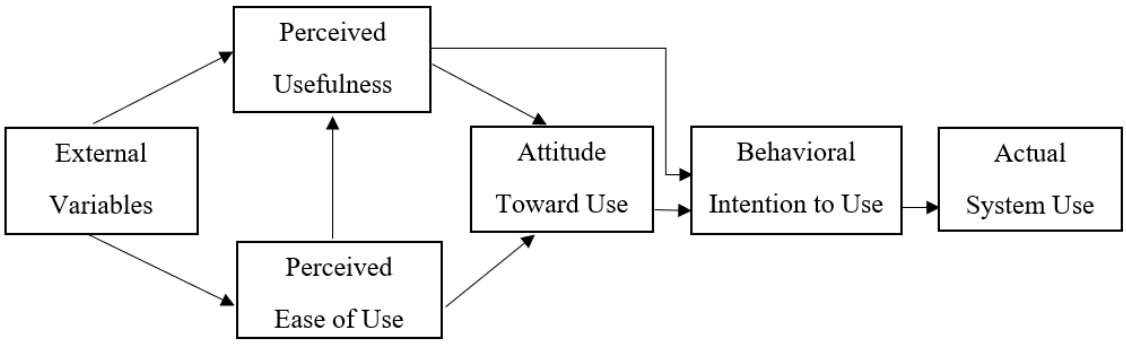


**Figure 1.** TAM (Davis, 1989)

universities, including Rajabhat universities. Of the eight, two are located in Bangkok, while the rest are spread across the north, east, and northeast regions of Thailand. The target group informed them of the study's objectives and assured them of confidentiality.

## Procedures

Eight English teachers from different Thai universities were invited to participate. During COVID-19, the participants gained online teaching experience. They participated in a three-part interview: the first section collected personal information, the second section detailed technology used during COVID-19, and the final section explored their reasons for continuing to use technology. The interviews, lasting around 30 minutes, were conducted via telephone, Google Meet, or Zoom, based on participants' preferences, and were recorded. Participants selected the ideal time and date for their interviews. All participants were asked the same questions in English. Due to ethical considerations, all participants signed an authorization form and were informed of their right to withdraw from the study at any time.

## Data Analysis

The interview data were organized by the interviewees' ages, teaching subjects, on-site and online teaching experience, and departments. The second section of the interviews listed the technologies used during and after COVID-19. Audio recordings were transcribed and analyzed using content analysis to understand the reasons behind the use of technology. Keywords from participants' responses were identified and categorized to understand their behavioral intentions (BIs) for continuing to use technology post-COVID-19.

The reasons were analyzed using TAM (Davis, 1989), examining teachers' PU, PEU, and attitude toward using (ATT), as well as other variables like the COVID-19 pandemic, to determine their impact on teachers' BI to use technology.

## Technology Acceptance Model

Introduced by Davis (1989), TAM is based on the theory of reasoned action, which explains and predicts attitudes and behaviors (**Figure 1**). TAM was specifically developed to elucidate user acceptance of computer-based information systems. The model illustrates factors such as attitudes toward use, PU, and PEU, all influencing BI to use and consequent usage behavior.

The TAM model was used to examine teachers' acceptance of technology, focusing on PU, PEU, and ATT to determine their impact on BI to use technology. The model suggests that if technology is perceived as helpful and easy to use, it will positively influence users' attitudes and encourage frequent use, leading to actual system use. In particular, PU has a significant impact on BI. When users perceive benefits from using a tool, it directly affects BI.

**Table 1.** The categories of technology use

| Categories of technology use | Technological tools | Percentage of technology used during COVID-19 | Percentage of technology used in post-COVID-19 |
|---|---|---|---|
| 1. Teachers used certain technologies, but not as much as they did during the pandemic. | Google Meet | 87.5 | 37.5 |
| | Zoom | 87.5 | 50.0 |
| | Microsoft Teams | 75.0 | 37.5 |
| | Google Form | 75.0 | 25.0 |
| | Google Classroom | 62.5 | 25.0 |
| | Google Drive | 62.5 | 25.0 |
| | Line | 100 | 75.0 |
| | Facebook Group Chat | 37.5 | 12.5 |
| 2. Teachers continue to use technological tools. | Online Dictionary | 62.5 | 62.5 |
| | Google | 87.5 | 87.5 |
| | PowerPoint | 100 | 100 |
| | Google Translate | 37.5 | 37.5 |
| | YouTube | 87.5 | 87.5 |
| 3. Teachers did not use technology following a given situation. | Free Random Selector Tool | 50.0 | 0.0 |
| | Jeopardy | 37.5 | 0.0 |
| | Polls | 25.0 | 0.0 |
| | Kahoot! Quizizz | 62.5 | 0.0 |
| 4. Teachers just used them because it was useful. | Quillbot | 0.0 | 37.5 |
| | ChatGPT | 0.0 | 50.0 |
| 5. Teachers increased usage over time. | Canva | 37.5 | 75.0 |

## RESULTS

**Table 1** displays the technological tools used by teachers during the COVID-19 pandemic, ranked by their frequency of use, and the tools continued to be used after the pandemic. **Table 1** also categorizes the tools into different usage patterns, helping to address the research questions. The teachers' reasons for their choices regarding technology use are supported by excerpts from their interviews.

### Group 1. Continue Using, But Less Than Formerly

Teachers in this group continued to use certain technologies, although not as frequently as before. The reduction in usage ranged from 12.5% to 50%. The most significant decline was observed with Zoom, where usage dropped from 87.5% to 50%, and Google Meet, which decreased to 37.5% (see **Table 1**). The key reasons for this decline were the shift back to on-site classes, reducing the need for these tools. However, Line and PowerPoint remained beneficial for displaying content and facilitating communication with students. These tools were familiar to students, helping avoid dissatisfaction and discomfort from a sudden switch back to traditional methods.

> "I used it less than before because I must adapt since all of my students have grown up with technology. If I don't keep up, I won't be able to teach or comprehend their learning style. So, in some circumstances, I still use technology to interact with them, such as YouTube, Line, or Google Drive, which may be used to transfer work. They were not required to print and bring the document to class. It saved time and resources. That was their requirement when we made a commitment to our first class" (participant T5).

> "The reason why I used meeting platforms like Zoom less than during COVID-19 is because it has returned to on-site classes. Face-to-face in the classroom was the best way to communicate or learn together. We used the technology just when we have make-up classes like using Zoom or sometimes, I used Google Meet" (participant T2).

### Group 2. Continue Using

Teachers in this group continued to use technology for teaching, lesson planning, and seeking information. They used technology to supplement their expertise or verify word definitions. Online dictionaries and Google

remained popular and were used 100% after COVID-19 (see **Table 1**). Some teachers continued using Zoom for specific classes that required online instruction, such as those with students from China.

> "I still used Zoom for an international course where Chinese students attended online from China. So, I used Zoom as a meeting platform and other technological tools that I used during COVID-19 for this class. I liked to show videos from YouTube, then using slides from PowerPoint or SlideShare. I used Google Docs for collecting their assignments and sharing contents. It was easy for them to access anytime they wanted. Programs that I used to catch their attention were videos from YouTube, TedTalks, or Google Maps to connect the content in the classroom for discussion" (participant T8).

> "I always used an online dictionary for preparing my lessons. It was useful for me to check the spelling, meaning, and pronunciation before delivering it to my students. I usually use LongDo Dictionary and Cambridge Dictionary" (participant T6).

### Group 3. No Longer Used

Teachers in this group no longer used certain tools for two main reasons: the technological function itself and university support. Programs designed to entertain or engage students during online lessons were no longer needed as face-to-face interaction resumed, allowing teachers to control the class through activities. Tools like online games, wheel of names, or Facebook Live, used during the COVID-19 pandemic, were discontinued (see **Table 1**).

Additionally, some teachers stopped using tools after discovering easier and more useful technology. Universities provided new tools and training, replacing older technologies. One participant noted that her university provided instructional technologies after she initially used her own methods, leading to a switch in tools.

> "When I realized I needed to teach online, I looked for technology that I could use and was familiar with, such as Facebook and Line. However, after my university offered training and provided the program for teaching, I never returned to using the old tools. The teaching program provided by the university is beneficial and not overly difficult to use" (participant T1).

> "After COVID-19, the university announced the policy of having on-site classes. They did not allow us to conduct online classes without permission. That was why I had not used activities like games or online quizzes in my class" (participant T3).

### Group 4. Just Used in the Current

Teachers in this group discovered new advanced technological tools that they found beneficial for their teaching and preparation tasks. These tools included CANVA for designing instructional materials and ChatGPT for generating ideas and problem-solving. These tools were adopted post-pandemic and were appreciated for their functionality and user-friendly design (see **Table 1**).

> "I discovered that CANVA was very useful for running the class because it is a space where I can share slides and collect work. My students can access it all the time. The functions cover all teaching assistance needs, and the platform is very nice" (participant T7).

> "I have been using ChatGPT since 2023 for article creation and subject scoping. It's incredibly simple to operate and practical. For my writing, I also use Quillbot Paraphrasing Tool to create meaningful statements" (participant T8).

### Group 5. Increased Usage Over Time

This group demonstrated an increased usage of technology over time as they discovered its benefits. Initially used for creating teaching templates, these tools now aid in content display and classroom

engagement. Tools like Canva were particularly highlighted for their ability to create interactive lesson plans, worksheets, syllabi, and presentations (see **Table 1**).

> "I was introduced to Canva by friends who used it for COVID-19 classroom instruction. Since then, I've been using it. The application is excellent for creating lovely templates for my students. My colleagues also showed me new features that help organize lesson plans and manage student participation. I adore this feature. It is really beneficial for meetings and instructions both. I paid the yearly fees, which I believe are necessary to support my effective teaching" (participant T7).

> "My students knew Canva well and used it fluently. I love it because it is very easy to use, with beautiful templates. I found out that it can help me create slides, flashcards, or educational games for my teaching. It is a very convenient program, which pleases me greatly" (participant T4).

## DISCUSSION

The current study aimed to investigate the technological tools used by Thai EFL university teachers during and after the COVID-19 pandemic and the reasons for their continued use or discontinuation. The main findings of this study can be summarized as follows: Teachers extensively used tools like Zoom, Google Meet, and Microsoft Teams to facilitate online teaching during the pandemic. Post-pandemic, they continued using certain tools such as Google, YouTube, and online dictionaries due to their PU and PEU. Teachers reported that online dictionaries remained essential for lesson preparation, allowing them to check pronunciation and meanings efficiently. Additionally, YouTube was highly valued for its ability to provide engaging content that students could access anytime, reinforcing its ease of use and effectiveness in teaching. Teachers' decisions to continue, reduce, or discontinue the use of technological tools were influenced by factors such as the transition to on-site classes, familiarity with the tools, and the tools' PU. Nevertheless, the reliance on eight interviews as the sole data source poses limitations in terms of generalizability. Acknowledging this limitation contextualizes the results and highlights the need for broader studies.

The findings of this study align with previous research that highlights the significant role of digital tools in education, particularly during the COVID-19 pandemic. For instance, Ulla and Espique (2022) reported that platforms like Zoom played a significant role in maintaining educational activities as part of hybrid learning models during the pandemic. Similarly, Praditsorn and Ulla (2022) emphasized the role of Facebook in online education, particularly in conjunction with Zoom to support both synchronous and asynchronous learning. Pribeanu et al. (2022) also found that the adoption of online learning platforms during the pandemic was driven by their PU and ease of access, reinforcing the importance of these factors in technology acceptance. Kusuma (2022) noted that EFL preservice teachers preferred platforms like WhatsApp and YouTube during the pandemic due to their accessibility and low bandwidth requirements, further illustrating the practical considerations in technology adoption. Similarly, teachers in this study described using YouTube due to its easy accessibility and effectiveness in supplementing in-class instruction, aligning with both PU and PEU in TAM. Alibrahim (2024) highlighted the continued use of e-learning tools post-pandemic in Saudi Arabia, emphasizing their importance for blended learning and communication.

However, this study also reveals inconsistencies with some previous findings. While studies such as Boonmoh et al. (2021) indicated a continued preference for tools like Quizizz and Kahoot due to their interactive features, the current study found that these tools were largely discontinued post-pandemic. This shift was primarily due to the transition back to face-to-face teaching, where teachers preferred in-person activities over gamified applications. Some teachers also noted that their institutions no longer support certain online tools, affecting their continued use. This discontinuation was primarily due to the shift back to in-person teaching, where traditional classroom activities were preferred. Future research should employ mixed methods or quantitative approaches to capture broader trends and minimize the limitations of qualitative data. The finding that Thai teachers had to adapt quickly to online teaching due to their initial lack of ICT literacy further emphasizes the challenges faced during this transition (Kanchai, 2021). Furthermore, the study by Pribeanu et al. (2022) suggests that content adaptation is crucial for PU and PEU of technology. Teachers in this study also highlighted that tools like Google Drive facilitated efficient content sharing, allowing students to submit assignments online, which they found useful and convenient. Nurzhanova et al. (2024)

similarly observed that in higher education, e-learning tools continued to be used post-pandemic for their flexibility and effectiveness.

The five groups of tools offer valuable insights. Group 3: No longer used reflects key TAM principles, as teachers perceived that these tools no longer provided significant benefits (low PU) or were no longer practical in face-to-face settings (low PEU). Some teachers stated that they initially used social media apps such as Facebook and Line for teaching, but after their universities provided formal training on newer instructional technologies, they discontinued their prior tools. This shift highlights the role of institutional support in shaping technology adoption. Similarly, Group 4: Just used in the current provides insight into how technological tools that enhance efficiency are quickly adopted. Teachers reported that Canva was particularly beneficial for class management, as it provided an intuitive interface and comprehensive features that supported teaching preparation, aligning with PEU in TAM. These tools streamline class management and enhance instructional efficiency, supporting findings from recent studies that emphasize the importance of user-friendly educational technologies in post-pandemic teaching (Brown & Green, 2023; Sugandini et al., 2021). Teachers also described ChatGPT as useful for brainstorming ideas and summarizing content, which reinforced PU in their instructional planning. Xia et al. (2023) further illustrated how the ease of use and advanced functionality of educational tools can drive rapid adoption, even in specialized teaching environments, reinforcing these trends. Group 5: Increased usage over time aligns with TAM, which suggests that familiarity and continued exploration lead to sustained adoption (Davis, 1989). For example, teachers in this study mentioned that once they became comfortable using Canva, they were more likely to explore additional features and integrate them into their daily instruction, demonstrating how PEU leads to long-term adoption. Scherer et al. (2019) demonstrated that TAM effectively predicts technology adoption behaviors in diverse educational contexts, emphasizing the importance of PU and PEU in fostering long-term adoption. This is aligned with findings from this study, where teachers' continued use of Google Drive and PowerPoint was largely attributed to their PU in facilitating smooth lesson delivery. Xia et al. (2023) highlighted that TAM's core components–PU and PEU–can strongly predict technology acceptance, even in specialized educational environments, further supporting the broader relevance of this model.

The findings also emphasize the sustained use of essential digital tools (group 2) for teaching, lesson planning, and information seeking. Teachers found these tools reliable and beneficial, reinforcing PU as a key driver for continued adoption. This trend mirrors studies showing that tools like online dictionaries and Google have become integral to teaching and learning processes (Jin & Deifell, 2013). Conversely, the reduced reliance on certain technologies (group 1) highlights the transition back to on-site classes, where tools like Zoom are now primarily used for supplemental instruction or makeup classes rather than core teaching methods (Gillett-Swan, 2017).

The findings of this study have several pedagogical implications. Even post-pandemic, certain technological tools remain integral to teaching. Tools like Google and YouTube should continue to be integrated into the curriculum due to their high PU and PEU. There is a need for ongoing professional development to help teachers enhance their digital literacy and effectively integrate technology into their teaching practices. This aligns with Neerapan (2025), who emphasized the importance of professional development in digital literacy. Scherer et al. (2019) also underscored that PEU, a core component of TAM, is often enhanced through targeted training, which improves educators' confidence in adopting new tools. Furthermore, institutions should adopt hybrid teaching models that blend traditional and online methods to maximize flexibility and educational effectiveness, reflecting shifts in education after the COVID-19 pandemic (Suphakicco, 2022).

The practical implications of this study are significant. Teachers prefer technologies that are easy to use, so institutions should prioritize training on user-friendly tools to enhance technology adoption. Universities should ensure that teachers have access to the necessary technological resources and institutional support to integrate these tools effectively into their teaching. Tools like Canva and ChatGPT, which have seen increased usage over time, should be leveraged to create engaging and interactive learning experiences. As highlighted by Pribeanu et al. (2022), facilitating conditions such as resource availability and institutional support significantly impact the adoption and continued use of technology in education. Nurzhanova et al. (2024) also emphasized the need for institutional support and adequate technological resources to ensure the successful integration of e-learning tools.

## CONCLUSION

This study highlights the dynamic nature of technology use in education during and after the COVID-19 pandemic. While certain tools have seen reduced usage, others remain integral to teaching due to their PU and PEU. The findings reinforce the importance of ongoing professional development and institutional support in ensuring that teachers can integrate technology effectively into their teaching practices.

Despite its contributions, this study has some limitations. The small sample size (eight participants) may limit the generalizability of the findings. Additionally, reliance on self-reported data introduces potential biases. Future research should incorporate observational methods or larger-scale quantitative surveys to validate the results. Further studies should explore the long-term impact of technology adoption in education.

By examining why and how educators adopt or discontinue specific technologies, this study provides insights for institutions aiming to develop targeted support systems and training programs. Aligning technology use with pedagogical needs can enhance educational quality and student engagement in a rapidly evolving learning environment.

**Author contributions: AB & KB:** conceptualization, methodology, data curation, formal analysis, writing – original draft, writing – review & editing, project administration. Both authors contributed equally to this study. They jointly supervised the work and critically revised the manuscript. Both authors approved the final version of the article.

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**Declaration of interest:** The authors declared no competing interest.

**Data availability:** Data generated or analyzed during this study are available from the authors on request.

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