Online English Teaching with Interactive Slides: Reflection from Thai Pre-Service English Teachers' Self-Directed Learning

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Abstract

This study explores the self-directed learning (SDL) experiences of Thai pre-service English teachers as they navigate interactive slide platforms for online English teaching. Aimed at understanding how these teachers engage with SDL and reflecting on their experiences, the research employs a mixed-method approach. It begins with qualitative data collection to uncover the SDL strategies used by participants, followed by a quantitative phase to strengthen the findings. Engaging with 29 second-year English Education major students at a university in Thailand, the study focuses on those most relevant to the research objectives. The findings reveal that these pre-service teachers effectively utilized various SDL strategies, including utilizing YouTube tutorials and collaborating with peers. Interestingly, they highlighted gamification features, such as rewards for correct answers, as powerful tools for keeping students engaged and motivated. While the interactive slides were appreciated for their user-friendly design and real-time feedback capabilities, participants also faced challenges like technical issues and the costs associated with premium features. This study underscores the significance of interactive platforms in equipping pre-service teachers with the skills needed for effective online teaching, a growing necessity in today's educational landscape.

Keywords: interactive slides, online english teaching, self-directed learning, Thai pre-service teachers

1. Introduction

Online English teaching has gained prominence in recent years. Research indicates that while students faced challenges such as poor network connectivity and a lack of digital skills, they adapted by utilizing available digital tools effectively to enhance their learning experiences (Shrestha et al., 2022). The transition also revealed a decline in cognitive abilities and academic performance compared to classroom settings, although some students reported benefits like increased leisure time and a more comfortable learning environment (Kamal et al., 2021). Overall, while the shift to online education posed significant challenges, it also opened avenues for innovative teaching practices and enhanced student collaboration (Almendingen et al., 2021).

An interactive online language instruction system allows students to engage in collaborative and autonomous learning experiences, enhancing their language skills and overall satisfaction (Anggoro & Pratiwi, 2023). Research indicates that technology integration, such as digital gameplay, positively influences EFL students' motivation and self-efficacy, fostering a more engaging learning environment (Tawafak et al., 2023). Hence, teachers have reported that interactive response systems (IRS) tools, in online classes, help in monitoring student attentiveness and comprehension, fostering independent learning, and promoting competition among students (Anggoro & Nurmala, 2024). These web-based systems offer a learner-centered approach, providing students with opportunities to practice English through real-time interactions (Verma, 2023). IRS may come in different interactive platforms, including quizzes, polls, videos, and slides (Anggoro, 2025). Consequently, in this increasingly digital educational environment, mastering these platforms have become a necessary skill for future English teachers. Interactive slides, for instance, have the potential for not only engaging EFL students during online classes with various activities including matching, drawing, writing, and taking a short quiz, but also enabling teachers to monitor students' progress in real time and provide immediate feedback (Anggoro, 2025).

Technological advances, such as online learning platforms, have significantly supported self-directed learning (SDL) by providing learners with greater access to resources and the flexibility to personalize their learning paths (Patterson et al., 2021). SDL fosters intrinsic motivation and lifelong learning skills, equipping individuals for both academic success and personal growth (Loeng, 2020). These advancements, combined with SDL, offer opportunities for individuals, including pre-service teachers, to further develop their skills. This study examines how pre-service English teachers engage in technology-enhanced SDL to improve their online English teaching abilities, particularly through mastering the interactive slides of their choice.

While previous research has explored interactive slides usage in English teaching, these studies primarily focused on student outcomes. Interactive slides have been shown to enhance student engagement (Randall et al., 2024), learning motivation (Margaretta et al., 2024) and achievement (Jannah et al., 2024), with users appreciating its convenience (Latygina et al., 2024; Anggoro & Pratiwi, 2023) and its

promotion of active, intelligent learning (Wang et al., 2022). However, literature on how teachers, especially pre-service teachers, engage with interactive slides for teaching EFL remains limited. This study aims to explore experiences of these individuals as they conduct their online classes using interactive slides. An additional focus of this study is how these student-teachers engage SDL to effectivey use the digital tools. This research might provide valuable insights for teacher education programs and contribute to the broader understanding of technology integration in language instruction. Based on the context, this study seeks to address the following research questions

1. How do Thai pre-service English teachers engage in self-directed learning to effectively utilize interactive slides for online English teaching?

2. What reflections and experiences do Thai pre-service English teachers have regarding their self-directed learning journey while using interactive slides in an online context?

2. Literature Review

2.1 Online English Teaching

The advent of the Covid-19 pandemic significantly transformed the landscape of English language teaching, necessitating a rapid shift to online education globally (Lin, 2024). This shift has introduced both challenges and opportunities; connectivity issues and the lack of stable social interactions have posed significant hurdles, yet online learning has proven more comfortable for students compared to modular approaches (Colocado, 2024). The transition to online learning has also highlighted the necessity of on-campus classes for certain skills, such as writing and speaking, while underscoring the potential of blended learning models for future education (Rao & Babu, 2024). The integration of new media tools and the development of online teaching platforms have further propelled the evolution of English higher education, offering new opportunities for learning and information acquisition (Lu, 2023). As the landscape of English language teaching continues to evolve, pre-service English teachers should be equipped with the skills to navigate this new educational environment effectively. Since the integration of technology in teaching is crucial, teachers must be adept at using digital tools to enhance learning outcomes and engage students effectively (Kaya & Subaşı, 2024).

2.2 Pre-Service Teachers and Digital Competence

Pre-service English teachers play a crucial role in shaping the future of education, and their training and experiences are pivotal in preparing them for the challenges of the teaching profession. One important element is digital competence. Digital competence encompasses a combination of knowledge, skills, and attitudes towards using technology to solve educational tasks and achieve goals (Zaripov et al., 2024). Digital competence is a critical skill for teachers, as it helps effectively integrate technology into education (Basilotta-Gómez-Pablos et al., 2022) (Jiménez-Hernández et al., 2020). Moreover, it is crucial for preparing students for the digital age, involving not only computer skills but also the creation of interactive learning environments and assessments (Diachuk, 2024).

To facilitate the integration of digital tools in teaching, it is essential to provide necessary equipment and technical support, including access to specialized software and reducing teachers' workload for skill development (Diachuk, 2024). Establishing experience-sharing communities and a reward system can further motivate teachers to engage with digital tools (Diachuk, 2024). Structured in-service training programs have shown significant improvements in digital pedagogy competencies by fitting into teachers' schedules (Bentri & Hidayati, 2023). Additionally, digital literacy training as part of the Independent Curriculum has effectively increased teachers' comfort with digital tools (Nurlaily et al., 2024). Developing a digital pedagogy curriculum that transforms traditional methods into technology-based approaches is crucial, incorporating practical elements like lectures, demonstrations, and hands-on practice for real classroom application (Diachuk, 2024) (Bentri & Hidayati, 2023). Apart from these, creating supportive environments that foster self-directed learning is essential, requiring scaffolding and structured opportunities for teachers to cultivate the necessary skills and attitudes in higher education (Robinson et al., 2020).

2.3 Self-Directed Learning (SDL)

SDL is a critical component in teacher education, as it empowers pre-service teachers to take initiative in their learning processes (Beach, 2017). This approach supports individuals to take charge of their educational journey, setting their own goals, and determining the methods and resources they need to achieve them (Virani & Sharma, 2024). Cognitive and computational perspectives suggest that SDL enhances learning by allowing individuals to focus on information they lack, uncover inaccessible data through active engagement, and improve the encoding and retention of materials (Gureckis & Markant, 2012). They added that this approach aligns with the development of active learning algorithms in machine learning, which select their own training data to optimize learning outcomes. (Morris, 2019) highlighted that self-directed learning allows teachers to enhance their skills and adapt their teaching practices over time. Being proficient in self-directed learning is essential for meeting the challenges of rapidly changing conditions (Brookfield, 1985). Hence, to cope with the advancement of technology.

SDL is characterized by the learner's autonomy in managing their own educational journey, including the conceptualization, design, conduct, and evaluation of their learning projects (Loeng, 2020). This approach, which gained prominence in the 1970s, remains a cornerstone of adult education, with annual symposiums and dedicated journals promoting its principles (Loeng, 2020). SDL is not synonymous with isolated learning; rather, it allows learners to navigate between solitary study and collaborative networks based on their preferences and learning needs (Loeng, 2020).

SDL represents a significant shift in educational paradigms, advocating for a learner-centered approach that empowers individuals to take

charge of their learning, thereby fostering a more engaged and effective educational experience (Loeng, 2020). The concept emphasizes the learner's responsibility and initiative in setting goals, developing strategies, and employing various learning styles, making it highly relevant to fields like language learning and educational psychology (Pemberton & Cooker, 2012). The practical application of SDL offers a window into individual behavior, shaped by various psychological constructs, and underscores the importance of learner control in the educational process (Loeng, 2020). Moreover, SDL is seen as a lifelong learning strategy, crucial for adults to continuously adapt and grow in their personal and professional lives (Boyer et al., 2012). This is echoed by Virani and Sharma (2024) that SDL not only enhances the learning experience but also prepares students for lifelong learning, making it an indispensable approach in modern education. Hence, fostening SDL in pre-service teachers can promote their present and future professional development as well as lifelong learning.

2.3.1 Factor Affecting SDL

There are several factors affecting SDL. Effective SDL thrives in supportive environments that provide the right scaffolding, diverse teaching strategies, and access to technology. Elements like autonomy, self-assessment, and constructive feedback play essential roles in fostering this approach (Vaičiūnienė & Kazlauskienė, 2023). Institutional support is also crucial; reliable internet access and mentorship significantly boost SDL readiness, as shown in nursing students in Kenya (Abiri et al., 2024). Moreover, learners who possess high self-efficacy and cognitive competence tend to engage more actively in SDL, managing their time effectively and utilizing meta-learning skills (Vaičiūnienė & Kazlauskienė, 2023). In online learning settings, confidence in technology and a positive attitude toward digital tools are essential for boosting learners' engagement and performance (Zhang et al., 2024). Additionally, gender can influence self-regulated learning skills, as pre-service English language teachers often show varying levels of self-regulation based on gender and grade level, with female pre-service teachers demonstrating notably higher self-regulation skills (Güneş et al., 2023).

2.4 Interactive Slides in Online English Teaching

As mentioned earlier, digital competence enables teachers to create interactive learning environments (Diachuk, 2024), making it a crucial aspect of self-directed learning (SDL). One potential approach to facilitate students' interaction, especially in the online EFL environment, is using interactive response systems, including web-based interactive slides (Pratiwi et al., 2024). This method allows students to explore content in a nonlinear and asynchronous manner, making complex subjects more approachable and engaging (Pakpour et al., 2021). Interactive response systems, such as the one described by Zeng et al., integrate multiple channel interfaces to facilitate bidirectional information exchange between users and intelligent response modules, thereby improving service efficiency and customer satisfaction (Zeng et al., 2020).

In EFL, interactive slides have emerged as a significant tool. Research indicates that EFL students have positive perceptions of interactive lesson slides which enhance engagement and learning outcomes (Aloreafy & Saty, 2022). Tools like Pear Deck allow students to access interactive slides at their own pace, fostering independent learning and enabling teachers to supervise effectively, despite some limitations (Anggoro & Khasanah, 2024). The concept of broad on-slide presence, which involves increased instructor expressiveness and interaction with slide content, has been shown to significantly improve perceived knowledge gain, attentional engagement, and the overall student experience in synchronous online learning environments (Katai & Iclanzan, 2023). In asynchronous settings, web-based interactive slides can recreate laboratory experiences, making complex content more approachable and enjoyable for students (Pratiwi et al., 2024). The Online Presentation-Assimilation-Discussion (OPAD) mode, which incorporates interactive teaching design, has proven effective in changing students' online learning behaviors by positively influencing their feelings and attitudes towards learning (Zhang et al., 2024). An interactive English teaching platform developed using a collaborative filtering recommendation algorithm has also been shown to meet most students' needs, enhancing the interactivity and quality of English teaching (Hao, 2022). Real-time web applications like SlideCheck facilitate active interaction between teachers and students during sessions, improving participation, knowledge acquisition, and the overall dynamism of lessons (Ram ́ırez-Noriega et al., 2022). Finally, the use of intelligent algorithms and reinforcement learning strategies in online interactive teaching systems has shown greater advantages over traditional methods, further enhancing the effectiveness of online English teaching. Collectively, these studies underscore the importance and benefits of using interactive slides in online English teaching, highlighting their role in improving engagement, learning outcomes, and overall teaching quality.

In addition to the advantages, disadvantagses of interactive slides have also been reported. These platforms might face both technical and pedagogical challenges. On the technical side, setup and compatibility issues can hinder use, particularly for students with limited internet access or older devices (Anggoro & Pratiwi, 2023). While platforms like Interactive Code Playgrounds (ICPs) simplify things by only requiring a web browser, they still rely on stable connectivity and capable devices (Angeli et al., 2024). From a teaching perspective, it's essential that these interactive elements align with learning objectives to keep students motivated (Pratiwi et al., 2024). If particular features do not clearly enhance learning outcomes, both students and teachers may find them overwhelming (Patten, 2023). Pear Deck, an IRS tool designed to promote student-centered learning, may vary in effectiveness based on student proficiency levels (Pratiwi et al., 2024). To ensure student engagement, it is important that students fully understand how to use these tools (Limerick, 2020), and the systems need to be user-friendly to avoid frustration (Vidya et al., 2023).

Despite the challenges, it is essential for pre-service teachers to develop digital competence, particularly in using modern technological tools like interactive slides for online instruction. As the world becomes more interconnected and technology-driven, educators must continuously adapt their methods to effectively engage learners. In this regard, online teaching technologies, such as interactive response systems, can play a vital role for English as a Foreign Language (EFL) teachers by facilitating dynamic interactions and enhancing

student engagement. By promoting self-directed learning in tandem with the integration of these technologies, teacher education programs can better prepare future educators with the necessary skills to navigate and thrive in this evolving educational landscape.

3. Method

3.1 Research Design

This study employs a mixed-method approach to investigate the self-directed learning experiences of Thai pre-service English teachers in utilizing interactive slides for online English teaching. The first objective utilizes a qualitative methodology to explore how these teachers engage in self-directed learning. The second objective follows a sequential design, starting with qualitative data collection and analysis, followed by a quantitative phase to strengthen the findings. Figure 1 illustrates the design of this study.

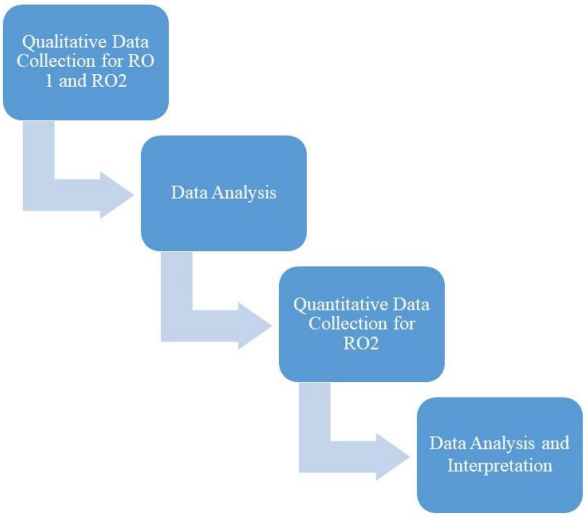

Figure 1. The study flow

3.2 Participants

This study focuses on 29 pre-service English teachers at a Thai university. The participants were selected through purposive sampling to ensure their relevance to the research objectives. As part of their coursework, they had previously used interactive slides for online teaching in small groups during the previous semester, specifically in a course that focused on developing reading and writing skills for their peers. In addition to this, the other criteria for participant selection included the following:

- Participants could be either female or male students.
- They were aged between 19 and 25 years old.
- They provided informed consent to participate in the research for a duration of four weeks.

This purposive sampling is justified as the study aims to explore the specific experiences of pre-service English teachers engaged in SDL through interactive slides, allowing for meaningful insights integral to the research objectives.

Ethical approval was granted by the university ethics committee, ensuring adherence to ethical standards. Informed consent was obtained from all participants, with strict measures in place to maintain anonymity and confidentiality. Participants were also informed of their right to withdraw from the study at any time, safeguarding their autonomy throughout the research process.

3.3 Instruments

Two instruments were used to collect data for this study: a qualitative open-ended survey and a Likert-scale survey. The two different surveys reflect this study's research design. The first survey aimed to answer research questions 1 and 2. It aimed to give the participants a flexible platform to freely express and share about their journeys and experiences. The second survey is also substanstial as it strengthens the findings to answer research question 2.

Creation of the instruments followed several steps. Firstly, the initial version of the survey was developed based on the research objectives and a review of relevant literature on self-directed learning and the use of interactive slides in online education. Then, the survey was reviewed by three experts in educational technology, who assessed it for clarity, relevance, and alignment with the research objectives. Based on expert feedback, several revisions were made. The statements in the Likert-scale survey were reduced in number from 25 to 7 to ensure focused measurement of key areas such as convenience, usability, engagement, and effectiveness, without overwhelming participants. Open-ended prompts were refined to encourage more focused responses. For instance, the original prompt " Why did you choose the platform?" was changed to " Why did you choose the platform? What factors were important when selecting a platform for interactive slides?" Lastly, after these revisions, a two-week pilot study was conducted to ensure the survey's clarity and effectiveness before full implementation. Feedback from the pilot study also indicated that seven statements were sufficient to capture meaningful

insights without detracting from participant engagement.

3.4 RQ1: Data Collection & Analysis

This objective adopts a phenomenological approach to understand the lived experiences of pre-service English teachers regarding self-directed learning with interactive slides.

Instead of face-to-face interviews, data were collected using an online open-ended survey. The survey was designed to allow participants to respond to questions in their own words, providing insights into their experiences with self-directed learning. According to Wijngaards et al. (2019), the use of online open-ended surveys is beneficial as it allows for the collection of rich, qualitative data that can capture nuanced sentiments and experiences of respondents. Participants were allowed to answer in Thai or English. The survey included prompts related to their self-learning journey to select and master a platform for interactive slides. The survey was distributed through the online platform Google Forms, and participants were given a week to complete it.

Using an online survey is suitable for this objective, as it allows participants the flexibility to respond at their own pace, reflecting on their experiences in a less pressured environment compared to face-to-face interviews. The anonymity afforded by online surveys can lead to more honest and candid responses from participants, as they may feel more comfortable disclosing sensitive information without the presence of an interviewer (Campbell et al., 2020).

Prior to analysis, the Thai responses were translated by both researchers to ensure trustworthiness. The data were then analyzed using thematic analysis steps by (Saldaña, 2021). It started with familiarization through multiple readings. Then, initial thematic codes were generated inductively from the responses, followed by the development of broader themes to capture patterns in participants' engagement with self-directed learning using interactive slides. The codes and themes were reviewed and refined to ensure accuracy and coherence, with overlapping or redundant codes combined. This process provided a clear and comprehensive understanding of participants' experiences. In this study, thematic analysis was done by hand to allow for a deeper, more personal engagement with the data. Hand coding promotes flexibility in adapting analytical strategies to new insights, enhancing the richness and depth of analysis essential for capturing the complexity of human experiences in qualitative research (Mihas, 2019).

3.5 RQ2: Data Collection & Analysis

To answer RQ2, the mixed-method approach was applied. The mixed-methods approach provided a more comprehensive understanding of participants' experiences. The qualitative phase offered in-depth insights into their reflections, while the quantitative phase might allow for capturing trends, broader generalizations and statistical validation of the findings. According to (Mayoh et al., 2012), a sequential exploratory mixed method begins by collecting and analyzing qualitative data before moving on to quantitative data, allowing researchers to gain a richer understanding of participants' experiences before generalizing their findings. The breakdown of the qualitative and quantitative phase in this study is, as follows.

3.5.1 Qualitative Phase

This phase used a qualitative case study approach to gather detailed insights into the reflections and experiences of the participants. Data was collected using an online open-ended survey, which allowed participants to respond to questions in their own words. The survey included questions related to participants' experiences with self-directed learning, challenges faced, motivations, and how they engaged with interactive slides. The survey was distributed via Google Forms and participants were given one week to complete it. Using an online survey was also appropriate for this objective as it allowed participants flexibility in completing the survey at their own pace, providing detailed responses to capture the depth of their experiences. The data analysis followed a similar approach as the first objective, with responses in Thai translated before conducting the thematic analysis.

3.5.2 Quantitative Phase

Following the qualitative phase, a quantitative survey was administered to the same participants to measure their experiences with interactive slides and self-directed learning. The quantitative survey aimed to capture broader trends in participants' engagement, satisfaction, and confidence.

The survey included Likert-scale questions that measured participants' engagement with interactive slides, their confidence in using the tool for teaching, and their perceived effectiveness of the self-directed learning process. The survey was distributed online, and participants were given one week to complete it.

Descriptive statistics were first used to analyze the survey data. To ensure the appropriateness of inferential statistics, normality tests were conducted using SPSS. Once normality was confirmed, inferential statistics were used to compare perceptions based on gender, technological skills, prior online study preferences, and online teaching preferences. Previous studies have demonstrated the perceived effects of gender technological skills (Pishnyak & Khalina, 2021), and preferences (Lee & Daunizeau, 2019).

4. Results

4.1 RQ1: How Thai Pre-Service English Teachers Engage in Self-Directed Learning to Utilize Interactive Slides for Online English Teaching

For this objective, qualitative investigation was initially conducted through an online open-ended survey. Then, in-depth interviews were done to enrich the data.

4.1.1 Question 1. Why Did You Choose the Platform? What Factors Were Important When Selecting a Platform for Interactive Slides?

The analysis in Table 1 shows that the primary reasons for choosing platforms for interactive slides are ease of use, student engagement, and interactive features. Familiarity with the platform and the availability of various tools and activities are also important factors. Real-time feedback, motivation through rewards, technical compatibility, and creativity play significant roles in the decision-making process. These factors collectively help in making the learning experience more engaging and effective for both teachers and students.

Table 1. Breakdown of Participants' Responses to Question 1

Theme	Number of Mentions	Examples
Ease of Use	13	"ClassPointใช้งานง่าย ทำให้ผู้สอนสามารถเรียนรู้และใช้งานได้อย่างรวดเร็ว."
Student Engagement	12	"Real-time collaboration features are also important for engaging students."
Interactive Features	14	"Pear Deck has options for creating interactive slides with quizzes and drawing."
Familiarity	8	"We chose to use Classpoint for our micro-teaching because Ajarn Noon uses it."
Variety of Tools and Activities	10	"This platform has a variety of tools to attract the attention of students."
Real-time Feedback	6	"Pear Deck can receive answers from students in real time."
Motivation and Rewards	3	"The platform has functions to reward students for answering questions."
Technical Compatibility	5	"It's most user friendly for my device (iPad)."
Creativity and Innovation	4	"Mentimeter is the least premium but has the same functionality as Canvas."

4.1.2 Question 2. Explain How You Learned to Use the Platform. State the Steps

Table 2 showed that participants shared a variety of practical steps for learning how to use new platforms. Many started by watching tutorial videos, often on YouTube, to get a general sense of how the platform worked. Others recommended diving in by creating a practice account or project, which allowed them to explore and experiment with the platform's features without pressure. Reading the platform's help guides or documentation was also mentioned as a useful way to understand specific tools and functionalities. A common approach was learning through trial and error—many participants pointed out that making mistakes was part of the process and helped them grow more comfortable with the platform. Some found that collaborating with peers or asking for help from those more familiar with the platform was invaluable. It was also helpful for many to integrate the platform with tools they were already comfortable using, which made the learning curve a bit easier. Finally, a few participants suggested following a step-by-step method, from signing up to creating and sharing content, to make the process feel more manageable and less overwhelming.

In short, learning to use different platforms for interactive slides involves a combination of watching tutorials, experimenting, using online resources, practical application, collaborating with peers, and integrating familiar tools. By following a systematic approach, users can effectively master the platforms and create engaging interactive content.

Table 2. Breakdown of Participants' Responses to Question 2

Learning Method	Number of Mentions	Examples
Watching Tutorials and Videos	14	"First, I watched the session provided on the Youtube platform."
Exploring and Experimenting	12	"I explored the platform on my own, experimenting with creating interactive slides."
Online Resources and Documentation	10	"I watched tutorial videos and read the platform's documentation."
Practical Application and Trial	9	"I learned by trial and error."
Collaborating with Peers and Teachers	8	"I tried having friends in the group come and play."
Using Familiar Tools and Integration	5	"I did the part of the presentation in Canva, and then uploaded it to Pear Deck."
Systematic Learning Approach	4	"1 signed up on the Genially website. 2. I familiarized myself with the interface."

4.2 RQ2: The Reflections and Experiences of Thai Pre-Service English Teachers on Their Self-Directed Learning Journey Using Interactive Slides Online

For this objective, both qualitative and quantitative data were collected. The qualitative investigation aimed to deeply comprehend the participants' experiences, while the quantitative strategy helped conclude the findings.

In the qualitative data collection, participants answered four open-ended questions in an online survey. The quantitative data were gathered through 7 Likert-scale statements in an online survey as well.

4.2.1 Qualitative

4.2.1.1 Question 3. In Your Opinion, Was It Easy or Difficult to Learn? Why?

Table 3 shows that participants had a range of experiences when learning to use the platform and were influenced by several factors. For many, the ease of learning was enhanced by a user-friendly design, prior experience with technology, and clear instructional materials. However, some faced difficulties due to the platform's initial complexity, a lack of experience, and technical issues. Learning aids like tutorial videos, documentation, and support from peers were essential in helping users navigate these challenges. Technical problems, such as device compatibility and platform stability, also created hurdles for some. Digital natives, or those who grew up with technology, generally found it easier to adapt. Ultimately, personal motivation and effort played a crucial role in overcoming obstacles and succeeding in learning the platform.

Table 3. Breakdown of Participants' Responses to Question 3

Category	Number of Participants	Examples
Ease of Learning	15	"I think it's easy to learn because I've tried it myself and with a group of friends." "In my opinion, it is easy to learn because many platforms today are designed to be user-friendly and easily accessible." "For me, the Pear deck platform is easy to learn, not difficult, and can be learned through various online media."
Difficulty of Learning	7	"In my opinion, it was not particularly easy to learn the platform. The reasons include the initial complexity of understanding all the features and tools." "It's secretly difficult because I've never used it before. Everything has to start from 0." "It's difficult to use this platform without a laptop."
Mixed Experience	10	"It is pretty easy to learn it but sometimes I have to challenge myself with new options." "Learning to use online platforms is not too difficult. But we just need to have enough motivation and interest." "In my opinion, although it is the first time for micro teaching with interactive slides, we have experience learning with Class Point before, so it is not that difficult for us to learn how to use it for teaching and engaging students in class."

4.2.1.2 Question 4. Mention or Highlight the Benefits and Drawbacks of the Platform, If Any

The analysis in Table 4 and 5 shows that the most frequently mentioned benefits of the platform are its interactive and engaging nature, ease of use, and the ability to provide instant feedback. However, participants also noted technical issues, costs associated with premium features, and a learning curve as significant drawbacks. Balancing these benefits and drawbacks is crucial for maximizing the platform's effectiveness in educational settings.

Table 4. Breakdown of the Platforms' Benefits

Benefit	Number of Mentions	Examples
Interactive and Engaging	9	"Can make lessons interactive and engaging..."
Ease of Use	8	"Easy to use, able to interact quickly."
Instant Feedback	5	"Students receive instant feedback on their performance."
Templates and Features	7	"Lots of templates and interactive elements."
Collaboration and Teamwork	3	"Allows teamwork."
Accessibility	3	"Can be used anywhere if there is internet."

Table 5. Breakdown of the Platforms' Drawbacks

Drawback	Number of Mentions	Examples
Technical Issues	6	"Connectivity problems or technical glitches can disrupt the experience."
Cost and Premium Features	6	"Some features cost money."
Learning Curve	4	"Takes time to learn."
Device Compatibility	3	"Difficult to use without a laptop."
Lack of Certain Features	2	"Does not provide any stimulation to learners, such as giving stars."

4.2.1.3 Question 5. In Your Opinion, Is It Important and Effective to Use Interactive Slides to Teach English Online? Why? Explain Your Answers

The analysis in Table 6 indicates that most respondents believe that using interactive slides to teach English online is both important and effective. The key benefits highlighted include increased student engagement, effective teaching, immediate feedback, adaptability to different learning styles, real-time interaction, and addressing the challenges of online learning. These elements contribute to making online English classes more dynamic, interesting, and productive.

Table 6. Breakdown of Participants' Responses to Question 5

Theme	Number of Mentions	Examples
Increased Engagement	14	"Students will have fun learning and gain knowledge at the same time."
Effectiveness in Teaching	10	"Interactive slides help teach English online by keeping students interested."
Immediate Feedback	7	"Allows for immediate feedback and caters to various learning styles."
Adaptability and Customization	5	"Interactive slides can be customized to suit different learning styles."
Real-time Interaction	4	"Teachers can understand how much the students understand the lesson in real-time."
Addressing Online Learning Challenges	5	"Online learning can be boring, but interactive slides make it more interesting."

4.2.1.4 Question 6. In General, Are You Satisfied with Your Teaching Performance? Why or Why Not?

The analysis in Table 7 indicates that while many respondents are generally satisfied with their teaching performance, there is a strong emphasis on the need for improvement in various areas. The key areas for improvement include incorporating more interactive activities, better time management, increasing student engagement, enhancing creativity, and overcoming technical and platform issues. Personal

reflection and effort are also significant factors, with many respondents acknowledging the importance of preparation and planning to enhance their teaching effectiveness.

Table 7. Breakdown of Participants' Responses to Question 6

Theme	Number of Mentions	Examples
General Satisfaction	12	"In general, I am satisfied with my teaching performance."
Need for Improvement	16	"I'm still not satisfied because I think I can improve my teaching more."
More Interactive Activities	8	"Could use more interactive activities to keep students interested."
Better Time Management	6	"Better time management to ensure all topics are covered thoroughly."
Increased Student Engagement	5	"Interactive slides can help increase student engagement."
Enhanced Creativity	4	"There isn't enough creativity in my teaching."
Technical and Platform Issues	3	"Some problems come from the platform I think."
Self-Confidence and Speaking Skills	3	"Increase confidence in speaking."
Preparation and Planning	3	"Plan your teaching well."
Personal Reflection and Effort	7	"I am quite satisfied because this was my first time teaching online."
Technical and External Factors	3	"Not satisfied at all because of my group just leaving me alone."

4.2.2 Quantitative

As previously mentioned, in addition to qualitative data, quantitative data were gathered to help conclude the findings. There were seven Likert-scale statements presented to the participants in an online survey. Table 8 shows the overall breakdown of students' responses to the seven statements. The numbers indicate that participants mostly showed positive attitudes towards the use of interactive slides when teaching English online.

Table 8. Overall Perception of students

	Convenience	Usability	Engagement	Effectivess	Continuity	Recommending others	Overall Satisfaction
Mean	4.00	4.38	4.14	4.17	4.41	4.28	4.28
SD	0.53	0.78	0.83	0.71	0.78	0.70	0.70

To analyze the data further, inferential statistics was performed. Prior to that, test of normality indicated that the data are not normally distributed, as shown in Table 9. Hence, non-parametric inferential statistics were utilized.

Table 9. Test of normality

Tests of Normality						
	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
The interactive slides platform is user-friendly.	.362	29	.000	.710	29	.000
I think the interactive slides platform is useful to teach online.	.340	29	.000	.733	29	.000
I think the interactive slides platform helps engage my students online.	.229	29	.000	.829	29	.000
I think the interactive slides platform makes online teaching more effective	.251	29	.000	.801	29	.000
I will use the platform again to teach English in the future.	.360	29	.000	.711	29	.000
I recommend others to use the platform when teaching English online.	.263	29	.000	.786	29	.000
Overall, I am satisfied with the interactive slidess platform.	.263	29	.000	.786	29	.000
a. Lilliefors Significance Correction						

Students' responses were further analyzed based on several components, gender, technological skills, as well as online study and teaching preference. Kruskal Wallis tests were administered for this purpose. Table 10 sums up the results of the tests. The four components were selected due to their possible effects on students' perceptions. The table shows that the four components, all in all, did not significantly affect students. However, there was one statement, "I think the interactive slides platform is useful to teach online" with a significant result as compared to students' preference to study online. This indicates that there is a significant difference of perceptions related to the platform usability between participants who enjoyed and did not enjoy studying online.

Table 10. Kruskal Wallis Test Results

No	Null-Hypothesis	Sig. by gender	Sig. by skills	Sig. by Online Study Preference	Sig. by Online Teaching Preference
1	The interactive slides platform is user-friendly.	.253[1]	.084	1.000[1]	1.000
2	I think the interactive slides platform is useful to teach online.	.062[1]	.724	.024[1]	.353
3	I think the interactive slides platform helps engage my students online.	.199[1]	.682	.586[1]	.663
4	I think the interactive slides platform makes online teaching more effective.	.085[1]	.784	.066[1]	.351
5	I will use the platform again to teach English in the future.	.167[1]	.784	.303[1]	.266
6	I recommend other others to use the platform when teaching English online.	.472[1]	.240	.527[1]	.386
7	Overall, I am satisfied with the interactive slides platform.	.199[1]	.111	.913[1]	.649

5. Discussion

5.1 Pre-service Teachers' Self-Directed Learning to Use Interactive Slides

Concerning the pre-service teachers' SDL, diverse staretegies were used. One popular method is consulting readily available online resources such as tutorial videos or websites with implementation steps. Another way is self-exploration, where participants independently try using the platforms, following the instructions given on the websites. Another finding is collaboration with peers and teachers. Some participants taught each other what they knew about their platforms. They also approached their instructors or lecturers implementing interactive slides for advice or further guidance. These findings show various examples individuals conduct SDL, ranging from solitary to collaborative (Loeng, 2020). They add to the literature by highlighting real-life strategies that pre-service teachers use when engaging in SDL, an empowering tool for self-learning (Beach, 2017).

Another contribution might lie in the the real-life factors influencing the selection of interactive platforms. While previous studies like Ramírez-Noriega et al. (2022), Pratiwi et al. (2024), and Anggoro (2025) have highlighted why students enjoy using interactive slides, this study indicates why student teachers choose certain platforms for teaching EFL virtually. The findings show that ease of use, interactive features, and student engagement were the most frequently mentioned factors. The participants' familiarity to the platforms influenced their decisions as some selected interactive slides previously used by their lecturers or classmates. Additional factors included gamified elements and real-time feedback features.

5.2 Pre-service Teachers' Reflection and Experiences Performing SDL for Using Interactive Slides

Pre-service teachers reported that interactive slides were effective for teaching English online. Benefits included increased engagement and immediate feedback, aligning with previous studies (Aloreafy & Saty, 2022; Anggoro & Pratiwi, 2023) who found that interactive slides enhance language learning outcomes. This consistency with Zhang et al. (2024) supports the notion that interactive teaching designs positively influence online learning behaviors. Furthermore, the literature highlights the crucial role of real-time interactions in maintaining student focus and motivation (Ramírez-Noriega et al., 2022), reflecting the findings that interactive slides make lessons more dynamic. In addition to the above benefits, some participants highlighted that several platforms improve adaptability to various learning styles. This might be a reason for interactive slides implementation in other settings, especially where the learners' styles are diverse.

The findings also highlight challenges such as technical issues, cost barriers, and steep learning curves associated with these tools. These challenges align with literature emphasizing the need for accessible tools aligned with learning objectives (Pratiwi et al., 2024; Aloreafy & Saty, 2022). If platforms are too complex, they may overwhelm teachers and students (Zeng et al., 2020; Patten, 2023). Connectivity challenges and integrating complex tools into online environments are consistent with the broader issues discussed in the literature (Colocado, 2024). The emphasis on technical compatibility highlights the need for robust infrastructure to support effective online teaching. Also, careful selection and exploration of the platform are highly needed for a successful implementation. Since different platforms might have different features, early exploration might help a teacher decide the best platform to achieve a learning goal or to cater to students' learning styles.

Moreover, the literature notes that gender and self-regulated learning (SRL) are factors influencing success with digital tools, with female pre-service teachers often exhibiting stronger SRL skills (Güneş et al., 2023). However, findings from this study did not reveal a significant effect of gender on perceptions of digital tools, indicating that prior experience and institutional support may play a more critical role. It is noteworthy, however, that the participant pool in this study is limited. Notably, there is a significant difference in perceptions of platform usability between participants who enjoyed studying online and those who did not. Participants who preferred online learning were more likely to view interactive tools as beneficial and user-friendly, suggesting that enjoyment of the online format may enhance their engagement and willingness to explore these platforms.

These findings reinforce current research suggesting that interactive slides offer pedagogical benefits in digital EFL instruction, particularly when they are responsive to learners' needs and supported by reliable infrastructure. Yet, their effectiveness appears to rely on more than just design quality. Factors such as teachers' digital confidence, students' receptiveness to online learning, and the level of institutional support all seem to play a significant role. For instance, the relationship found between enjoyment of online learning and perceived platform usability points to the influence of affective and motivational factors on tool acceptance. Meanwhile, the absence of gender differences in this study, despite previous research highlighting them, suggests that other variables, like prior experience or training opportunities, may now be more critical. These insights highlight the need to approach digital tool integration in teacher education with attention not only to the platforms themselves but also to the broader conditions that shape their use and impact.

6. Conclusion

This study provides valuable insights into the experiences of pre-service EFL (English as a Foreign Language) teachers using interactive slide platforms, particularly in the context of self-directed learning (SDL) and student engagement. The key findings reveal that these pre-service teachers effectively employed a range of SDL strategies, such as watching video tutorials, collaborating with peers, and hands-on experimentation, to master platforms for interactive slides. These platforms were found to be user-friendly and conducive to enhancing student engagement through interactive features, including real-time feedback and gamification elements. However, challenges related to technical issues and varying levels of digital competence impacted their effective use of these tools. Studying these interactive platforms is particularly significant as it may enhance pre-service teachers' abilities to deliver engaging online lessons, a skill that is

becoming increasingly important in today's educational landscape.

This study has its limitations. The sample size may not fully represent the diverse experiences of all pre-service EFL teachers, and the research primarily focused on a specific context, which may limit the generalizability of the findings. Future research could benefit from exploring a larger and more diverse group of pre-service EFL teachers across different regions and educational contexts. Hearing from students about their experiences with these tools would add another layer to understanding their effectiveness. Finally, investigating innovative solutions to the technical challenges identified in this study could pave the way for more educators to embrace interactive learning tools, enriching the educational experience for everyone involved.

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Authors' contributions

Dr. Kiki Juli Anggoro and Dr. Pornthip Kerdthawon were jointly responsible for all phases of this study, from conception to completion. Both contributed to the ideation, study design, administration, data collection and analysis, as well as the writing of the manuscript.

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