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BOOSTING ESP STUDENTS' LEARNING MOTIVATION THROUGH GEN-Z TEACHERS' TECHNOLOGY INTEGRATION

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Abstract
The integration of technology in teaching ESP courses in rural universities has shifted from a conventional to an integrated learning process. Hence, technology integration remains challenging for urban Gen-Z teachers due to rural students' learning habits. This current study focused on how ESP teachers empowered technology to encourage rural students' positive learning emotions. Nine teachers with urban culture and habits from three rural universities were involved in the interview study. Based on deductive content analysis, the findings revealed students' preferences towards the types of learning technology (i.e., web-based apps, social media platforms, and electronic tools). Particular strategies (i.e., mobile learning and social media use, flipped classrooms, blogging, and podcasting) were indulged during the ESP course. On the other side, the teachers were challenged with teaching and learning barriers (i.e., linguistic, cultural and psychological) that reduced technology use quality. Above all, ESP courses in rural contexts should be promoted using a particular instructional design and approach.

Keywords: ESP course, gen-z teacher, positive learning emotion, technology integration

Introduction
While emotion is flexible due to contextual impacts, positive emotions among English for Specific Purposes (henceforth ESP) students emerge as a learning success indicator. Positive learning emotions (henceforth PLEs) are triggered by integrating positive feelings into the learning process. ESP students who are overwhelmed with PLEs can encourage their strategic learning, which leads to higher achievement as an expected goal (Meyer et al., 2024; Xu, 2024). Meanwhile, the PLEs concept mostly refers to emotions such as creativity, interest, passion, joy, or curiosity. Such an ideal conception of PLEs, for example, has shed light on ESP curriculum reform in rural Indonesian universities. PLEs are not only considered learning principles but also continuous teaching goals.

Nevertheless, PLEs do not explain any expected learning goals when facing a rural context. Opposite emotional development rises more negatively as ESP students in rural universities are engaged in an English lesson with its specific materials and practices. Rural students avoid ESP lessons or are less motivated to

learn classroom presentation and interaction; they need to be better engaged in learning plans, implementation, evaluation, and feedback (Mahmud, 2020). Such an absence of engagement does not overdo technology integration into ESP classrooms. For many reasons, ESP students in rural higher education are ordinary students whose basic learning need is to be indulged in fun, practical lessons. Correspondingly, recent studies (An et al., 2022; Ismail & Alharkan, 2024; Lin et al., 2024; Peng et al., 2021; Villamil & Heshmati, 2023) have been focused on applying technology to attract positive emotions in learning contexts. The studies prove that the use of technology not only increases academic scoring levels, but also encourage psychological empowerment, such as PLEs. It is noticed that teaching English results in transformative development for students who are not fully experienced with technology, leading them to integrate both new concepts and practice during academic activities, such as an ESP lesson.

Rurality in higher education remains challenging for both ESP students and teachers. The term contains differences from urban contexts regarding teachers, facilities, curriculum implementation, material development, and technological integration (Cao & Huo, 2025; Welsh, 2024). In this case, PLEs in rural universities must be raised by applying technology to ESP classrooms. Its objective is to encourage ESP students with lower learning motivation to accept English lessons as valuable input for their present and future support. However, an issue emerges as most senior university ESP teachers tend to conduct a lesson through conventional methods such as lecturing and manual tools such as a whiteboard or reading aloud (Bobkina et al., 2023; Petraki & Khat, 2022; Qiu et al., 2024; Romadhon, 2024). This phenomenon was familiar in rural university life before novice and fresh teachers got involved in ESP lessons. Interestingly, the emergence of Generation Z (i.e., abbreviated by Gen-Z) teachers in rural ESP classrooms has become a new transformation to achieve positive emotions during students' learning (Noughabi et al., 2024; Venida, 2022; Zhao et al., 2022). Practical ideas, concepts, and classroom management through technology use are needed to enhance "unmotivated" ESP students' PLEs as they view English lessons as an unfavourable course.

Although many previous studies (Arifani et al., 2023; García-Sánchez, 2024; Nalipay et al., 2021; Petraki & Khat, 2022; Sadoughi & Hejazi, 2021; Synekop & Lytovchenko, 2024; Zhang & Tsung, 2021; Zhu et al., 2024) focused on ESP students' learning, positive learning emotions, and technology integration in higher education, another focus on rurality for these scopes received little attention in many studies. Therefore, this study investigated Gen-Z teachers' breakthroughs to transform ESP students' lower motivation into a more positive emotion by integrating technological tools or applications. Meanwhile, it is different from previous studies in many ways. To begin, fresh young teachers or Gen-Z teachers who began teaching English at the university were invited to share their best practices in teaching ESP students. These teachers had higher teaching motivation and indulged in technology use in daily life and academic contexts. Another difference is that the rural university atmosphere was determined to be explored regarding the ESP learning process. The rural atmosphere shares unique and static learning development, which does not occur in urban universities. Advanced educational technology has not been widely developed and provided in ESP

classrooms. In addition, this study investigated low-motivated ESP students regarding their considerable transformation into PLEs.

Several questions were addressed to limit the scope of study, as follows:

1. What are technology preferences applied by rural university Gen-Z teachers in ESP classrooms?
2. How do Gen-Z teachers integrate technology to raise ESP students' PLEs in rural universities?
3. How do barriers affect PLE development using technology in rural university ESP courses?

Literature Review

Positive learning emotions (PLEs)

PLEs refer to the feelings that enhance students' involvement and general pleasure in learning. These emotions are paramount for promoting efficient learning and are linked to a more positive learning experience. Several aspects of PLEs need to be considered in language learning (Zhang & Tsung, 2021). To begin, curiosity is an innate inclination to investigate, uncover, and acquire further knowledge about a subject such as ESP. The preference for knowledge leads to students' determination to acquire information and enrich their knowledge. For example, preparing curiosity for an ESP lesson or topic enhances the pleasure derived from the learning process. When ESP students find a topic exciting, they are more likely to be interested and devote effort to studying it. The emotion is characterised by excitement and eagerness that invigorate the acquisition of English language knowledge (Yang et al., 2022; Zhang, 2024). The feeling of excitement frequently accompanies the eager expectation of uncovering novel knowledge or achieving proficiency in a certain ability. A strong sense of self-assurance in students' capacity to comprehend and utilise information is essential for optimal learning outcomes (Akhmedjanova, 2024). Positive reinforcement and a sense of accomplishment contribute to a boost in confidence. They are experiencing elation while learning, which might establish a favourable connection with the new knowledge. This point of view might arise from attaining objectives, surmounting obstacles, or purely relishing the process of acquiring knowledge.

Achievements, regardless of their magnitude, elicit a feeling of satisfaction. Commending accomplishments, regardless of their insignificance, strengthens favourable educational encounters (Cheng et al., 2023; Li, 2020; Theobald et al., 2021). Satisfaction is the state of being content that arises from effectively comprehending a topic or doing a task, which fosters a favourable learning atmosphere. The experience of finding a topic captivating and thought-provoking fosters a lasting interest and drive to explore the subject matter more extensively. Optimism entails retaining a favourable perspective and trusting students' capacity to acquire knowledge and develop, which creates a favourable atmosphere for efficient learning. Developing a sense of belonging to a learning community through online platforms or face-to-face interactions fosters a supportive atmosphere that amplifies pleasant learning-related emotions (Törmänen et al., 2021).

PLEs influence the whole learning process and provide multiple advantages for students and educational outcomes. Positive emotions, such as curiosity and interest, enhance involvement with the learning content. The students are more

inclined to actively engage in learning when they find a topic captivating or pleasurable. Positive emotions act as potent motivators (Sak & Pietluch, 2024; Tsang & Lee, 2023). Those who feel joy, enthusiasm, and a sense of success are more inclined to be motivated to establish and attain learning objectives. Motivation is a crucial determinant in maintaining consistent effort and perseverance. PLEs have been associated with enhanced memory and the ability to retain information. Positive emotional states empower their cognitive processes, resulting in improved encoding and memory of knowledge. Positive emotions have a beneficial impact on cognitive functioning, including problem-solving, critical thinking, and creativity. An optimistic emotional state can enhance their ability to think and process information by fostering a receptive and adaptable attitude (Nguyen & Habók, 2022). Adverse emotions, such as worry and anxiety, might hinder acquiring knowledge. PLEs serve as protective barriers against stress, fostering a calmer and more favourable learning atmosphere.

Positive educational experiences foster a favourable disposition towards learning as a whole. When learning is linked to good feelings, people are more inclined to pursue new knowledge and abilities throughout their lifetimes. Favourable learning emotions lead to a valuable learning environment. It encompasses the various forms of engagement with teachers, classmates, and the general ambience inside educational environments (Chevalère et al., 2023; Yuan, 2025). An environment fosters positive collaboration, communication, and a feeling of inclusion. PLEs enhance the development of resilience when confronted with difficulties. A resilient emotional base assists them in recovering from setbacks, persisting, and perceiving challenges as chances for personal development. Favourable cognitive effects contribute to valuable social connections within an educational community. It fosters a conducive environment where students feel at ease articulating their thoughts, asking for assistance, and engaging in collaborative efforts (Hwang et al., 2023; Zhang et al., 2021). Positive educational experiences foster the development of an enduring passion for acquiring knowledge throughout their academic or social lives. When they identify learning with positive emotions, they are more likely to remain curious and continue learning beyond formal education. PLEs enhance a comprehensive and efficient learning experience, influencing the learning process's cognitive, emotional, and social dimensions (Li et al., 2021; Ritchie et al., 2023). Fostering favourable emotions within educational environments has enduring impacts on their disposition towards learning and personal growth.

Technology in ESP classrooms

Technology is utilised in ESP classes to improve the teaching and learning process. The selection of technologies will be contingent upon the ESP course's objectives and the ESP students' requirements. For example, virtual learning environments (VLEs) are digital or online platforms created to facilitate collaborative learning and engagement. These options may encompass forums, discussion boards, and virtual classes. Online resources and databases provide access to digital libraries, databases, and archives of genuine resources tailored to the specific topic of study (Alkhawaldeh et al., 2023; Cheung, 2021). Such types encompass scholarly journals, industrial reports, and research pieces. *Simulation software* is a computer programme that imitates real-world scenarios or processes.

Simulations and virtual labs provide a pragmatic and safe setting for ESP students to implement their theoretical knowledge. It is especially advantageous in ESP classes focusing on technical and scientific subjects. Interactive whiteboards like *SMART Boards* provide interactive presentations, real-time collaboration, and annotation. The whiteboards have the potential to illustrate intricate concepts using visual means effectively.

Meanwhile, video conferencing and webinars are digital platforms such as *Zoom*, *Microsoft Teams*, or *Google Meet* that facilitate virtual communication and collaboration. They possess significant value in facilitating guest speaker events, facilitating virtual meetings, and establishing connections with experts. Online assessment tools are digital platforms designed to provide automated evaluation, encompassing various assessment forms such as quizzes, tests, and assignments (Zhang, 2024). The tools offer immediate feedback and assist in monitoring student progress. Language Learning Apps are mobile applications specifically intended for language learning and can be tailored to ESP students' needs. Applications such as *Duolingo, Quizlet*, or *Memrise* might offer specific materials for technical terminology and communication.

Other types of educational technology, such as collaboration solutions such as *Google Workspace, Microsoft 365*, and other project management software, facilitate and improve student collaboration. Users can collaborate on papers, presentations, and projects simultaneously. Augmented reality (AR) and virtual reality (VR) facilitate the creation of immersive learning experiences (Zhao et al., 2024). It is particularly advantageous for technical courses since ESP students can delve into 3D models or virtual surroundings. Podcasts and webinars are audio and visual programming forms that offer genuine listening practice opportunities. They can showcase professionals, facilitate debates, and provide real-life illustrations. Electronic portfolios (ePortfolios) enable students to exhibit their work, projects, and language proficiency. They might be shared with prospective employers or used for self-examination.

Social media platforms like *LinkedIn* or *Twitter* are effective tools for professional networking and keeping abreast of educational developments. In addition, educators can establish groups that are particular to each class, enabling them to communicate and share resources more effectively (Al Fraidan & Al-Harazi, 2023; Zheng et al., 2023). Automated writing feedback tools are software applications that offer automated evaluations of written tasks, specifically emphasising grammar, vocabulary, and style. Notable examples include *Grammarly* and *Turnitin*. Adaptive learning platforms adjust to the specific requirements and advancement of students. They offer customised educational routes tailored to individual performance. Integrating gamified features like quizzes, challenges, or leaderboards into the learning process enhances engagement and motivation (Vidanaralage et al., 2022).

Speech recognition software is a tool that evaluates and offers feedback on pronunciation and spoken language. Enhancing oral communication abilities is advantageous. Digital storytelling tools enable students to produce digital narratives, presentations, or movies about their academic discipline. It improves proficiency in both verbal and written communication, as well as in the use of technology. Moreover, when integrating technology into ESP classes, it is imperative to consider the students' distinct requirements, the course objectives, and the resources

at hand (Sanusi, 2022). An intentional and systematic method of technology integration has greatly improved the efficiency of ESP teaching.

Technology integration is essential in ESP classrooms for multiple reasons, as it yields numerous advantages that improve the teaching and learning process. Technology facilitates convenient access to resources tailored to the student's study area, encompassing reports, scholarly publications, and practical illustrations (Arifani et al., 2023; Petraki & Khat, 2022). This exposure facilitates students' active involvement with foreign languages in a setting pertinent to their professional aspirations. Technology's interactive and multimedia components, including movies, simulations, and interactive presentations, can captivate and engage students. Its heightened level of participation enhances the overall quality and efficacy of the ESP learning process. Technology enables the implementation of adaptable learning arrangements, such as blended learning models that integrate conventional classroom teaching with online resources (Gonzalez-Vidal & Moore, 2024; Hao et al., 2021; Mahapatra, 2020). Its adaptability caters to the varied learning preferences and timetables of ESP students.

Educational technology facilitates using adaptive learning platforms that customise the learning process to suit students' needs. It is especially advantageous in ESP classes, where students frequently possess diverse degrees of ability and backgrounds. Technology enables the incorporation of practical applications, including simulations, virtual laboratories, and collaborative projects (Raygan & Moradkhani, 2022). These applications offer students practical experiences directly applicable to their future careers. Online platforms and social media facilitate global connections between students, professionals, peers, and resources. Such networking facilitates their comprehension of global viewpoints and professional methodologies. Automated evaluation tools and internet-based quizzes offer immediate feedback to students. The immediate feedback facilitates students in promptly identifying and rectifying any deficiencies in language and content (Dai & Wu, 2022; Zhu et al., 2023).

Technology integration in ESP courses facilitates learning crucial digital literacy competencies among students. Having a high level of skill in using communication tools, collaborative platforms, and other technology applicable to their area of expertise is becoming increasingly crucial in professional environments (Jeon, 2023; Raygan & Moradkhani, 2022). Learning management systems (LMS) and online repositories facilitate the efficient organisation and dissemination of course content. Effective resource allocation provides advantages for university ESP teachers and students. Technology enables educators to deliver instantaneous updates on current trends and advancements. It guarantees that the language training is based on current practices and the changing characteristics of the field. Virtual collaboration technologies facilitate students' ability to collaborate on projects, exchange ideas, and offer comments, regardless of geographical location. It reflects the cooperative essence of numerous professional settings. Online communication platforms, such as forums and virtual gatherings, offer further avenues for language practice. Developing the communication skills necessary for professional contexts is of utmost importance (Han et al., 2024; Wu, 2020).

Technology enhances the evaluation process, increasing the efficiency of educators in evaluating student achievement. Learning analytics systems also

provide monitoring of student growth over time. Incorporating technology in ESP courses guarantees that students become acquainted with the tools and platforms frequently utilised in their prospective workplaces (García-Sánchez, 2024). It equips them with the technology-centric character of numerous professional domains. Incorporating technology in ESP classes improves language learning by granting access to genuine resources, heightening involvement, tailoring learning encounters, and equipping students with vital digital literacy abilities (Ali et al., 2024; Lee & Chen Hsieh, 2019; Lee et al., 2024). It ensures that language training is tailored to meet the specific professional needs of ESP students, enhancing their chances of success in their chosen fields.

Method

Participants and setting

Three public universities were the sites of the current investigation. The provincial capitals were at least 250 miles from each university, which was situated in a rural area. Due to their greater distance, the rural universities were surrounded by farming areas such as rice fields, gardens, livestock farms, and fisheries. Fortunately, each rural university was considered an appropriate solution to break the academic gaps between urban and rural education. However, as local traditions more or less influence ESP students' everyday routines, technology has yet to affect their learning process comprehensively. For such reasons, the three rural universities were selected as study sites.

Regarding the case sampling strategy, nine participants teaching ESP courses in the universities were purposefully selected. Having informed the study purposes, they revealed agreement and involvement during the interview study by signing an informed consent submitted earlier. Out of fourteen candidates, five ESP teachers retracted their participation. Their identities remained anonymous due to self-initiated privacy. Table 1 has detailed information on participants' demographic variables.

Table 1. Participants' demographic information

Code	Age	Year of Experience	ESP Classes
P1	25	1	Biology, Math, Physics
P2	26	3	Law, Education, Economy
P3	24	1	Chemistry, Management
P4	24	1	Biology, Bahasa Indonesia
P5	26	2	Religion, Counselling and Guidance
P6	26	3	Physics, Bahasa Indonesia
P7	25	1	Psychology, Sport, Accountancy
P8	25	2	Sport, Chemistry, Management
P9	24	1	Economy, Law

Based on pre-survey results, I selected Gen-Z participants based on several criteria:

1. The participants should be ESP university teachers with at least one year of experience. It ensures they were involved in planning, implementing, and assessing an ESP lesson.
2. The participants fully utilised various types of technology inside and outside classrooms. It was proved through technology-integrated ESP syllabus writing, material contents, teaching approaches, and assessments.

3. The participants were born between 1997 and 1999.

Gen-Z grew up during the massive advancement and development of technology for academic and informal purposes. They were believed to be automatically influenced by such technological integration. In this case, each participant should have lived in urban areas where technology was developed, utilised, and integrated into daily life. The urban citizens were registered as ESP teachers at a university located in a rural district. Lastly, they should have taught more than two ESP classes with different majors (i.e., English for Math or Law students) and grades (i.e., first- or second-year ESP students). It informed their active involvement in giving or receiving feedback from different students regarding technology integration.

Data collection

The first step was to inform the administrator of each rural university about study purposes and ESP teachers' voluntary participation during the study. I directly asked the administrators to let the teachers find out that the interviews were conducted based on anonymity. In addition to written agreement before participant selection, participants were asked to agree or disagree with their participation orally. Each participant was informed that they had two options during the interviews: delay any response or finish all interview questions simultaneously. The data were collected through nine face-to-face sessions, with each participant being interviewed individually. The qualitative data were collected at different interviews over three and a half months.

Regarding the negative impacts of social desirability bias (Bergen & Labonté, 2019), I initiated rapport with each participant in a personal room. In terms of the interview, the protocol was determined regarding the technological impact on rural university ESP students' PLEs. Because technology integration in rural ESP classrooms varies depending on users' interests and the learning atmosphere that leads to emotional change, I began each interview by asking nine ESP students as participants to reveal the most favourable technological tools or applications they apply in the ESP classrooms. I then went through the main discussion, asking about their strategies to utilise technology in shaping students' PLEs. The interview ended by asking questions about possible barriers encountered by the participants in developing PLEs using the technology. Each participant was interviewed in their first language (Bahasa Indonesia). The nine interviews, each lasting from 43 to 58 minutes, were recorded, stored, transcribed, and translated using digital tools such as smartphones.

Data analysis

A deductive qualitative content analysis was used to analyse the interview results. The step commenced with reading transcriptions constantly. To facilitate the data analysis efforts, I employed MAXQDA 2022 software. I deductively evolved each category and organised each code of identified themes regarding rural ESP teachers' technology preferences, technology application strategies, and barriers at each research focus. Each theme and top-down category were managed as the main results of the earlier deductive analysis. Considering the trends in utilising technology in ESP classrooms, I was primarily concerned with rural ESP

teachers' interests (i.e., types of technology). This step was followed by moving upwards toward outlying levels (i.e., practical application of technology) and the barriers that entailed each applied strategy. To increase the credibility and trustworthiness of interview results, I employed several related techniques. To begin, the member-checking technique was utilised to validate the interview results as integrated into the author's insights and final remarks. The next step was to return the interview transcripts and the themes withdrawn from the data to the nine participants. The last technique was that I embodied peer debriefing to identify any possible bias. In this case, deep discussion with several professors (i.e., specialists in English, educational technology, and psychology) who had no personal importance in the study was managed to ensure the quality of the final data results and analyses.

Findings and Discussion

Findings

Regarding the study objectives, as determined previously, I found several findings (Table 2) that had positive interrelation among technology preferences, application strategies, and barriers. Notably, the study results suggested that participants' technology preferences were synergistically influenced by strategies applied to teach ESP lessons using technology and barriers encountered when technology was used to enhance rural university ESP students' PLEs. It indicates that teaching strategies, barriers, and interests in a particular type of technology may have led to tangible descriptions of how ESP students' PLEs were properly improved with such technology.

Each participant received a unique code, including P1, P2, P3, P4, P5, P6, P7, P8, and P9. The code was available after the participants' utterances or interview excerpts.

Table 2. Preferences, strategies, and barriers of technology utilisation in ESP classrooms

Preferences	Strategies	Barriers
Web-based application Social media platform Electronic tool	Mobile learning and social media use Flipped classrooms Blogging and podcasting	Linguistic barrier Cultural barrier Psychological barrier

Preferences

The nine participants had different preferences toward the types of technology applied in ESP classrooms. The preferences were believed to be correlated with PLE development in rural universities. Hence, some limitations, such as access, signal, and infrastructure, impacted the Gen-Z ESP teachers' choices in a rural context. Frequency, where a particular type of technology was concerned during the interviews, was proposed to determine the preferences. This descriptive result was only used to support interview excerpts, not to convert the study into a quantitative nature. Meanwhile, the following table reveals participants' interest in technology utilised to develop rural university ESP students' PLEs.

It is noticed that the frequency did not determine its stratified level but mere interest in teaching ESP lessons using technology to help students dealt with positive minds. The participants utilised most of each type of technology in

different ESP classes. My interest in a particular technology allowed me to *"…indulge myself into a more practical purpose which leads to ESP students' satisfaction, happiness, and enjoyment"* (P3). As for web-based applications, *Kahoot* appeared to be the most frequent application in learning ESP lessons. The ESP students were interested as *"…they learn English while playing online games asynchronously…."* (P9). *Google Classroom* was chosen due to its *"…free access and easy procedure"* (P7), even though *Zoom Meeting* offered various properties.

Table 3. The frequency of technology preferences

Types of Technology		Frequency (*f*)
Web-based application	*Moodle*	4
	Google Classroom	10
	Edmodo	7
	Kahoot	11
	Coursera	4
	Udemy	4
	Zoom Meeting	6
Social media platform	*Whatsapp*	11
	Facebook	5
	Tik Tok	12
	You Tube	10
	Instagram	5
Electronic tool	Computer	6
	Laptop	10
	Smartphone	13
	Projector	5
	Tablet	4
	Liquid-Crystal Display (LCD)	7

Regarding social media platforms, *TikTok* and *WhatsApp* overdid other social networks such as *Instagram* and *Facebook*. *TikTok* was more popular for the participants as it *"…contains audio visual features and music that increase enjoyable feeling and reduce negative learning emotion"* (P1). Unlike *TikTok*, *WhatsApp* was reflected on *"…faster access, simpler use, and fascinating menu"* (P7). Similarly, the participants believed that *YouTube consists* of *"…a lot of interesting videos for learning ESP materials from different countries…."* (P2) and *"…free access to record and store podcasts online"* (P4). Meanwhile, smartphones as electronic tools overdid other technological tools due to their *"popularity, simplicity, menus, properties, and performance"* (P8). In short, it is noticed that the massive application of social media in learning ESP courses had been considered an emerging trend where most academic activities were managed through smartphones or tablets due to their flexibility and utility.

Strategies

The participants applied several strategies: mobile learning and social media use, flipped classroom, gamification, blogging and podcasting, and peer-assisted learning. These strategies were proposed based on participants' preferences and ESP students' interests in the types of technology. The availability of technological tools

and other supporting factors, such as signal intensity and infrastructure, were also considered to be why Gen-Z participants tended to adapt to such strategies in developing students' PLEs.

Mobile learning and social media use

Smartphones were generally benefitted as an effective communication tool, and university teachers or students were no exception. Even in rural education settings, smartphones had become the most popular tool for ESP teachers to encourage students' attention toward a lesson. The interview results showed that smartphones were used due to their practical learning function, and most students were considered well-trained. The participants found that learning ESP via smartphone attracted students to encourage their positive emotions. P7, for example, admitted:

> *The students were interested in learning English for Sport using a smartphone application. I permitted the students to bring smartphones into my ESP class as they looked happier to use them for learning. Using Kahoot allowed me to encourage them to play online language games enthusiastically. Whenever I invited them to complete a task, most finished it quickly.* (P7)

For ESP teachers, mobile learning was an appropriate strategy to develop rural university students' creativity. A smartphone was a tool that enabled students to access information comprehensively in a problem-solving task. A vast array of information offered in online sources (e.g., scientific websites or journal databases) was paramount to completing a task such as in an ESP lesson. Learning creativity emerged when the students produced new self-managed information using existing or previous resources. The participants recognised mobile learning could improve students' creative minds without considering the rurality setting. One of the participants, P2, who was involved in teaching English for Law for three years, experienced a creative atmosphere:

> *As every Law major student was registered in Edmodo, it was easier for me to include them in determining possible case study recommendations. I offered a case for 23 ESP students to be analysed using both theories and previous studies. By using Edmodo via smartphone, each student worked faster themselves and presented an answer both in the application and in front of the class. I noticed that their English was improved as they used various law-related dictions. Most ESP students admitted that online published articles inspired them to speak like a real law specialist.* (P2)

Meanwhile, social networks were paramount to engaging rural ESP students with active learning. The participants concluded that social media such as *WhatsApp*, *YouTube*, *TikTok, Instagram*, and *Facebook* increased students' motivation to learn specific English. Among them, *TikTok* and *WhatsApp* were more popular platforms for most ESP students as they are *"…interactive, simpler, and accessible either synchronously or asynchronously"* (P9). Another participant, P6, confirmed that his students were enthusiastic about the ESP course when they used *TikTok* as the learning platform. Their learning difficulties were reduced, and their learning engagement level increased considerably.

> *I am not a Physics teacher, but I struggled to use English in physics class. Fortunately, TikTok helped me a lot with this. For instance, I asked students to surf a TikTok video about gravitation via smartphone. Having watched the video, they wrote a brief report and discussed the report using English. I found that they felt happy watching the TikTok video and also enjoyed sharing information orally based on the video content.* (P6)

As a user-friendly platform, *WhatsApp* attracted ESP students' passion for learning and promoted self-controlled learning. The participants believed that social media led students to quick learning as they were well-trained before entering ESP classrooms. The ESP teachers did not have to train them to use *WhatsApp*, but they only instructed them on how to do an ESP task. One of the teachers, P4, used *WhatsApp* to *"...share some instructions, learning procedures, and softcopy of ESP materials without any time limitation"* (P4) since it comprised both real-time and non-real-time processes. What P1 did in English for Math class was interesting in that she communicated with the students via *WhatsApp* either during the lesson or outside the class. She knew that such rural university students had already used the platform daily.

> *My ESP students were enthusiastic about attending my class since the class utilised WhatsApp as a communicative learning tool. I sent materials to them whenever they needed them. They could also ask or send an answer to me via the platform. There was no border between the inside and outside of the classrooms. I applied the strategy to encourage their positive emotion to learn English for Match, which may be laborious sometimes. At least the platform helped them avoid presenting a task in front of the class, as they told me English needed more practice. Introducing English to them via social media could be a solution.* (P1)

It is paramount to sum up that ESP students' PLEs are effectively increased when teachers utilise mobile learning and social media via smartphones. This strategy leads to positive learning engagement, promoting active learning inside or outside the ESP classrooms. Mobile learning integration will have a popular impact on rural university ESP students.

Flipped classrooms

Flipping the ESP classroom was an effective strategy to develop students' positive emotions. Early findings of the participants showed that most ESP students in rural universities did not expect any English courses. They were worried about integrating English into their study program with zero focus on the English language. One way to help them was by dividing a class into two parts, including a pre-class presentation and a whilst-class meeting.

> *I was surprised by the number of students in the English for Economy course who indulged in class discussion. It was my third meeting in that course, and I applied the conventional method in the first and second meetings. Class discussion looked terrible to the students and to me, too. The flipped classroom has empowered their motivation and emotion and has improved their course materials.* (P9)

In some cases, there were tangible differences between direct and prepared learning, such as in a flipped classroom. Direct learning, for example, forced students to follow the learning procedures offered and finished learning materials as expected by the teacher. The students did not have any choice but to internalise learning material due to time limitations and course targets. On the other side, prepared learning, such as a flipped classroom, helped students be fully aware of what to learn and how to improve learning comprehension during course meetings. A fine experience by P3 proved that integrating a case study in a flipped classroom increased ESP students' self-confidence to present a report and engage in class discussion.

> *Regarding English for management, asking students to choose one case to be analysed before class has been far more effective in boosting their participation during material delivery. Many students became enthusiastic about speaking up and showing their analysis of the given case. They were emotionally motivated to present what they prepared at home.* (P3)

It is unreasonable to state that a flipped classroom reduced students' creativity and thinking skills as they prepared every possible report before formal course meetings. Fortunately, P5 experienced different findings. She found that students who learned English for religion could *"...memorise a verse and add some explanation in English"* (P5) without disturbing difficulty. Meanwhile, English was considered complicated for most students in chemistry. P8 was certain that a flipped classroom enabled his ESP students to describe the actions and reactions of some substance without looking at any notes.

> *It seems possible for students to be like real chemists or chemistry researchers who know much about action and reaction. That happened as I allowed them to discuss a topic before attending the real class. They were happier, and active discussion was employed outside the class.* (P8)

Blogging and podcasting

ESP students in rural universities engaged themselves in technology use when learning English. The audiovisual app, which allowed them to write a note in a blog and post a video in a podcast, was becoming more academically fascinating than entertaining. Some Gen-Z teachers had been experiencing quality improvement in ESP courses among rural learners through blogging and podcasting activities. P2 believed that *"...podcasting a video is a new learning activity for rural learners, but they are enthusiastic about recording a video in English and posting it on Youtube"* (P2), which other ESP students then refereed.

P4 taught the Bahasa Indonesian and held a musical storytelling competition for ESP students (i.e., first-year student, sophomore and senior levels). Every competitor was asked to utter a story about legend, folk, or other fiction stories and post the script and video on a blog and podcast. P4 stated that blogging and podcasting were *"...technologically interesting, but also academically positive for those who struggle to perform English competencies online."* In line with that, P2 challenged his English for law students to interview law experts and post it online. The score was determined through video length, clarity, English subtitles, and kind of interview topic.

> *Every introvert or extrovert student cheerfully approved the task. One completed an interview with a prosecutor, while others finished interviews with police, judges, and law experts. They edited and posted the video with English subtitles on a podcast website. When I asked them about their feelings, they wanted more than that. They even felt like journalists.* (P2)

P6 revealed the results of the blogging and podcasting activities for rural university students. His idea to encourage ESP students to post poem performances and theatrical scenes on a podcast led them to a transformative learning outcome. He believed the ESP students were *"…much creative to let their brighter ideas be revealed online and watched by many viewers."* (P6)

Barriers

Apart from preferences and strategies to utilise technology in rural universities, various barriers remained uncontrolled. The conventional approach to teaching ESP courses and students' learning habits were considered two indicators of the obstacles. ESP teachers generally experienced several types of barriers, including linguistic, cultural, and psychological barriers.

As for the linguistic barrier, it is noticed that the rural ESP students were not aware of how to utilise the technology due to language differences. They were not used to comprehending technical and complex terms in application or website content and instruction. Longer sentences with complicated grammar led the students to a lack of understanding of the technology. The linguistic barrier became the most general factor that hindered students from fully engaging with both forms and meanings of the English language. Although it was not easy to deal with such a language barrier, ESP teachers tended to perceive their teaching difficulties through a constructive approach, allowing them to modify strategies to encourage students' positive emotions. One of the ESP teachers, P1, admitted that *"repeated training was performed as the students learned how to use Kahoot for English for Physics course"*. However, the ESP students did not understand the app procedure better. They were challenged *"…with an unidentified grammatical system which has unidentified meaning…."* (P7).

Rurality is not simply defined as a place within a hundred miles of an urban area, but it has extensive context. This cultural barrier appeared to be impactful for those who were not culturally aware of rural habits and thoughts. In this case, it does not mean that rural universities are only managed through academic activities as directed by regulations. Yet, the cultures of its rural area led ESP students to inherit some considerable habits, such as applying conventional methods in learning English or simply proceeding with technology as an ordinary tool. Negative emotion emerged both conceptually and practically as the students cannot balance between academic and cultural needs. Consequently, ESP teachers struggled to transform students' emotions into a more positive mode. Moreover, such a barrier was influenced by using specific terms or jargon for specific purposes. It is not easy for rural students to engage with modern tools. Learning English for a particular purpose required students to accept technology as a part of culture. However, this problem appeared to be technical rather than a mere interest. The primary reason is that *"…rural university students do not transmit technology into academic culture"* (P4), which reduced technology internalization for English learning.

When technology was received as a main teaching and learning support, both ESP teachers and students were automatically challenged with psychological issues, such as academic emotions that required serious attention if the teachers expected a tangible positive result. Although it was not easy to control psychological burdens, the ESP teachers had to encourage themselves and their students to always include positive emotions in the ESP courses. Technology triggered emotions of isolation and loneliness, particularly for *"…students who thrive in rural settings, which reduces motivation and level of involvement"* (P8). The ESP students encountered difficulties maintaining motivation and efficiently managing their time without the organised framework provided by conventional classroom environments. Some rural students had apprehension associated with utilising technology, which *"…reduces their capacity to participate in online learning platforms and applications actively"* (P5). The students felt a deficiency in the quality of assistance and direction compared to traditional face-to-face learning, impacting their confidence and motivation to engage.

Discussion

This current study resulted in an integrated description of preferences, strategies, and barriers experienced by Gen-Z ESP teachers in rural universities. The focus was on exploring ESP students' positive learning emotions as the teachers challenged them using technology. There were three preferences (i.e., web-based apps, social media platforms, and electronic tools), three strategies (i.e., mobile learning and social media use, flipped classrooms, blogging and podcasting), and three barriers (i.e., linguistic, cultural and psychological). The results were interesting, as integrating technology in a rural context can be challenging for some reasons. The Gen-Z teachers who were used to living in an urban atmosphere may be curious about the rural learning process. Teaching ESP to rural students using technology is similar to that in the urban context, as most rural students are inexperienced users of technological tools, platforms, or applications (Lopez, 2021). Fortunately, it leads to a novelty that allows them to determine preferences, strategies, and solutions for learning barriers (Nikolopoulou et al., 2023; Okur & Hamutoğlu, 2023). It also encourages stakeholders to issue educational policy recommendations that offer a new design for online or offline ESP courses in rural university settings. Previous studies (D'Mello et al., 2024; Han & Geng, 2023; Schrader & Grassinger, 2021) were not fully focused on the technology used for teaching rural students.

Technology may not be directly related to PLE development, but some issues can be important factors as to why such advanced innovation makes a valuable contribution to ESP students in rural settings. To begin, rural students are believed to have unmotivated learning emotions if compared to those in urban universities. The conventional approach to learning English has become a popular habit for most students whose thoughts are concerned with product rather than process. Fortunately, technology is becoming interesting as students tend to deal with a variety of ESP learning activities. Their learning emotions lead to positive results even though other students have to struggle to accept technology as important learning support (Akhmedjanova, 2024; Zhang & Tsung, 2021). In this case, gen-Z ESP teachers, with their comprehensive experiences and understanding of

technology for English learning, are responsible for encouraging PLEs in rural contexts.

Web-based applications, as the first preference, offer a wide range of educational materials and tools to improve the ESP learning process. Numerous online apps have functionalities that facilitate interactions between rural ESP students and users to engage in real-time practice and exchange cultural knowledge (Klimova, 2021). The students are provided with a wide variety of educational resources, including grammar tutorials, vocabulary drills, pronunciation aids, and reading comprehension passages, all conveniently located in a single resource. Additionally, web-based apps are regularly refreshed with up-to-date content, encompassing the most recent language trends, slang, and idiomatic expressions, guaranteeing that ESP students are acquiring modern and pertinent English skills. Gen-Z ESP teachers use some features for monitoring progress, establishing objectives, and receiving prompts, which assist students in maintaining positive emotions throughout their educational program (Arifani et al., 2023).

The most widely used platforms, social media, were internalised into academic settings such as online ESP courses. Although some social media have become daily communication and entertainment platforms (Knaus, 2023), not all rural students are knowledgeable about their academic functions. Careful and smart strategies by Gen-Z ESP teachers should be emphasised to develop PLE. *Facebook*, *WhatsApp,* and *LinkedIn* empower discussions, exchange resources, and cooperate on ESP courses. Social media promote collaborative learning among peers and the hands-on utilisation of language proficiency (Argyris et al., 2021). They enable Gen-Z ESP teachers to offer immediate feedback and assistance, which promptly and effectively address students' inquiries, offer feedback on their ESP assignments, and offer direction. These platforms are abundant in genuine language utilisation. The ESP teachers may instruct students to actively monitor and interact with social media pages or groups in order to see and engage in authentic professional communication. Designing language for online and offline courses is directly connected to students' specific areas of study (Yüzlü & Dikilitaş, 2022) and encourages learning autonomy (Gavrilenko, 2024).

It is noticed that the linguistic barrier remains uncontrolled in online ESP courses. The rural ESP students with restricted linguistic skills are challenged in understanding the online platform and actively participating with course materials as it includes particular terms or jargon specialised to specific purposes, such as medicine, commerce, tourism, law or engineering. Lack of sufficient English language skills reduces rural students' capacity to engage in online discussions, inquire, and cooperate with their peers (Mohamed et al., 2023). In order to overcome linguistic barriers, ESP teachers need to offer language support services, such as glossaries, bilingual resources, and supplementary language training (Lopez, 2021; Pérez-García & Sánchez, 2020).

Meanwhile, both psychological and cultural barriers influence the way students learn, and teachers adjust an online course. For example, students from a culture that prioritises teacher-centered learning may be anxious about adapting to the self-directed character of English courses (Alrabai, 2022; Gonzalez-Vidal & Moore, 2024). It is paramount to offer cultural sensitivity training for the teachers and to create courses that cater to a wide range of learning styles. The teachers should provide technical training and support to close the digital literacy gap and

ensure that every rural student can effectively receive the online learning experience (Domínguez Romero & Bobkina, 2021; Wu, 2020). The purpose of this strategy is to enhance students' positive emotions when learning new lessons and transforming comprehension in ESP courses. This is because students' PLEs are interconnected with teachers' constructive approach and interactive strategies using technology. Interestingly, technology is an impactful tool that may occupy all contexts, including rural universities. When rural students are offered technology, it is noted that their PLEs are directly developed, and their academic competence is fully triggered by considerable technological transformation (Cheng et al., 2023; Chevalère et al., 2023; Törmänen et al., 2021).

Conclusion

Rural ESP learning, which adopts technology, has become a paramount fact for Gen-Z university teachers. The use of technology in ESP online or offline courses not only results in procedural quality, but also transformative purpose that leads to PLEs. Online or offline learning modes seem to be modified based on their target, place, and time. The ESP teachers with urban backgrounds struggle to integrate rural students' conventional habits into technology-based education. Although it is optional to apply such technology, both teachers and students should be aware of its prominent values as an advanced development in education. Every particular barrier requires a specific strategy that allows teachers to empower learning emotions in rural ESP classrooms.

Meanwhile, this study has some limitations, leading the researcher to determine suggestions for further studies. First, it employed a group of Gen-Z university teachers whose ages are slightly similar. Future studies should compare how ESP teachers with different age ranges (e.g., novice and senior teachers) manage students' PLEs using technology. This idea may identify whether the age factor has a positive or negative influence on their strategies for utilizing technology. Second, as its setting was focused on rural universities where technology remains unexplored, another future study can extend the study into urban contexts, where ESP students have totally achieved such technological advancement. Third, while it is important to qualitatively explore ESP teachers' technological strategies in developing students' PLEs, it is noted that further study should consider a more quantitative approach, allowing researchers to scrutinise the impact of technology statistically.

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