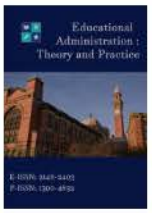
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Blended Learning Strategies for English for Specific Purposes (ESP): A Systematic Review

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Abstract

The COVID-19 pandemic has brought great changes to language teaching models including English for specific purposes (ESP). The "emergency teaching models" came into being replacing traditional face-to-face teaching. Blended learning as one of these models has played an important role during this special period as well as brought some challenges. With the advent of the post-pandemic era, can this blended learning model arise as a new normal in the ESP context? Therefore, this study aims to summarize and analyze the relevant research on blended learning in the ESP context since 2019 in the hope of providing a direction or implication for future ESP research and teaching. This paper uses PRISMA to conduct a systematic review. Four international databases (Web of Science, ScienceDirect, SCOPUS, ProQuest) and Google Scholar were searched until February 2023, and 25 research articles were finally yielded. It is concluded that 2020 saw a dramatic growth in the number of relevant studies, which is believed to be closely linked to the pandemic. Asia contributed the largest number of studies. Furthermore, relatively few studies focused on blended learning in ESP courses in the vocational higher educational context. This study recommends that more research could be conducted on blended ESP education in more varied majors.

Keywords: Blended Learning; English for Specific Purposes (ESP); Systematic Review

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Introduction

Blended Learning

As a new educational trend, the term "blended learning" has gained widespread currency in the recent two to three decades (Albiladi & Alshareef, 2019). This term was first put forward by business training institutions in the late 1990s (Sharma & Barrett, 2008). Later, blended teaching was gradually introduced into higher education and was widely used in English language teaching all over the world (Tomlinson & Whittaker, 2013). Definitions of blended learning vary from researcher to researcher, but each definition has a common element of integrating or configuring technology with a face-to-face learning environment (Gruba & Hinkelman, 2012).

Due to the urgent social demand for less contact communication during the COVID-19 pandemic, the new models were forced to immediately replace the traditional classroom teaching method. Its impact on traditional learning is that teachers and students must instantly adapt to new instructional models (Rusdiana, Sulhan, Arifin & Kamaludin, 2020). Accordingly, the number of students using online and blended teaching has grown dramatically all over the world since the outbreak of the pandemic. The responses to the pandemic varied among different universities and colleges around the world (Viner et al., 2020). Some universities eventually adopted the blended learning mode while some universities preferred the entirely online teaching approach such as Oxford and Cambridge universities (Finlay, Tinnion & Simpson, 2022). There is no exception for Chinese institutions and universities to implement both blended and online teaching modes (Zhang, Zhou, Xuan, Hua & Li, 2020; Zhao, 2021). At the beginning of the pandemic, purely online learning, as an emergency alternative to replacing the conventional educational system (Sirisakpanich, 2022) played a great role in tertiary education. However, various problems are gradually exposed in the global experiment of purely online learning, including technological infrastructure problems, poor teacher-student, and peer interaction, teachers' lack of ICT literacy, lacking learning control from the lecturers, poor self-regulated learning ability, lack of practicing practical skills, and so on.

With the development of the pandemic, the teaching mode also began to change from the emergency teaching mode in the early stage to the teaching mode that pays more attention to teaching quality. Now that the post-pandemic era has arrived, blended learning that integrates online and face-to-face learning can be recommended as a new normal. As the pandemic gradually subsides, numerous researchers have tended to focus on the differences in the actual teaching outcomes of different teaching modes (Lynch, 2020; Podoliak, 2022). Among them, much literature has emerged that offers comparative studies on the effectiveness of online learning and blended learning on teaching results. (Handarini & Wulandari, 2020; Park & Shea, 2020). However, some scholars have been concerned about the challenges brought by the blended learning mode during the emergency pandemic situation and compared its effectiveness with traditional classroom teaching (Ma & Lee, 2021). UNESCO holds some seminars to reevaluate the use and misuse of connected technologies in education following the pandemic and explores the ripple effects of overdependence on distant technology (UNESCO, 2022). Hence, the problems and challenges posed by the transformation of teaching and learning paradigms during the pandemic are particularly noteworthy.

ESP

As the name implies, ESP refers to English associated with a specific occupation or specialty, and it is also a course that may meet the individual needs and goals of the learners. According to Halliday, McIntosh and Strevens (1964), ESP is the English spoken by professionals from all walks of life, including public workers, police officers, and doctors. Developing students' ability to learn ESP is an extremely important element of language teaching in higher education. As a branch of English education, ESP is valued in many countries to cultivate talents with international communication skills in various disciplines (Susanto, 2022). Its main goal is to help students understand professional vocabulary, expand their knowledge of topics by reading English, and be able to use the language in their future careers to prepare for situations like job interviews, international conferences, and professional communication (Halliday et al., 1964).

Blended learning, as one of the ICT-assisted teaching approaches (information and

communications technology), is widely used in language education, such as in the English as a foreign language (EFL) / English as a second language (ESL) context, and its advantages have been repeatedly confirmed in many studies (Akbarov, Gönen & Aydogan, 2018; Albiladi & Alshareef, 2019; Bakeer, 2018; Günes & Alagözlü, 2021; Hamzah, Phong, Sharifudin, Zain & Rahim, 2021; Jerry & Yunus, 2021; Jnr et al., 2020; Liya, 2021; Mohamed, 2022; Peng & Fu, 2021; Podoliak, 2022; Pontoh & Munaiseche, 2021; Scott, Ulmer-Kro & Ribeiro, 2020; Siddiq & Hussain, 2022; Wang, 2021; Wu & Luo, 2022; Zhang & Zhu, 2018). ESP is yet another area of language instruction that has been influenced by the developments of blended learning. Even though there are ESP educators who utilize ICT-assisted teaching strategies, further research is demanded to identify how blended learning is implemented in ESP so that effective instruction is taken to empower lecturers to smoothly integrate technology into teaching practices (Kakoulli-Constantinou & Papadima-Sophocleous, 2020).

Literature Review

Research Questions

The previous review studies in the blended learning domain mostly concentrated on physical education, health or medical education, nursing education, entrepreneur education, and mathematics education focusing on evaluating its effectiveness (Arora et al., 2021; Basori, Sajidan, Akhyar & Wiranto, 2023; Monika, 2022; Vallée, Blacher, Cariou & Sorbets, 2020; Zhou & Zhang, 2022) or teaching design strategies (Boelens, De Wever & Voet, 2017), while less on language learning and teaching. There are several review studies on the implementation of blended learning in native English education (Yajie & Jumaat, 2023), EFL (Qiu et al., 2022), ESL (Ramalingam, Yunus & Hashim, 2022), and so on. In contrast, researchers have shown little interest in blended learning in the ESP field and there is a lack of relevant review studies. Aleb and Labed (2021) pointed out that although there are numerous studies on the benefits, strategies, and resources of blended learning courses, relatively little research has focused on the blended learning strategy that integrates online learning into ESP courses in tertiary education.

Given the existing published studies fail to systematically review the application of blended learning to ESP courses, more relevant studies are called for to fill this gap (Aleb & Labed, 2021). Therefore, the general goal of this study is to evaluate and analyze the potential effect of blended learning in an ESP setting. We tried to answer three research questions, taking into account the aforementioned limitations:

RQ1: What are the trends in blended learning research in ESP?

RQ2: What are the focus conclusions drawn from the analysis of existing literature?

RQ3: What are the research gaps based on the existing literature review?

Methodology

To ensure the quality of this review article, this research applied the well-established model for systematic review PRISMA proposed by Moher, Liberati, Tetzlaff, Altman and Group (2010). Figure 1 illustrates the process of conducting the review. A review protocol was developed before conducting the review. The process of this review research consists of four steps (Xiao & Watson, 2019), searching the articles, screening for inclusion, data collection, and data analysis.

Search the Articles

Databases used for literature search. Four international databases (Web of Science, ScienceDirect, SCOPUS, ProQuest) and Google Scholar were searched for literature as these are internationally recognized high-level databases widely adopted for systematic reviews. To obtain a complete literature list, a forward and backward search (Webster & Watson, 2002) was also carried out to find more literature. The search was carried out on 28 February 2023.

Search Strategies. According to the research questions, the keywords for the article search were finally determined - "blended learning" and "English for specific purposes". A trial search

yielded very few results with the two keywords. Then, the keywords were further modified considering the synonyms and abbreviations. Blended learning has some variations such as "blended teaching", "blended instruction", "blended approach", et al. Hence, the Boolean operators were adopted for the advanced search. Eventually, the search string was constructed with three sections - TITLE-ABS-KEY((blended*) AND ("English for specific purposes" OR "ESP")). Besides the search string, some quick filters were also selected in the four databases: document type (journal articles), open access, language (English), final publication stage, and year (2019, 2020, 2021, 2022, 2023).

Screen for Inclusion

Inclusion and exclusion criteria. The inclusion and exclusion criteria for the document search were also developed, as shown in Table 1.

Table 1. Inclusion and exclusion criteria

Criteria	Inclusion	Exclusion
Language	English	Studies other than English
Time frame	2019- February 2023	Documents before 2019
Educational Context	Tertiary education includes higher vocational education, undergraduate education (bachelor's degree), postgraduate education, and doctoral education	Those that are not listed
Type of Publication	Peer-reviewed and open-access documents (journal articles or theses)	Research articles without peer review such as books, book chapters, editorials, proceedings, and short papers. No open access
Database	Web of Science, ScienceDirect, SCOPUS, ProQuest, and Google Scholar	Other databases
Discipline	ESP	Studies other than ESP
Participants	Students or Lecturers	Non-students or Non-Lecturers

Screening procedures. To ensure the quality of screening, two reviewers participated in the screening process. The two reviewers screened the abstracts of the studies independently strictly based on the inclusion and exclusion criteria. Wanden-Berghe and Sanz-Valero (2012) proposed that nonexpert reviewers can be more objective and may provide different and helpful views. If there is a disagreement between two reviewers, they must discuss and re-determine whether to include the article in the final list.

Data Collection Process

The data extraction process was implemented by two reviewers independently. If a salami or duplicate publication is suspected, two reviewers need to discuss and determine. A salami publication is known as the publication of two or more articles from one study. Although there are no reliable tools for identifying salami publications, they often include the same authors, nearly the same sample size, research questions, research methodology, and results. Through screening and quality evaluation of the searched documents, 25 documents were finally obtained. Table 2 lists the authors and titles of the obtained documents. To test the internal reliability of the two researchers in the screening process, the two researchers were asked to screen and code 10 randomly selected articles. Then SPSS software was utilized to calculate the Cohen's Kappa coefficient values of the two researchers' two sets of codes. The value was 0.8, which suggested optimum consensus (Viera & Garrett, 2005).

Table 2. Lists the authors and titles of the obtained documents

Authors	Titles
Susanto	Blended learning instruction in english for specific purposes: An ethnographic investigation of project-based learning
Gerasimova, I. G., Pushmina, S. A., & Carter, E. V.	A fresh look at blended learning: boosting motivation and language acquisition in an ESP course for engineering students

Authors	Titles
Zhang, R.	Blended course evaluation in the context of English for specific purposes: Accountability and development
Almansour, M. I., & Al-Ahdal, A. A. M. H.	Enhancing the speaking proficiency of undergraduate ESP students through the use of a blended learning approach
Holiver, N., Kurbatova, T., & Bondar, I.	Blended learning for sustainable education: Moodle-based English for specific purposes teaching at Kryvyi Rih National University
Shykhnenko, K., & Nozhovnik, O.	ESP course delivered to personnel working in shifts for the state emergency service of Ukraine through a student-tailored model
Zhang, R.	Exploring blended learning experiences through the community of inquiry framework
Dževerdanović Pejović, M.	Learning technical genres–a blended learning approach
Mulyadi, D., Arifani, Y., Wijayantingsih, T. D., & Budiastuti, R. E.	Blended learning in English for specific purposes (ESP) instruction: Lecturers' perspectives
Shalatska, H., Zotova-Sadylo, O., & Muzyka, I.	Moodle course in teaching the English language for specific purposes for masters in mechanical engineering
Mulyadi, D., Wijayatingsih, T., Budiastuti, R., Ifadah, M., & Aimah, S.	Technological pedagogical and content knowledge of ESP teachers in a blended learning format
Le Dinh Tung	The enhancement of cultural awareness in ESP context: Blended learning might be a key factor
Grabar, I.	The role of blended learning in vocabulary acquisition and student autonomy development in an ESP context
Aleb, S., & Labed, Z.	The effect of implementing the blended teaching approach in ESP courses on students' achievement and attitudes
Mafruudloh, N., Sholikhah, N. M., & Fitriati, R.	Blended learning effectiveness: A quasi-experimental study on students' ESP achievement
Boutahar, Y.	Towards incorporating Schoology blended learning model into ESP and EFL classes: A focus on Moroccan schools of engineering and humanities
Agustiani, M., Ningsih, S., & Muris, A. A.	Students learning motivation through EDMODO: blended learning in ESP classroom
Hosseini, S. A., & Shokrpour, N.	The perception of English for specific purposes (ESP) language learners about blended learning in higher education
Bojovic, M.	ESP for biotechnology purposes in Serbian higher education: The skills required and blended learning environment
Du, W., & Wang, Y.	Developing an outcome-based ESP course with the blended-learning method for Chinese undergraduates
Gaffas, Z. M.	Students' perceptions of e-learning ESP course in virtual and blended learning modes
Haryanto, H., Puwanto, P., & Giyoto, G.	Learning English for specific purposes through blended learning at Public Islamic University (A Case Study at Private University Indonesia)
Kristianingrum, N. P., & Widyantoro, A.	The implementation of blended learning in English for arts education program: A case study
Rahman, F.	Developing blended learning-based syllabus of English for pharmacy; Students' needs analysis
Malinee, V. V., & Senthamarai, T.	The use of Web 2.0 tools in English for specific purposes: a blended learning approach in English language teaching

Data Analysis

The present study adopts the content analysis method to analyze data. This method is particularly useful in studying meaningful data by quantifying and examining the occurrence of

certain words, themes, or concepts within sets of texts. To ensure reliability in the content analysis process, the data were recorded in MS Word and Excel. The data analysis was performed by descriptive statistics using the SPSS program.

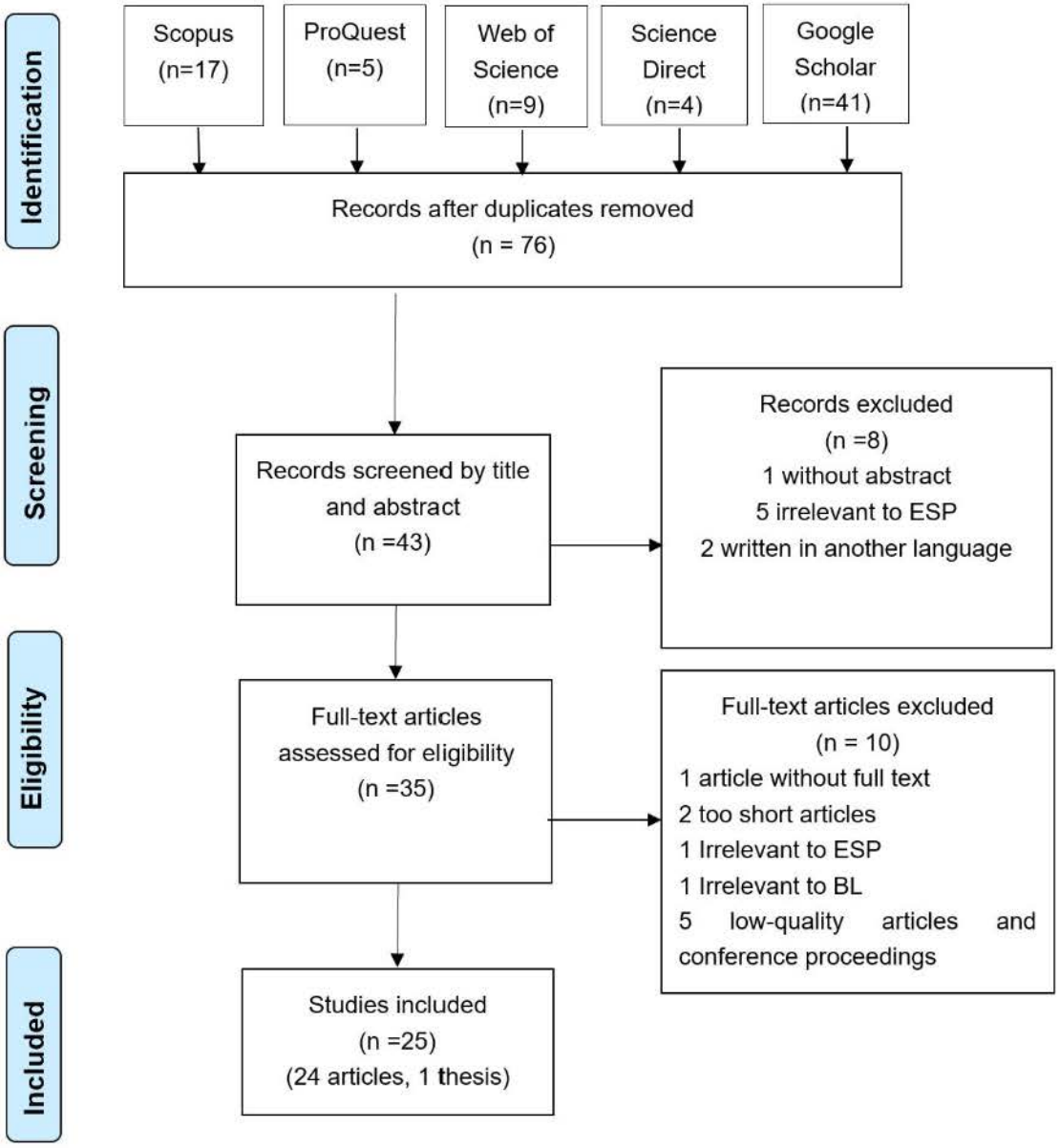


Figure 1. Flowchart of the article screening process (Moher et al., 2010)

Results

RQ1: What are the trends in blended learning research in ESP?

Figure 2 indicated that the number of publications per year has increased steadily since 2019 and rose sharply in 2020 with 44% (Almansour & Al-Ahdal, 2020; Boutahar, 2020; Dževerdanović Pejović, 2020; Holiver et al., 2020; Kristianingrum & Widyantoro, 2020; Malinee & Senthamarai, 2020; Mulyadi et al., 2020a; Mulyadi et al., 2020b; Shalatska et al., 2020; Shykhnenko & Nozhovnik, 2020; Zhang, 2020). This dramatic rise was considered to be closely related to COVID-19, which was also confirmed in the content analysis of the full text of the literature. What is striking in this chart is the steep decline in the number of publications in 2021. Moreover, since the search results were obtained in February 2023 in this review, few records in 2023 were consequently obtained (n=1) (Gaffas, 2023). Thus, according to the trend of

publications in the past four years, it is predictable that there will be relatively rapid growth in the published articles on blended learning in ESP education after February 2023.

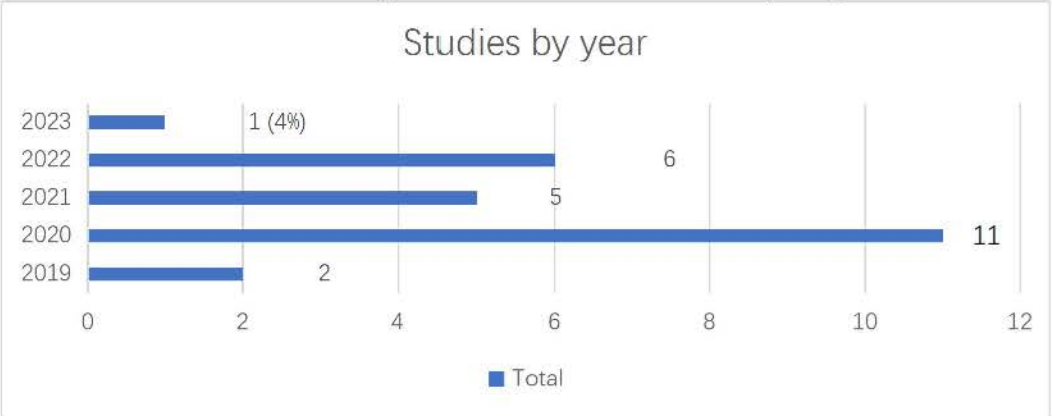


Figure 2. Studies by year

Concerning the country distribution (Figure 3) of the selected articles, the highest concentration was in Indonesia (n=9), Ukraine (n=3), and China (n=3), followed by Saudi Arabia. Russia, Saudi Arabia, Montenegro, Vietnam, Algeria, Morocco, Iran, Serbia, India, and Croatia respectively contributed one article since 2019. This distribution map (Figure 4) further illustrated that the largest number of published articles were in Asia (n=16), followed by Europe (n=7) and Africa (n=2). A closer examination of the distribution by country found that nearly all the obtained studies have been published in countries with EFL. In other words, the content analysis showed that the research on blended learning in ESP in the EFL context accounted for the vast majority.

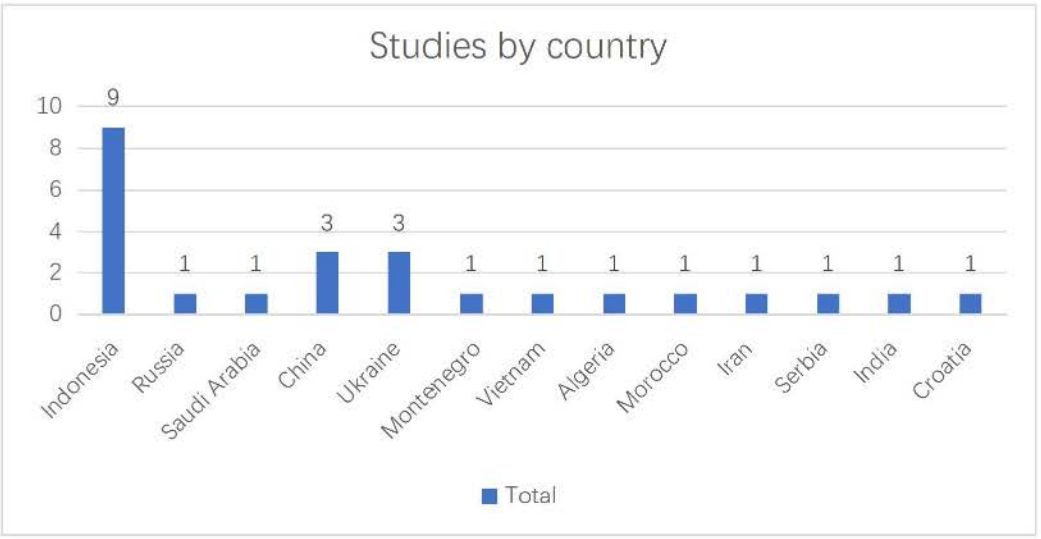


Figure 3. Studies by country

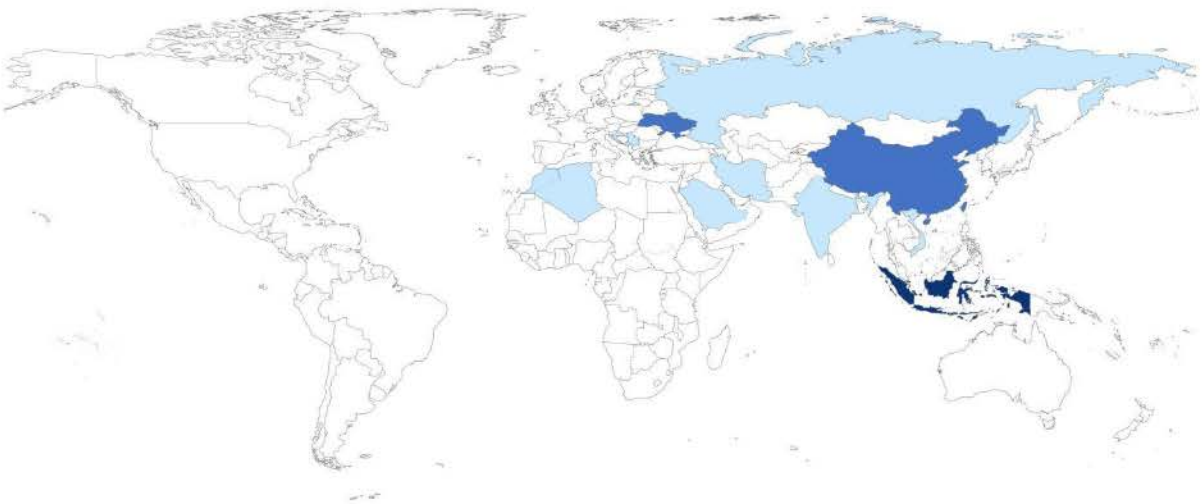


Figure 4. Distribution map by country

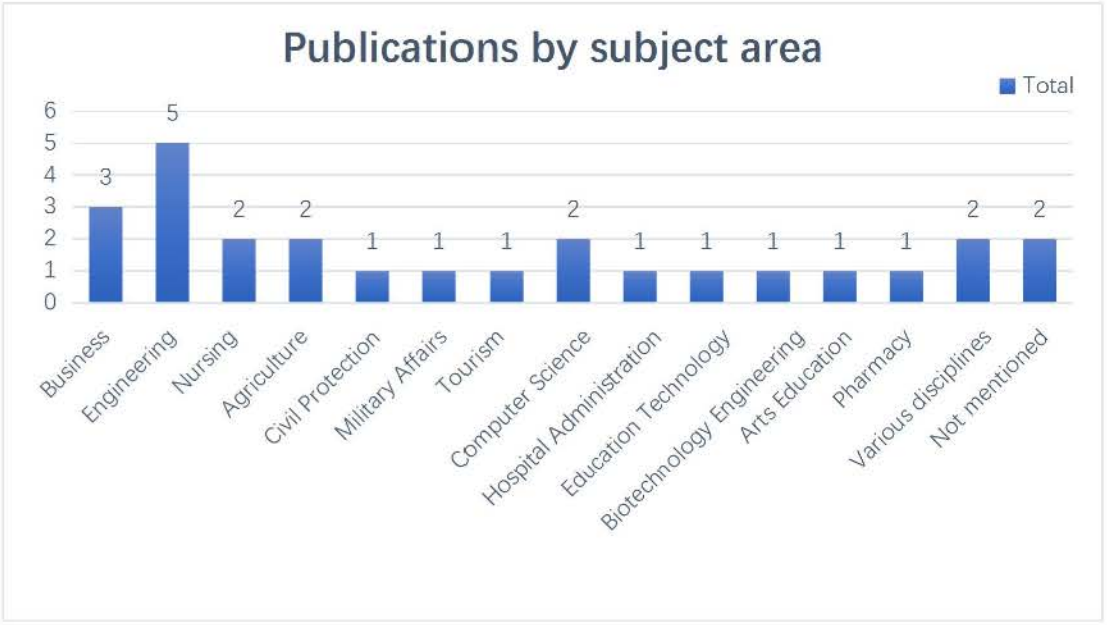


Figure 5. Studies by subject area

The subject areas in which these studies are performed were shown in Figure 5. As can be seen from the chart, the research field of ESP involves various subjects or professions. Most studies focused on ESP in a certain specialty, while some touched on ESP courses in many different specialties simultaneously. For example, Grabar (2021)assessed the effect of blended learning on ESP learners ' vocabulary acquisition, independent study, and self-assessed competence compared with face-to-face instruction. Participants chosen for this research were undergraduates from 5 different programs including Multimedia, Design, and Application; Technical and Economic Logistics; Mechanical Engineering; Electrical Engineering; Civil Engineering. Hosseini and Shokrpour (2022) also studied the effectiveness of blended learning in tertiary ESP instruction and investigated the perception of ESP students majoring in management, chemistry, physics, Persian literature, and civil engineering courses. However, it was a pity to find that some disciplines have not been explored and investigated in these studies, such as clinical medicine, fishing and animal husbandry, and law. It means, further research could be carried out to study blended ESP learning and teaching in more varied majors, which is consistent with the conclusions and implications yielded by Mafruudloh et al. (2022).

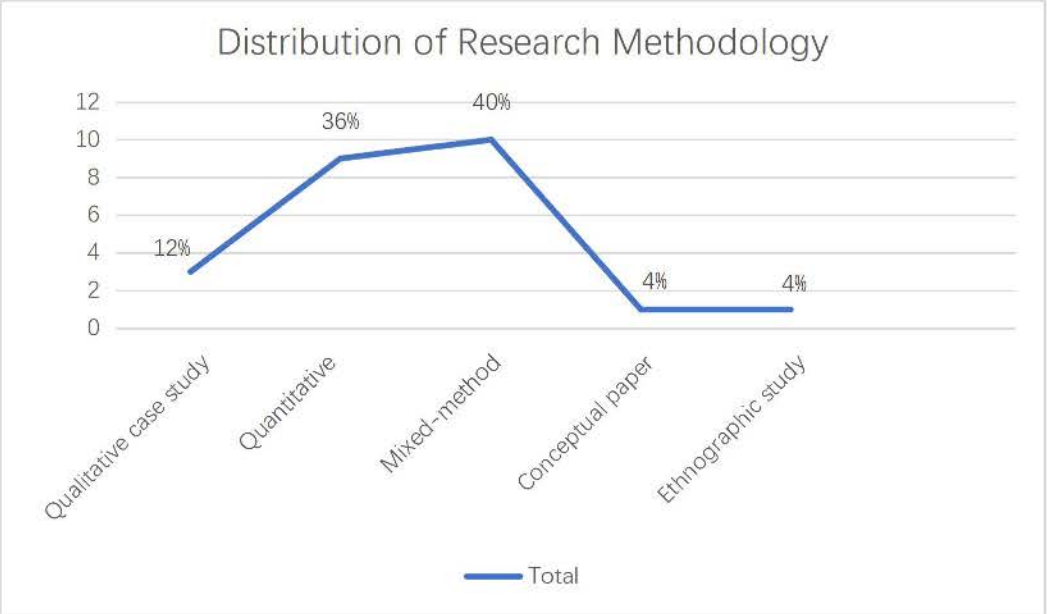


Figure 6. Studies by the research methodology

Figure 6 revealed that the mixed method was the most popular research method, accounting for 40% (n=10), followed by the quantitative method with 36% (n=9). The qualitative case study only contributed 3 publication articles. It's surprising to find that ethnography was utilized in their study as this research method has rarely been chosen in studying blended learning, even in ESP education. Additionally, one conceptual paper was also found.

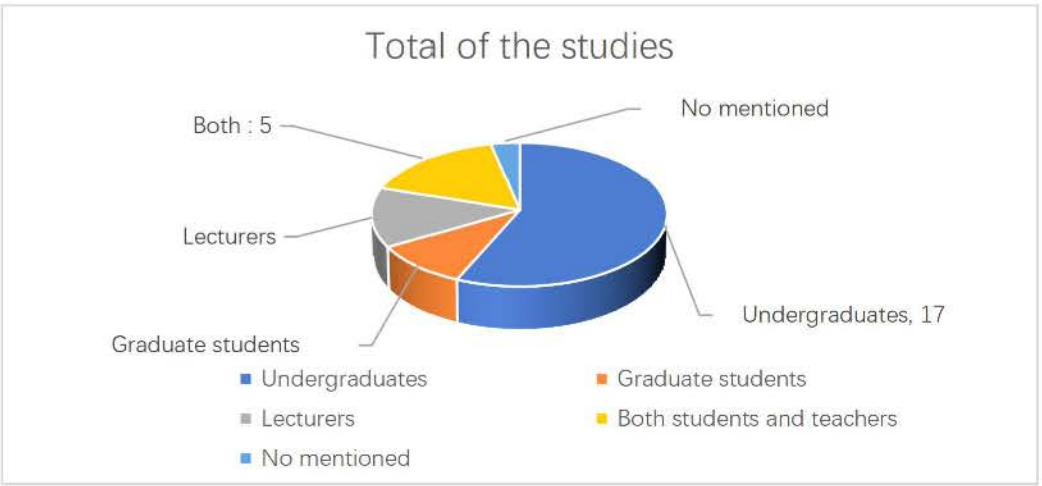


Figure 7. Types of samples in the studies

Concerning the research context, the selected studies focused on tertiary education as the pie chart in Figure 7 showed that the participants were undergraduate or graduate students or lecturers in university. The essence and characteristics of ESP determine that relevant research can only be conducted in tertiary education. ESP is a combination of English and professional knowledge in a specific field. ESP, which involves a wide range and diverse field of English teaching, is an English course related to designed to address the specific English learning needs of learners from a certain specialty for their future career (Dudley-Evans, St John & Saint John, 1998; Mackay & Mountford, 1978; Robinson, 1991). Therefore, mastering basic professional knowledge is a necessary prerequisite to learning ESP for higher-education students.

According to statistical results, among all the 25 studies, no ESP student or ESP course in higher vocational colleges was obtained. However, it ' s significant to offer ESP courses in

vocational education. Economic globalization has led to an increasing demand for compound talents with "general English + professional knowledge". As an important base for professional talent cultivation, higher vocational colleges are shouldered with the responsibility of cultivating professional talents in all walks of life in society. Hence, it is concluded that future study on the current topic urgently needs to be undertaken in the higher vocational education context.

RQ2: What are the focus conclusions drawn from the analysis of existing literature?

Table 3. List of the findings concerning the impact of blended learning

Research dimension	Focus of the conclusions
Facilitate learning process	Enhancement of language skills: speaking skills or communicative language skills (Almansour & Al-Ahdal, 2020; Bojovic, 2022; Shalatska et al., 2020; Shykhnenko & Nozhovnik, 2020)
	Improvement of motivations (Agustiani et al., 2021; Aleb & Labed, 2021; Gerasimova et al., 2022; Shykhnenko & Nozhovnik, 2020; Zhang, 2021)
	Enhancement of cognitive ability (Shykhnenko & Nozhovnik, 2020)
	Enhancement of cultural communicative competence (Tung, 2019)
	Improvement of independent learning or autonomous learning (Aleb & Labed, 2021; Boutahar, 2020; Grabar, 2021)
	Enhancement of collaborative learning (Aleb & Labed, 2021; Boutahar, 2020; Susanto, 2022)
	Enhancement of achievement or academic performance (Aleb & Labed, 2021; Gaffas, 2023; Gerasimova et al., 2022; Hosseini & Shokrpour, 2022; Mafruudloh et al., 2022)
	Enhancement of critical thinking (Susanto, 2022)
	Enhancement of disciplinary knowledge (Susanto, 2022)
	Enhancement of perception or attitude (Aleb & Labed, 2021; Hosseini & Shokrpour, 2022)
	Improvement of engagement (Aleb & Labed, 2021; Boutahar, 2020)

Table 4. List of the findings concerning the challenges of blended learning

Research dimension	Focus of the conclusions
Challenges	Lecturers' insufficient disciplinary knowledge or collaboration with disciplinary teachers (Mulyadi et al., 2020a; Susanto, 2022; Zhang, 2021)
	Lecturers' lack of technological support (unreliable internet connection, reluctance to use technology) (Kristianingrum & Widyantoro, 2020; Mafruudloh et al., 2022; Mulyadi et al., 2020a)
	Lecturers' inefficient class management (Mulyadi et al., 2020a)
	Students' difficulty with time allocation (Mafruudloh et al., 2022)

Discussion

Effectiveness of Blended Learning on ESP Instruction

Blended learning empowers worldwide English speakers to explore potential research prospects (Smidt, Chau, Rinehimer & Leever, 2021). ESP, an important branch of foreign language teaching, has been consequently integrated with blended learning by educators in the hope of improving the current status of ESP education. In the last five years, the research on blended learning in the ESP context mainly focused on evaluating its effectiveness in facilitating the learning process, motivation, and academic performance as a teaching approach (Gumartifa, Larasati & Aurelia, 2020). According to the results of these empirical studies, the impact of blended learning in the ESP setting could be mainly classified into three categories (Table 3).

One category is the improvement of basic English skills (Almansour & Al-Ahdal, 2020; Bojovic, 2022; Shalatska et al., 2020). Almansour and Al-Ahdal (2020) employed a quasi-

experimental method to compare the impact of the blended learning approach with the traditional classroom model on enhancing ESP students' speaking skills and academic achievement (Aleb & Labed, 2021; Gaffas, 2023; Gerasimova et al., 2022; Hosseini & Shokrpour, 2022; Mafruudloh et al., 2022). The results demonstrated that blended learning could effectively enhance the participants' speaking skills and communicative competency (Shalatska et al., 2020; Shykhnenko & Nozhovnik, 2020), which was also reported by Bojovic (2022).

Another category is the important role of boosting the students' abilities and disciplinary knowledge such as cognitive ability (Shykhnenko & Nozhovnik, 2020), critical thinking (Susanto, 2022), cultural communicative competence (Tung, 2019), disciplinary knowledge (Susanto, 2022) and so on. Shykhnenko and Nozhovnik (2020) proved that there was an enhancement in students' cognitive ability as well as responsibility through quasi-experimental research of blended learning in an ESP course. Susanto (2022) investigated the integration, fulfillment, and practice of applying project-based learning (PBL) in blended ESP learning and the results revealed the enhancement of students' critical thinking and disciplinary knowledge. Moreover, the cultural communicative competence of students majoring in tourism could be improved through blended learning instruction (Tung, 2019).

The third category is the enhancement of the learning environment with more engagement (Aleb & Labed, 2021; Boutahar, 2020), interaction and collaboration (Aleb & Labed, 2021; Boutahar, 2020; Susanto, 2022), more motivation (Agustiani et al., 2021; Aleb & Labed, 2021; Gerasimova et al., 2022; Shykhnenko & Nozhovnik, 2020; Zhang, 2021) and autonomous learning (Aleb & Labed, 2021; Boutahar, 2020; Grabar, 2021). These findings broadly supported the work of those studies on blended learning in EFL/ESL settings (Akbarov et al., 2018; Albiladi & Alshareef, 2019; Bakeer, 2018; Günes & Alagözlü, 2021; Jerry & Yunus, 2021; Mohamed, 2022; Peng & Fu, 2021; Pontoh & Munaiseche, 2021; Siddiq & Hussain, 2022; Wu & Luo, 2022; Zhang & Zhu, 2018).

Consistent with the literature, this research found that blended learning in the ESP context was more effective than fully online and face-to-face learning owing to more interaction, higher engagement, and collaboration, and more learning autonomy (Arifan, Khaja, Suryanti & Wardhono, 2019; Kurucova, Medová & Tirpakova, 2018). This is exemplified in the work undertaken by Mulyadi et al. (2020a), who investigated 70 ESP educators from 35 universities in Indonesia for their perceptions of blended learning. The findings corroborated that the most beneficial components of blended learning were seen to be the flexibility in accessing the learning resources, which enables learners to utilize the content and materials at their speed as well as learn ESP creatively from a variety of resources (Mulyadi et al., 2020a).

These findings were in agreement with the work conducted by Gerasimova et al. (2022) who developed a blended learning model in ESP for engineering students. This experiment reflected its advantages of offering more learning flexibility as it facilitated students to develop their learning strategies and improve time management tactics. Besides, it's also confirmed that it was an effective tool for improving the students' motivation and learning efficiency. Gerasimova et al. (2022) also stressed that blended learning was of great potential and significance in strengthening the interdisciplinary connection between ESP and professional disciplines and therefore for further enhancement of academic outcomes. In addition, blended learning also could accelerate the process of mastering basic language skills by providing various online resources and enhancing ESP learners' English mastery (Meydanlioglu & Arikan, 2014; Mulyadi et al., 2020a).

Challenges

Blended learning is receiving increased attention, although it is not a new pedagogy (Tan, Zakuan & Abd Aziz, 2022). As discussed above, blended teaching has brought many benefits to English language teaching through the global experiment in the special period. However, various problems of blended learning in English education are also gradually exposed and noticed by more researchers (Kumarasamy, Kalimuthu & Narayanansamy, 2020) (See Table 4). Ramalingam et al. (2022) noted that few studies have focused on the issue instructors face when implementing the blended learning model in ESL classrooms. This viewpoint was corroborated by Albiladi and Alshareef (2019) and Tan et al. (2022). Similarly, the research on blended learning in the ESP setting also faces the same dilemmas. A deeper analysis of the findings of each selected article

found that almost all of these studies were focused on higher education, primarily from the perspective of students but neglecting other stakeholders' viewpoints including policymakers. It is clearly illustrated in Figure 7 that only 4 articles specifically targeted lecturers, focusing on their attitudes, experiences, and dilemmas in implementing the blended learning process (Grabar, 2021; Haryanto et al., 2021; Holiver et al., 2020; Mulyadi et al., 2020a; Mulyadi et al., 2020b).



Figure 8. Word cloud based on the objectives of the selected articles

The results reflected in the word cloud diagram accorded with the content discussed above. Figure 8 shows the focus of the research lay on the impact of the blended learning approach on students' learning process, particularly during the pandemic including the improvement of students' motivation, language skills, communicative ability, etc. Besides, the effectiveness of teaching platforms such as Moodle as well as the course design of the ESP curriculum was also the hot topic of these studies.

RQ3: What are the research gaps based on the existing literature review?

Conclusion

In short, during the special pandemic period, blended teaching made up for the defects of online learning in many ways. Accordingly, it is considered by most researchers as the best teaching mode during the pandemic period. A large number of comparative studies have confirmed many important advantages of blended teaching. Even though there are plenty of studies on the benefits, strategies, and course design of blended learning, relatively few of them concentrate on blended learning in ESP courses in higher education.

However, some difficulties and challenges could not be ignored, such as poor technical infrastructure, low ICT literacy of teachers, and their heavy workload. In the ESP context, communication particularly requires more language instructor-student interaction and peer interaction. Many studies have highlighted ESP teachers had obstacles in effectively integrating language and subject knowledge. ESP lecturers must master multidisciplinary knowledge (Mulyadi et al., 2020a; Susanto, 2022; Zhang, 2021), as evidenced by the necessity to link linguistics to content (Luo & Garner, 2017). Only by effectively integrating language education with ESP materials and content can they provide students with real-world communicative skills, which is essential for their future careers. Briefly, ESP instructors have to grasp both linguistics knowledge and professional knowledge relevant to the course.

Another finding that stands out from the results reported earlier is that there is a lack of relevant studies in the higher vocational education context. More studies on the current topic are therefore recommended. Furthermore, existing case studies on blended learning frequently focus

on a particular context or course, which may not be transferable to other curricula. In future investigations, it might be possible to apply blended ESP instruction in more varied majors in higher education such as medicine, law, etc.

Additionally, few studies focus on blended learning from the perspective of lecturers, which calls for more relevant empirical research. Although the three selected articles suggest strengthening cooperation between language lecturers and professional lecturers, further empirical research is needed on how to take effective measures to promote more collaboration between the two sides. Regarding the research design and method, most of the research employs questionnaire survey, interview, case study, or experimental research methods, but one of the ethnographic research methods is eye-catching. Thus, this has implications for more researchers to apply innovative research methods to research blended learning in ESP settings. Eventually, future studies are expected to be conducted on some aspects, such as the evaluation of students' achievement of higher levels of educational objectives according to Bloom's Taxonomy, including self-regulated learning ability, team spirit, creativity, and critical thinking.

There are some limitations to this work. First, the selected publications were only limited to 2019-2023 focusing on the years during the pandemic. Selection bias is another potential concern because some databases were excluded although we have searched several internationally renowned databases closely related to linguistics. These aspects are expected to be reconsidered for future studies, such as extending the period and searching more databases.

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