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Shifting Paradigms in English Language Teaching: Mapping English for Specific Purposes through a Hybrid Systematic Review and Bibliometric Analysis

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Abstract. This study explored the development and shift of English for specific purposes (ESP) as part of English language teaching (ELT) in the post-2000 digital era. Using a hybrid methodology combining a systematic literature review (SLR) with bibliometric analysis, this study sought to map methodological trends, conceptual orientations, and epistemic shifts occurring within ESP research. The dataset was obtained through a search of the Scopus database, which yielded 9176 initial documents filtered through the PRISMA 2020 framework. The search resulted in a final corpus of 269 articles and 36 studies selected based on their relatedness to the topic for in-depth review. Bibliometric analysis was conducted using VOSviewer to visualize keyword co-occurrence patterns and international co-authorship networks, while CiteSpace was employed to identify citation bursts and thematic evolution over time. The findings reveal a clear shift in ESP from a linguistic-structural focus to a multimodal, technology-integrated, and human-centered paradigm. Recent studies increasingly emphasize AI-assisted feedback systems, data-driven learning, and digital mediation that indicate methodological complexity and ethical awareness in ESP pedagogy. However, research gaps remain in teacher professionalization, cross-regional collaboration, and contextualized hybrid learning practices. This study revealed that post-digital ESP has matured into a techno-humanistic discipline that stressed the importance of understanding digital pedagogy and promoting teacher professionalism across the nations. The study also advances ESP research by providing a comprehensive empirical mapping of ESP-ELT research, integrating digital and ethical dimensions, and

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proposing a techno-humanistic framework to guide future research, teacher professional development, and educational policy in global ESP contexts.

Keywords: English for specific purposes (ESP); English language teaching (ELT); hybrid systematic review; bibliometric analysis; digital pedagogy

1. Introduction

The importance of understanding the concept of English for specific purposes (ESP) within the broader context of English language teaching (ELT) has been crucial in today's global transformation that demands a shift from mere linguistic competence to active participation in understanding technology in teaching (Amin, 2025; Soler & Kaufhold, 2025). English today serves not only as a means of communication but also as a tool for building academic (Kholturaeva, 2025), professional (Harun et al., 2025), and digital (Si et al., 2023) competitiveness.

In this context, ESP ideally exists as an adaptive approach that builds language skills tailored to the specific needs of the workplace and academic world (Dou, 2024; Leva et al., 2025). However, there is a gap between ideal and actual conditions. Some ESP curricula remain tied to traditional teaching methods with limited technology integration (Keshtiarast et al., 2022; Sakti et al., 2024), teachers' limited digital literacy (Bouguebs, 2022), and a mismatch between curricula and the demands of a dynamic professional world (Dou, 2024; Kehal, 2024), particularly in ELT.

Despite the growth of research on ESP in the past two decades, research from Supunya (2023) and Tan et al. (2023) has shown considerable thematic and methodological fragmentation. Recent studies only focused on specific fields without addressing a comprehensive picture of the directed evolution of ESP in the global ELT context (Supunya, 2023; Tan et al., 2023). Thus, a knowledge gap has appeared between the diversity of research findings and a comprehensive understanding of how pedagogical innovation, digitalization, and sociopolitical dynamics influence ESP practice in various parts of the world (Karasaliu et al., 2025). Only a small number of studies systematically mapped these paradigm shifts, making the need for a comprehensive, data-driven scientific synthesis even more urgent (Karasaliu et al., 2025; Qamar et al., 2025; Supunya, 2023; Tan et al., 2023).

To address these needs, this study adopted a hybrid approach that integrates the systematic literature review (SLR) and bibliometric analysis. This approach not only brings together the two methods but also expands the epistemological boundaries of language research by combining the depth of thematic analysis with the precision of scholarly mapping (Marzi et al., 2025). The SLR allowed for an in-depth exploration of patterns of findings, methodological innovations, and the pedagogical relevance of ESP, while bibliometric analysis provided a quantitative map of collaborative networks, publication trends, and the most influential researchers and themes (Marzi et al., 2025). Through this combination,

this study not only illustrates the existing research landscape but also uncovers new directions and research gaps that can serve as a springboard for the next generation of research.

This study aimed to develop a more innovative, comprehensive, and objective picture of the function of ESP in contemporary ELT and provide a systematic and data-driven understanding of how ESP has evolved within the ELT framework in response to digital transformation and shifting educational demands (Liu et al., 2025; Tan et al., 2023) by utilizing VOSviewer and CiteSpace. Bibliometric analysis was conducted using VOSviewer to visualize keyword co-occurrence patterns and international co-authorship networks, while CiteSpace was employed to identify citation bursts and thematic evolution over time. This approach not only connected the methodological fragmentation that has limited the development of ESP but also made a visionary contribution to curriculum design, language policy, and teacher professional development in the remote area.

In short, this study not only identified dominant research trends but also revealed underexplored pedagogical and epistemic gaps. Furthermore, it reaffirmed the position of ESP as a key foundation for 21st century English language learning by integrating bibliometric mapping with qualitative synthesis. The investigation was guided by three research questions, addressing conceptual evolution, persistent challenges, and future research directions in ESP, to ensure analytical focus within this broad scope. The following research questions were raised:

1. How has ESP evolved within the framework of ELT over time, especially in the post-2000 digital era?
2. What are the epistemic and pedagogical gaps in the global ESP context?
3. What is the suggested future theme for further exploration in the area of ESP in academic settings?

2. Literature Review

This section begins by listing the most cited articles on ESP in ELT as related to English for academic purposes (Table 1) using Publish or Perish to ensure alignment of the study with the selected topic.

Table 1: Top eight most cited articles on English for specific purposes in English language teaching (2000–2025) as a primary reference in the academic field

No.	Author(s)	Title	Year	Citations
1	K. Hyland	English for academic purposes	2014	2894
2	L. Hamp-Lyons	English for academic purposes	2011	502
3	M. Charles	English for academic purposes	2025	159
4	J. Flowerdew	English for specific academic purposes	2016	154
5	S. Carkin	English for academic purposes	2005	144
6	B. Paltridge and S. Starfield	English for specific purposes	2016	39
7	H. Basturkmen and R. Wette	English for academic purposes	2016	37
8	L. Flowerdew	English for academic purposes	2012	30

2.1 English for Specific Purposes in English Language Teaching

English for specific purposes is an approach in language teaching that comprises more specific courses designed in alignment with students' academic studies and the professional world (Kholturaeva, 2025). English for specific purposes places value on language-relevant use, curricular content-based goals, and teaching methods suitable for particular communicative situations (Hyland, 2014). It developed in the 1960s as a result of trends toward global trade and English as an international lingua franca, forcing language teachers to deal with specialized forms of English related to technical and professional fields (Hutchinson & Waters, 1987).

In the early years of ESP research, there was an emphasis on grammatical analyses of technical texts for registers. However, this orientation later evolved into discourse- and genre-based approaches that linked lexico-grammatical choices with rhetorical purposes and communicative practices (Hyland, 2014). Central to this shift was the concept of learner needs, which continues to guide its expansion into diverse genres and professional fields (Flowerdew, 2012).

Building on this perspective, ESP in the context of ELT was understood as a language teaching approach oriented toward the specific academic and professional needs of learners. The most influential literature indicates that ESP has developed strongly within the realm of English for academic purposes (EAP), with a focus on academic genres, discursive practices, and disciplinary communication demands (Flowerdew, 2016; Hamp-Lyons, 2011; Hyland, 2014). The majority of EAP studies emphasize that ESP does not simply teach language forms but emphasizes language functions in real academic and professional contexts, thus broadening the scope of ELT from general competencies to contextual and goal-based competencies.

In short, ESP is now understood as a literacy practice that requires learners to master language in specific social situations, rather than simply memorizing grammatical structures. Nugroho (2020) pointed out that ESP is no longer merely a linguistic instrument but rather a cross-disciplinary communication strategy that brings together language and professional fields. Theoretically, ESP and ELT have a functional correlation, where ELT provides the linguistic and pedagogical foundation, while ESP broadens its scope through contextual and specific applications. The implication of this relationship is the emergence of demands for teaching models that are more targeted, flexible, and adaptive to the socio-economic context of learners.

2.2 Previous Relevant Studies

Table 2 presents a summary of the articles included in the SLR. In relation to ELT, ESP serves as a pedagogical extension that operationalizes ELT principles, such as learner-centeredness and relevance, in more specific and targeted contexts. However, recent studies also indicate conceptual tensions between ESP and ELT, particularly related to teachers' limited understanding of the differences and interrelationships between the two (Alharbi, 2022; Hyland, 2022). Furthermore, the implementation of ESP in ELT has faced structural challenges in the form of limited ESP teachers, weak institutional support, and unclear ESP curricula within

the context of English-medium instruction (EMI), hindering the effective integration of ESP into formal ELT systems (Galloway et al., 2024; Mao & Zhou, 2024).

Table 2: Analysis of articles included in the systematic review of literature: Limitations in the field of ESP-ELT

No	Key points	Author(s) and year
1	Limited multimodal teaching and weak cross-disciplinary collaboration	Dong and Kou (2025)
2	Lack of longitudinal studies and limited AR access	Amin (2025)
3	Competency disparities by gender and academic level	Jiang and Qu (2024)
4	Few authentic materials and medically trained teachers	Ng and Cheung (2024)
5	Insufficient ESP teachers and institutional support	Mao and Zhou (2024)
6	Absence of motivation-focused teaching models	Guosheng et al. (2024)
7	Unclear ESP curriculum in EMI adoption	Galloway et al. (2024)
8	Heavy academic load and poor methodological guidance	Nasiri and Khojasteh (2024)
9	Low language proficiency and non-contextual curriculum	Williams et al. (2024)
10	Limited exploration of motivational strategies	Mauludin et al. (2023)
11	Inadequate ESP lecturer training in case study design	Lyu (2023)
12	Weak policy and infrastructure for ESP programs	Giang et al. (2023)
13	Lack of technology training and suitable media	Cheraghi and Motaharnejad (2023)
14	Overemphasis on linguistic over pragmatic competence	Huang et al. (2022)
15	Low ESP awareness and untrained lecturers	Alharbi (2022)
16	Poor conceptual understanding of ESP vs ELT	Hyland (2022)
17	Technically oriented ESP without creative expression	Alkhalidi et al. (2022)
18	Limited system personalization and teacher digital skills	Andrejević and Nejković (2022)
19	Low collaboration and loss of workplace context online	Mihai et al. (2022)
20	Weak infrastructure and low data literacy	Yan (2022)
21	Lack of differentiated instruction based on social roles	Nikolaeva and Synekop (2020)
22	Poor coordination between language and medical teachers	Zhang et al. (2020)
23	Unprepared teachers and low awareness of professional English	Nugroho (2020)
24	Few long-term metaphorical teaching implementations	Silvestre-López and Beltrán-Palanques (2019)
25	Shortage of ESP staff and poor ELT adaptation	Kamberi et al. (2020)
26	Limited resources and low practitioner involvement	Dragoescu Urlica et al. (2019)
27	Lack of creative pedagogical training in ESP	Arifani and Suryanti (2019)
28	Low digital literacy and unequal tech readiness	Alkhezzi and Al-Dousari (2016)

Furthermore, this SLR revealed significant gaps in contemporary ESP development, particularly in pedagogical, methodological, and technological aspects. Several studies highlight the lack of multimodal learning, the lack of technology integration, and the low level of digital literacy of ESP teachers as major barriers to pedagogical innovation (Cheraghi & Motaharinejad, 2023; Dong & Kou, 2025). Furthermore, the limited longitudinal studies and the lack of motivation-based approaches and learning differentiation indicate that ESP in ELT is still dominated by linguistic and technical approaches, while pragmatic, affective, and contextual aspects have not been optimally explored (Guosheng et al., 2024; Nasiri & Khojasteh, 2024). These findings emphasize the need for a more systematic and data-driven mapping of ESP research to strengthen the position of ESP as a strategic component in the development of modern ELT, which is the novelty of this study.

3. Methodology

The literature search was conducted utilizing the Scopus database due to its quality and comprehensive coverage of applied linguistics, language education, and TESOL research. Publications were selected from 2000 to 2025 to capture both foundational and contemporary studies. The primary search string was formulated using Boolean logic (Väisänen, 2025) as follows:

("English for Specific Purposes" OR "ESP") AND ("English Language Teaching" OR "ELT") AND ("teaching" OR "language learning" OR "teacher" OR "student" OR "teaching method")

The PRISMA-based process began with the identification of 9176 documents, of which 2095 were retained after initial exclusion. Further filtering by document type yielded 1436 articles. After open access screening, 663 records with valid metadata were retained. Keyword relevance filtering yielded 271 eligible articles, and after removing two non-English publications, a final set of 269 papers was obtained. Additional keywords were retained to ensure alignment with the pedagogical orientation of ELT and its integration with professional ESP contexts. These keywords included "teaching, language learning, English language teaching, English for academic purposes, teacher, assessment, language proficiency, learning outcomes, higher education, students, e-learning, EFL, and English for specific purposes".

All retrieved records were exported in RIS and CSV formats and analyzed using VOSviewer, CiteSpace, and Publish or Perish to identify citation structures, author collaboration networks, and keyword co-occurrence patterns (Zainal Abidin et al., 2025). From this set, 36 related articles were manually selected as the primary corpus for in-depth SLR analysis based on their relatedness to the topic being studied. This multi-layered filtering process yielded a verified and representative dataset illustrating the conceptual interaction between ESP and ELT. The PRISMA selection process is illustrated in Figure 1.

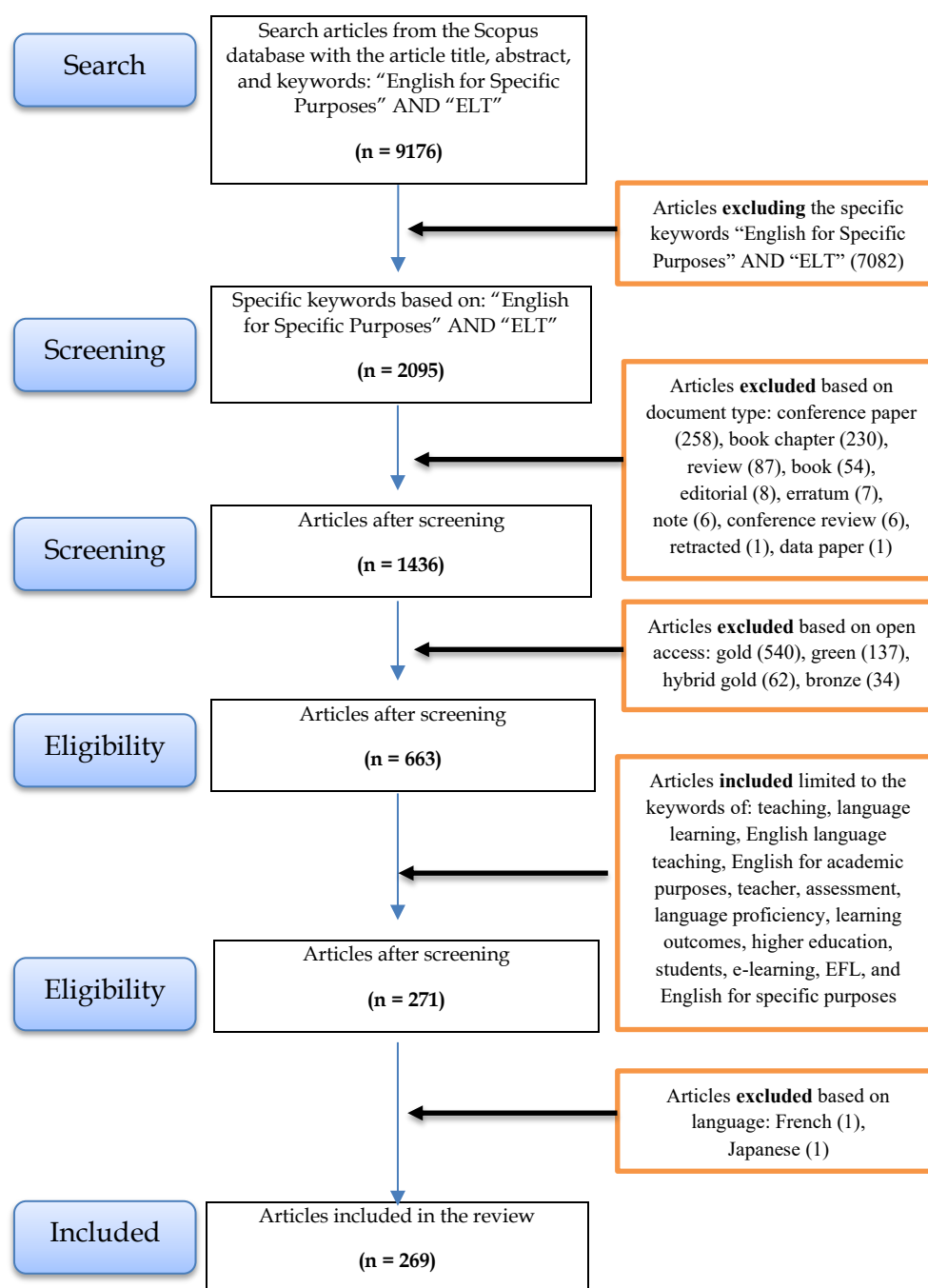


Figure 1: Systematic literature review information flow using PRISMA

To analyze the comprehensive overviews of the trends in ESP research over time, this study implemented an SLR combined with bibliometric analysis. This hybrid method was used to plot the development, methodological steps, and conceptual scopes of ESP within the extensive framework of ELT. This approach combined the in-depth analysis of qualitative research using thematic synthesis with the quantitative precision offered by bibliometric visualization (Marzi et al., 2025). Accompanied by the PRISMA 2020 framework, the study ensured methodological

transparency, traceability, and trustworthiness throughout all phases of the analysis.

4. Results and Findings

This section presents analytical insights acquired from a combination of the SLR and bibliometric analysis of current publications on ESP in the field of ELT. The findings also provide a thematic map, publication trends, dominant keywords, and methodological innovation that highlight ESP evolution in the digital era. The SLR was applied to investigate in depth the content and conceptual adaptation of each comprehensible study, while the bibliometric analysis was used to determine patterns of inter-topic relationships and research production.

4.1 Analysis of Inter-Country Collaboration Networks

A map of the co-authorship network by country in ESP research integrated into ELT is shown in Figure 2.

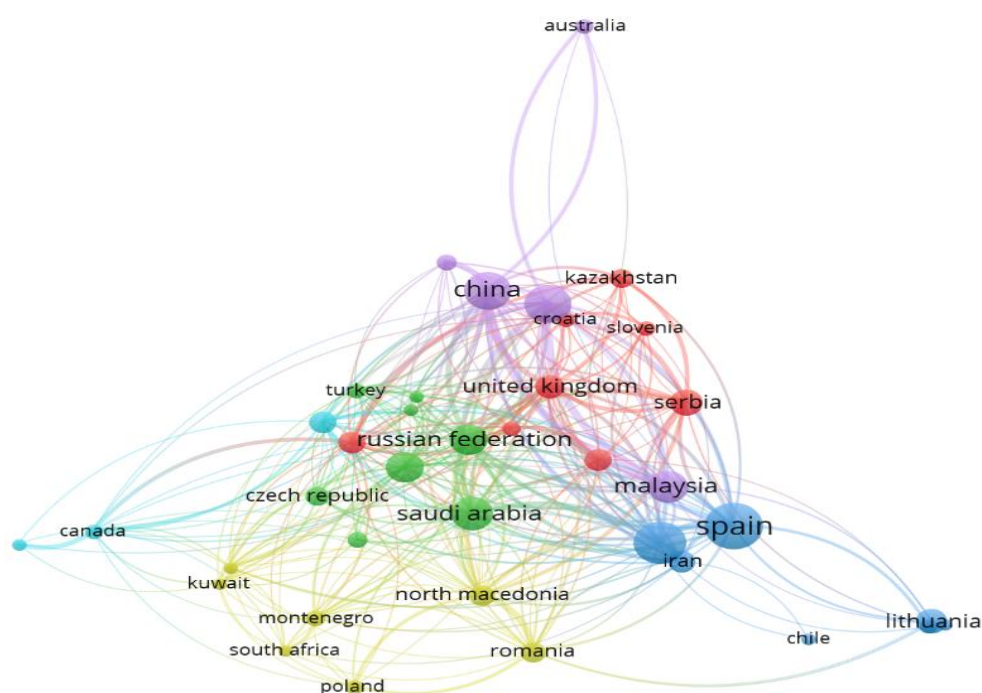


Figure 2: Inter-country co-authorship network in ESP-ELT research (VOSviewer visualization)

VOSviewer visualization can be perceived as a network, with line thickness (link strength) depicting the strength of the alliance between countries and node size depicting the number of publications. Regional collaboration groups are portrayed in cluster colors that tend to have similar patterns to academic collaboration. Three important trends establish global collaboration in this pattern: (1) a relocation in the core of ESP research from the West to East Asia and the Middle East, (2) cross-regional collaboration based on global research universities, and (3) still limited involvement by developing countries in Scopus-indexed research. These conditions signify an epistemic imbalance in the

allocation of ESP knowledge production that needs to be bridged through cross-regional collaboration and a decolonial approach in future research.

4.2 Keyword Co-Occurrence Network Analysis

Figure 3 displays a co-occurrence network of keywords that illustrates the relationships among terms in ESP-ELT research from 2000 to 2025.

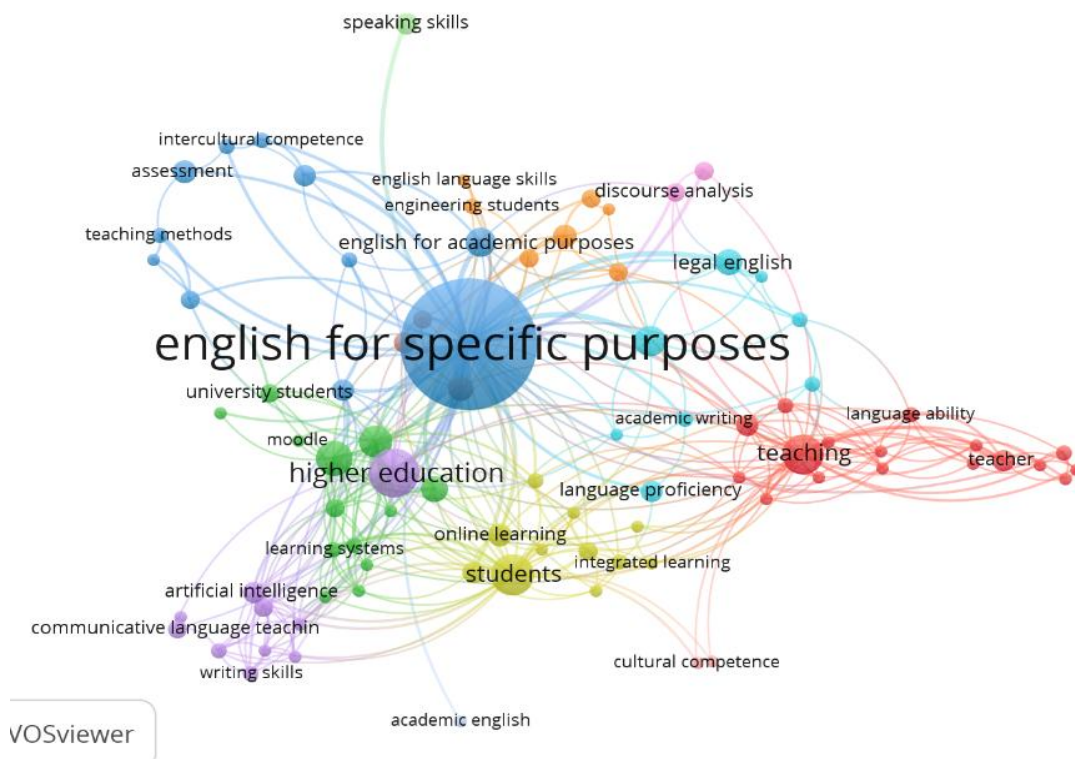


Figure 3: Keyword co-occurrence network in ESP-ELT publications (2000-2025)

Node size shows the frequency of keywords in the Scopus database, whereas node distance reflects the degree of conceptual relationship between terms. Conceptually, these results show that current ESP research is moving primarily in two directions. The first is the transformation of digital education, using technologies such as artificial intelligence (AI), learning management systems, and data-driven learning to expand access to and effectiveness of ESP education. The second is a shift toward critical socio-pedagogical approaches that question the ideological, social, and ethical dimensions of using ESP. In other words, ESP is evolving from a descriptive linguistic approach toward an interdisciplinary approach that includes technology, linguistic justice, and the social identity of learners.

The growing correlation between the keywords “English for Specific Purposes”, “teaching”, and “students” also shows that ESP is being progressively integrated into the global ELT framework. Therefore, ESP is strengthening its position not as a separate subfield but as an educational model that contributes to the renewal of 21st century English language teaching. However, there are some significant research gaps. These include a lack of studies examining the long-term impact of

AI-based learning on students' critical and humanistic literacy, as well as a lack of underrepresentation of research from the Global South (see Figure 2), which could offer alternative perspectives to the hegemony of English in global education.

4.3 Analysis Based on Scopus Document Sources

The graph in Figure 4 shows a comparison of the articles published per year by source journal.

Documents per year by source

Compare the document counts for up to 10 sources.

[Compare sources and view CiteScore, SJR, and SNIP data](#)

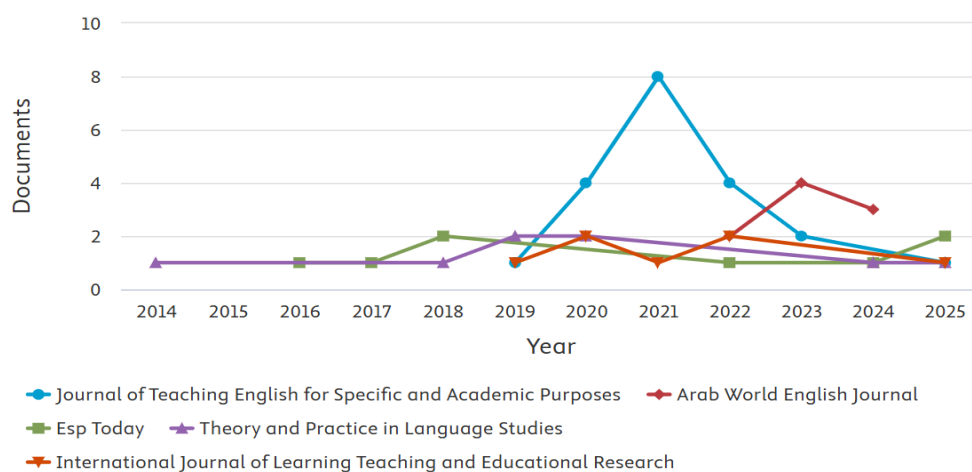


Figure 4: Number of ESP-ELT publications by source journal

The data show that for 2020–2022, the Journal of Teaching English for Specific and Academic Purposes had the highest number of the peer-reviewed journal articles. This explains the significant increase in academic interest in ESP following the COVID-19 pandemic, which was dominated by online and hybrid learning models. Furthermore, the Arab World English Journal and ESP Today also demonstrated significant academic interest in ESP during online learning (2020–2022) in the Middle East and Eastern Europe. The continued focus of ESP research on pedagogical practices was demonstrated by the steady production of articles by Theory and Practice in Language Studies. Therefore, the variety of international journals across regions can be a hallmark of the current ESP publication landscape.

The graph in Figure 5 shows the frequency of publications per institution.

Documents by affiliation

Compare the document counts for up to 15 affiliations.

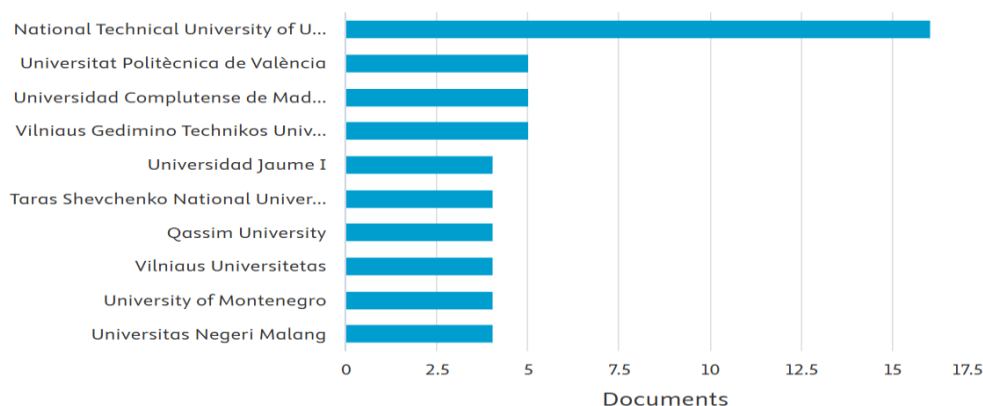


Figure 5: Top institutional affiliations in the ESP-ELT research output

Most of the reviewed articles on ESP were from the National Technical University of Ukraine. This is followed by the Universitat Politècnica de València, Universidad Complutense de Madrid, and Vilnius Gedimino Technikos Universitetas. These four universities serve as centers for studying higher education-based ESP research, particularly on ESP integration into vocational and technical education curricula. Interestingly, the State University of Malang from Indonesia also made it into the top ten contributors, showing the growing contribution of Southeast Asian education to global ESP research. This pattern suggests that technically oriented institutions and polytechnics are more active in ESP research due to their appropriateness to professional and vocational contexts.

The graph in Figure 6 illustrates the distribution of publications per country.

Documents by country or territory

Compare the document counts for up to 15 countries/territories.

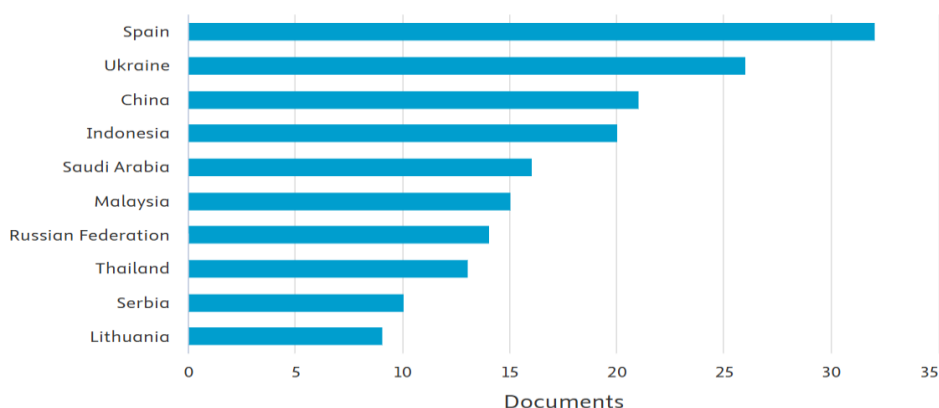


Figure 6: Distribution of the ESP-ELT publications by country

Spain had the highest number of publications, with over 30 publications, followed by Ukraine, China, and Indonesia. The dominance of Spain indicates that

Southern Europe is the core of contemporary ESP research, especially in the field of academic discourse and genre-based learning. China and Ukraine predominated in technology-based research and needs analysis in higher education. Indonesia's position in company with China highlights Southeast Asia's emergence as a new research force in applied ELT. Other countries, such as Saudi Arabia, Malaysia, Russia, and Thailand, made significant improvements in the context of EFL (English as a foreign language) and vocational-based teaching. This graph shows how ESP research has grown more widely across multi-contextual settings.

The diagram in Figure 7 presents the classification of the ESP-ELT publications by discipline. The majority of the articles were derived from the social sciences (54.2%), followed by the humanities and arts (29.3%), and minor disciplines such as computer science (2.7%), engineering (2.9%), and psychology (2.5%). The high percentages for the social sciences and humanities disciplines reveal that ESP is still viewed as an educational discipline focused on humans and communication, rather than the exact sciences or engineering. However, the presence of technology and computing disciplines implies a new trend toward the digitalization of ESP, for instance, through computer-assisted language learning (CALL), learning management systems, and AI. Therefore, ESP research nowadays is multidisciplinary, integrating aspects of pedagogy, linguistics, technology, and the psychology of learning.

Documents by subject area

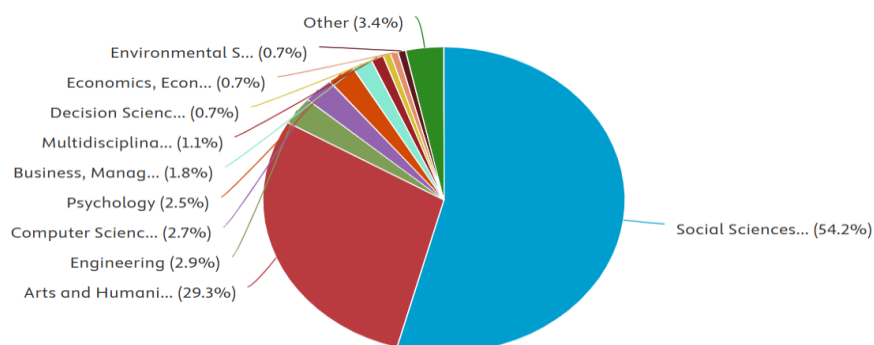


Figure 7: ESP-ELT publications by subject area in the Scopus database

5. Discussion

The theoretical, methodological, and practical implications of the mapping results of ESP literature in an ELT context are discussed in this section. This section presents gaps in research along with possible directions for development toward a more introspective, integrating, and context-oriented ESP on the basis of responses to the three research questions.

5.1 RQ1: How has ESP Evolved within the ELT Framework Over Time, especially in the post-2000 Digital Era?

This study showed that the development of ESP in ELT is multidimensional and dynamic, extending from a linguistic-structural approach to genre-based communication and, finally, to multimodal, digitally oriented professional contexts. Kourilova (1979) conceived ESP for non-native engineering and science students as a matter of teaching receptive skills only. However, the general picture has radically changed in the last two decades, with research conducted by Dong and Kou (2025), Hyland (2022), and Jiang and Qu (2024) that positions ESP not as a sub-discipline of ELT but rather as an independent area that fuses genre studies, needs analysis, and technological utilization under one pedagogical umbrella.

The bibliometric analysis (see Figure 4), supported by literature, showed a rapid increase in ESP publications after 2017, characterized by concentrations on competence-based learning (Jiang & Qu, 2024), data-driven learning (Yan, 2022), and needs-based curriculum design in areas such as the health (Huang et al., 2022; Mohamed et al., 2024; Zhang et al., 2020) and fine arts sectors (Mao & Zhou, 2024). This trend shows that ESP instruction is no longer restricted to linguistic structures but requires pragmatic, critical, and reflective skills. However, a gap exists, namely, that many ESP courses in higher education remain theoretically dominated and carry less significance toward vocational aspects or social interaction through collaboration (Guosheng et al., 2024; Jiang & Qu, 2024; Mauludin et al., 2023; Nikolaeva & Synekop, 2020).

Conceptually, the integration of ESP into ELT has been influenced by an interdisciplinary perspective which combines professional content and cross-cultural communication (Alharbi, 2022; Amin, 2025; Mao & Zhou, 2024; Ng & Cheung, 2024). However, challenges have arisen, since the conceptual boundaries of general ELT and contextual ESP tend to overlap (Kamberi et al., 2020; Silvestre-López & Beltrán-Palanques, 2019). As a result, many teachers have adopted a generic approach to teaching without having carried out an adequate needs analysis. This situation indicates a transition gap between ideal ESP theory and ELT practice in the field.

Results from the hybrid SLR integrated with CiteScore-based bibliometric analysis indicated that highly cited studies of ESP research of 2018–2024 increasingly emphasized digital mediation, corpus-informed instruction, and AI-assisted feedback systems. Higher CiteScore journals such as *Teaching English for Specific and Academic Purposes* revealed a methodological convergence toward data-driven and technology-enhanced approaches of research, with themes concerning multimodal literacy, adaptive learning analytics, or discipline-specific digital discourse.

This demonstrated the methodological developments seen in ESP research, where there has been a shift in focus, from simply documenting language use toward empirical measurement of communicative competence in professional and academic settings. The evolution of this research landscape suggests that post-2000 ESP has matured into a data-informed, technology-integrated discipline that values ethical AI use, learner autonomy, and contextual digital equity. Therefore,

the current trajectory of ESP points toward a techno-humanistic integration paradigm, bridging human-centered pedagogy with algorithmic personalization.

This development shows that ESP is no longer the adaptation of ELT to professional purposes, but an epistemic repositioning of English aimed at developing global social and functional competencies. Thus, it is important for future ELT pedagogy to come up with learning models of combined critical literacy, disciplinary discourse, and technological mediation to make ESP an area that builds bridges between the academic world and the workplace.

5.2 RQ2: What Are the Epistemic and Pedagogical Gaps in the Global ESP Context?

One of the persisting problems in the ESP and ELT context is the professionalization of ESP teachers. English for specific purposes teachers need to maintain a frustrating triangle of competences across professional discourse, language instruction, and contextual perspective to cater to the learners' different needs. However, this vision is often hindered by the lack of institutional support for interdisciplinary collaboration (Kamberi et al., 2020; Mauludin et al., 2023). Therefore, the ESP classrooms in many situations continue to base their teaching-learning process on traditional linguistic means that are remote from real professional contexts, thus reducing the pertinence and transformative potential of learning.

From the perspective of pedagogy, teacher creativity and contextual adaptability are crucial in determining learning results. Research by Arifani and Suryanti (2019) shows that teaching creative processes increases students' immersion considerably, while Dragoescu Urlica et al. (2019) stress the fact that context-based pedagogical instruction is not implemented enough. These results unveiled a standing pedagogical rift, as many ESP teachers are not sufficiently prepared to structure hybrid learning spaces that integrate linguistic, cognitive, affective, and socio-cultural dimensions meaningfully.

From a policy perspective, Giang et al. (2023) found that the absence of institutional structures is an obstacle to the professional development of ESP teachers, especially in developing countries. This is further compounded by the absence of cross-national collaborative research, with bibliometric co-authorship results demonstrating a majority of authors from Eastern Europe and China. This epistemic gap was reflected in the geographies of ESP knowledge, with a disinterest in addressing pedagogical visions in most developing countries, such as Indonesia, Malaysia, and Bangladesh.

Another significant gap exists in digital and affective skills. Although online education has long been adopted, many teachers find it challenging to handle the emotional and social aspects of virtual learning (Huang et al., 2022; Mihai et al., 2022). Moreover, the role of mobile learning (Alkhezzi & Al-Dousari, 2016) and case-based pedagogy (Mauludin et al., 2023), for example, remain largely unexplored due to technological constraints as well as the lack of exposure to such areas (Alkhezzi & Al-Dousari, 2016; Mauludin et al., 2023). These findings imply that the problem is not simply technological but also ecological in nature, meaning

that teachers have yet to assume the role of co-creators in an interconnected learning ecosystem.

The findings of this study imply that teachers need to be able to repurpose data, make sense of their students' professional contexts, and construct multimodal learning opportunities. Thus, improving ESP teachers' professionalism is one of the main ways for this type of learning to remain relevant in the digital era. This concept is supported by Hyland (2022), who states that the new ESP practitioners should be learning architects, and not just content-passers.

5.3 RQ3: What is the Suggested Future Theme for Further Exploration in the Area of ESP in Academic Settings?

The future of ESP in academic settings takes the form of a technological-humanistic integration paradigm that strives to bring together digital innovation and pedagogical ethics, teacher professionalization, and linguistic equity and inclusivity. The advent of such innovations as augmented reality (AR), data-driven learning, and AI applications has altered the ESP domain (Amin, 2025; Andrejević & Nejković, 2022; Yan, 2022). However, as Alharbi (2022) warned, the efficiency of technology is contingent on social, cultural, and pedagogical preparedness. Thus, further studies have been suggested to explore the notion of "digital eco-pedagogy", that is, a pedagogical perspective of technology supported by ethical considerations, fair access, and multilingual awareness connected with Flowerdew (2016) and Hyland's (2022) insights on situatedness in the instruction of academic literacies.

In addition, the professionalization of ESP teachers is a strategic issue that still needs to be explored. Studies conducted by Mauludin et al. (2023) and Nikolaeva and Synekop (2020) also confirmed the lack of institutional support and cross-disciplinary skills for ESP teachers. One area in which future research could build is an "ecological teacher development model", where teachers are seen as learning architects who design multimodal and data-informed learning experiences (Hyland, 2022). This is consistent with the argument by Basturkmen and Wette (2016) and Paltridge and Starfield (2016) that linking language and professional context requires teacher autonomy and reflexivity.

Moreover, the dimension of inclusivity and multilingualism in ESP was indicated as significant for fear that employing the English language at the academic level may enhance global linguistic hegemony (Alharbi, 2022; Galloway et al., 2024). Future research should investigate inclusive and culturally responsive approaches in ESP that support the development of digital citizenship and a multilingual orientation to the world. Efforts are also required to tackle the epistemic gap in ESP knowledge production, which remains overwhelmingly dominated by Eastern Europe and East Asia (Giang et al., 2023; Williams et al., 2024).

Therefore, ESP research in the academic context can be seen moving toward five main focal areas, namely, 1) digital ethics and human-based innovation, 2) teacher professional empowerment, 3) inclusive and multilingual pedagogy, 4) institutional strategies in enhancing teacher professionalism, and

5) collaborations across nations. The five focus areas together constitute a paradigm of a new post-digital ESP that not only focuses on technological advances but also validates human values, pedagogical pertinence, and linguistic equity in the global education ecosystem.

6. Conclusion

The findings and discussion of the study showed that ESP in ELT has changed its epistemological position. This shift was evidenced by academic teachers and institutions taking a proactive stance in using technologies such as AR, data-driven learning, and hybrid learning. These changes expanded the role of ESP from simply being a medium of study to a vehicle for enhancing professional competency and global social awareness.

Nonetheless, more sustained academic and institutional challenges, known as epistemic and pedagogical challenges, persist on the horizon in terms of teacher professionalization, institutional capability, and a lack of regional proxies for bridging research. Thus, further studies were suggested to explore the notion of “digital eco-pedagogy”, that is, a pedagogical perspective of technology supported by ethical considerations, fair access, and multilingual awareness that remains rarely studied.

To address educational or institutional challenges, this study suggests that future researchers further collaborate in five directions, namely, digital ethics and human-based innovation, teacher professional empowerment, inclusive and multilingual pedagogy, institutional strategies in enhancing teacher professionalism, and collaborations across nations. In this manner, the post-digital ESP paradigm will deliberately align digital advancement with pedagogical significance and social justice as a transformative force within the global educational ecosystem.

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8. References

- Alharbi, B. (2022). Saudi English for specific purpose students' attitudes toward the learning of English language: An investigative study. *Frontiers in Education, 7*, Article 998531. <https://doi.org/10.3389/feduc.2022.998531>
- Alkhalidi, A. A., Ozdemir, E. A., & Alhasan, R. F. (2022). ESP creative writing from engineering students' perspectives: A case study. *International Journal of English Language and Literature Studies, 11*(3), 136–146. <https://doi.org/10.55493/5019.v11i3.4613>
- Alkhezzi, F., & Al-Dousari, W. (2016). The impact of mobile learning on ESP learners' performance. *Journal of Educators Online, 13*(2), 73–101. <https://doi.org/10.9743/jeo.2016.2.4>
- Amin, E. A.-R. (2025). The impact of augmented reality on vocabulary acquisition and engagement among college ESP students. *Theory and Practice in Language Studies, 15*(2), 414–425. <https://doi.org/10.17507/tpls.1502.11>

- Andrejević, D., & Nejković, V. (2022). E-learning web application for teaching English for specific purposes – “English at a click”. *Journal of Teaching English for Specific and Academic Purposes*, 10(1), 013–029. <https://doi.org/10.22190/jtesap2201013a>
- Arifani, Y., & Suryanti, S. (2019). The influence of male and female ESP teachers’ creativity toward learners’ involvement. *International Journal of Instruction*, 12(1), 237–250. <https://doi.org/10.29333/iji.2019.12116a>
- Basturkmen, H., & Wette, R. (2016). English for academic purposes. In G. Hall (Ed.), *The Routledge handbook of English language teaching* (pp. 164–176). Routledge. <https://doi.org/10.4324/9781315676203-15>
- Bouguebs, R. (2022). Digital literacy importance in ESP teacher education: Perceptions, engagements and reality. In H. Andaloussi (Ed.), *ESP teaching today: Current practices, challenges* (pp. 120–132). Democratic Arab Center.
- Carkin, S. (2005). English for academic purposes. In E. Hinkel (Ed.), *Handbook of research in second language teaching and learning* (pp. 85–98). Routledge.
- Charles, M. (2025). English for academic purposes. In S. Starfield & C. S. Hafner (Ed.), *The handbook of English for specific purposes* (2nd ed., pp. 247–264). John Wiley & Sons. <https://doi.org/10.1002/9781119985068.ch13>
- Cheraghi, Z., & Motaharnejad, A. (2023). Investigating the challenges of Iranian ESP teachers at medical schools: The role of video presentation on subject related critical incidents. *Informatics in Medicine Unlocked*, 39, Article 101250. <https://doi.org/10.1016/j.imu.2023.101250>
- Dong, X., & Kou, Y. (2025). A multimodal discourse-based teaching framework for English in printing and dyeing technology: Bibliometric and simulation approaches. *Journal of Language and Technology Studies*, 8, 673–698. <https://doi.org/10.31881/tlr.2025.038>
- Dou, A. (2024). Needs analysis of ESP courses from the perspective of students and teachers. *Frontiers in Educational Research*, 7(6), 132–138. <https://doi.org/10.25236/fer.2024.070620>
- Dragoescu Urlica, A.-A., Coroama-Dorneanu, L.-I., Kamberi, L., & Malenko, N. (2019). ESP for the life sciences: Designing an English textbook for sustainable learning [Conference session]. *13th Quality Research International Quality Conference* (pp. 681–686). <https://doi.org/10.24874/pes01.02.069>
- Flowerdew, J. (2016). English for specific academic purposes (ESAP) writing. *Writing & Pedagogy*, 8(1), 5–32. <https://doi.org/10.1558/wap.v8i1.30051>
- Flowerdew, L. (2012). English for academic purposes. In *The encyclopedia of applied linguistics* (pp. 1–7). John Wiley & Sons. <https://doi.org/10.1002/9781405198431.wbeal0376>
- Galloway, N., Sahan, K., & McKinley, J. (2024). English for specific purposes in surging English-medium instruction contexts. *Journal of English-Medium Instruction*, 3(2), 236–259. <https://doi.org/10.1075/jemi.23011.gal>
- Giang, N. D., Tuan, V. V., & La Minh, B. N. (2023). Investigating demotivating factors in learning English for specific purposes at a higher education institution. *Russian Psychological Journal*, 20(1), 162–181. <https://doi.org/10.21702/rpj.2023.1.11>
- Guosheng, X., Xiaoyu, Z., & Baihui, Q. (2024). Students’ learning motivation in English for specific purpose in Chinese universities. *International Journal of Evaluation and Research in Education*, 13(5), 3402–3410. <https://doi.org/10.11591/ijere.v13i5.29421>
- Hamp-Lyons, L. (2011). English for academic purposes. In E. Hinkel (Ed.), *Handbook of research in second language teaching and learning* (pp. 89–105). Routledge. <https://doi.org/10.4324/9780203836507.ch6>

- Harun, L. B., Munir, H., Amin, A., & Astika, S. (2025). Development of student-centered learning-based ESP teaching materials for engineering departments. *Journal of Social and Science*, 5(8), 3264–3273.
<https://doi.org/10.59188/journalsosains.v5i8.32435>
- Huang, C., Pun, J., & Huang, J. (2022). Using a mixed-methods needs analysis to ensure the sustainability and success of English for nursing communication courses: Improving nurse-patient engagement practices in globalized health care. *Sustainability*, 14(21), Article 14077. <https://doi.org/10.3390/su142114077>
- Hutchinson, T., & Waters, A. (1987). *English for specific purposes*. Cambridge University Press. <https://doi.org/10.1017/cbo9780511733031>
- Hyland, K. (2014). English for academic purposes. In C. Leung & B. V. Street (Ed.), *The Routledge companion to English studies* (pp. 392–404). Routledge.
<https://doi.org/10.4324/9781315852515.ch26>
- Hyland, K. (2022). English for specific purposes: What is it and where is it taking us? *English for Specific Purposes*, 66, 80–93. <https://doi.org/10.1016/j.esp.2022.01.001>
- Jiang, L., & Qu, H. (2024). Assessing core competencies of business English students in Chinese higher vocational colleges. *Scientific Reports*, 14, Article 29328. <https://doi.org/10.1038/s41598-024-78898-y>
- Kamberi, L., Dragoescu Urlica, A.-A., & Ameti, M. (2020). On the quality and relevance of English for specific purposes in higher education. *International Journal for Quality Research*, 14(1), 303–312. <https://doi.org/10.24874/ijqr14.01-19>
- Karasaliu, A., Pylli, E., & Burda, M. (2025). Preparing real-world professionals: Integrating ESP in higher education through digital media and hybrid pedagogy. *Studies in Media and Communication*, 13(4), 83–93. <https://doi.org/10.11114/smc.v13i4.7637>
- Kehal, M. (2024). Needs analysis: The cornerstone of effective ESP program development. *Annals of Guelma University for Social and Human Sciences*. <http://dspace.univ-guelma.dz/jspui/handle/123456789/15914>
- Keshtiarast, B., Salehi, H., Tabatabaei, O., & Baharlooie, R. (2022). Solving ESP problems: Students and teachers' perceptions of integrating information and communication technology into ESP instruction. *Journal of Nusantara Studies (JONUS)*, 7(2), 444–472. <https://doi.org/10.24200/jonus.vol7iss2pp444-472>
- Kholturaeva, G. (2025). Needs analysis and curriculum development in English for specific purposes (ESP). *International Journal of Artificial Intelligence*, 1(2), 582–586. <https://inlibrary.uz/index.php/ijai/article/view/74327>
- Kourilova, M. (1979). Teaching English for specific purposes. *British Medical Journal*, 2, 431–433. <https://doi.org/10.1136/bmj.2.6187.431>
- Leva, B., Onič, T., Todorović, T., Urh, J., & Hazemali, D. (2025). Student perceptions of digital tools in language and translation programs: A survey-based case study at the University of Maribor, Slovenia. *Education Sciences*, 15(9), Article 1119. <https://doi.org/10.3390/educsci15091119>
- Liu, Q., Ali, N. L., & Lee, H. Y. (2025). Applying VOSviewer in a bibliometric review on English language teacher education research: An analysis of narratives, networks and numbers. *Cogent Education*, 12(1), Article 2449728. <https://doi.org/10.1080/2331186X.2025.2449728>
- Lyu, E. (2023). Teaching English for specific purposes through case studies: Design, teaching, and evaluation. *Journal of Teaching English for Specific and Academic Purposes*, 11(2), 307–317. <https://doi.org/10.22190/JTESAP230225023L>
- Mao, Q., & Zhou, J. (2024). A needs analysis of ESP courses in colleges of art and design: Consensus and divergence. *PLoS ONE*, 19(6), e0305210. <https://doi.org/10.1371/journal.pone.0305210>

- Marzi, G., Balzano, M., Caputo, A., & Pellegrini, M. M. (2025). Guidelines for bibliometric-systematic literature reviews: 10 steps to combine analysis, synthesis and theory development. *International Journal of Management Reviews*, 27(1), 81–103.
<https://doi.org/10.1111/ijmr.12381>
- Mauludin, A., Rachmawati, D., & Prasetyo, I. (2023). An investigation of the students' perceptions of motivating teaching strategies in English for specific purposes classes. *Journal of University Teaching & Learning Practice*, 20(6).
<https://doi.org/10.53761/1.20.6.5>
- Mihai, M., Albert, C. N., Mihai, V. C., & Dumitras, D. E. (2022). Emotional and social engagement in the English language classroom for higher education students in the COVID-19 online context. *Sustainability*, 14(8), Article 4527.
<https://doi.org/10.3390/su14084527>
- Mohamed, M., Aljadaan, R., & Al-Ani, H. (2024). Needs analysis of English for specific purposes for health sciences students: A cross-sectional study at a university in the U.A.E. *Arab World English Journal*, 15(5), 78–94.
<https://doi.org/10.17507/jltr.1505.04>
- Nasiri, E., & Khojasteh, L. (2024). Evaluating panel discussions in ESP classes: An exploration of international medical students' and ESP instructors' perspectives through qualitative research. *BMC Medical Education*, 24(1), Article 925.
<https://doi.org/10.1186/s12909-024-05911-3>
- Ng, C. H., & Cheung, Y. L. (2024). Teaching and learning medical English for international medical graduates: A scoping review. *Ibérica*, (48), 71–96.
<https://doi.org/10.17398/2340-2784.48.71>
- Nikolaeva, L., & Synekop, O. (2020). Social aspects of students' language learning style in differentiated ESP instruction. *Universal Journal of Educational Research*, 8(9), 4224–4233. <https://doi.org/10.13189/ujer.2020.080949>
- Nugroho, A. (2020). Content and language integrated learning practice in English for accounting course. *International Journal of Emerging Technologies in Learning*, 9(2), 172–181. <https://doi.org/10.15642/IJET2.2020.9.2.172-181>
- Paltridge, B., & Starfield, S. (2016). Ethnographic perspectives on English for academic purposes research. In K. Hyland (Ed.), *The Routledge handbook of English for academic purposes* (pp. 218–229). Routledge.
<https://doi.org/10.4324/9781315657455-21>
- Qamar, M. T., Yasmeen, J., Sohail, S. S., Madsen, D. O., Zeeshan, S. M., & Zahid, M. (2025). Laughing while learning: ESP learners' perspectives on teachers' use of humour in online classrooms. *Discover Education*, 4(1), Article 321.
<https://doi.org/10.1007/s44217-025-00704-2>
- Sakti, N. S. S., Sarkiah, S., Sukma, S., Amaluddin, A., & Efendi, R. (2024). Redefining ESP: Bridging the gap between traditional methods and modern educational needs. *Klasikal: Journal of Education, Language Teaching and Science*, 6(3), 806–813.
<https://doi.org/10.52208/klasikal.v6i3.1164>
- Si, K., Zhang, Y., & Zhang, D. (2025). English proficiency and national competitiveness in sustainable development research based on a bibliometric analysis. *Discover Sustainability*, 6(1), Article 547. <https://doi.org/10.1007/s43621-025-01447-8>
- Silvestre-López, A. J., & Beltrán-Palanques, V. (2019). Conceptual metaphors and emotion expressions in the English for specific purposes classroom. *Cultura, Lenguaje y Representación*, 22, 135–152. <https://doi.org/10.6035/clr.2019.22.8>
- Soler, J., & Kaufhold, K. (Eds.). (2025). *Language and the knowledge economy: Multilingual scholarly publishing in Europe*. Taylor & Francis.
<https://doi.org/10.4324/9781003413066>

- Supunya, N. (2023). A systematic review on ESP teachers: Current focus, collaboration, and sustainability. *REFlections*, 30(2), 287–317.
<https://doi.org/10.61508/refl.v30i2.267295>
- Tan, S., Bava, M., & Hu, H. X. (2023). A bibliometric analysis of English for specific purposes from 2011 to 2023 using Citespace: Visualizing status, themes, evolution, and emerging trends. *Journal of Language and Education*, 9(3), 159–175.
<https://doi.org/10.17323/jle.2023.17632>
- Väisänen, J. (2025). Leveraging scientific research for business improvement: A PRISMA review [Conference session]. *Proceedings of the 2nd International Conference on Education Research*, ISCTE-IUL University Institute of Lisbon, Portugal, 2025, November 6–7. Academic Conferences and Publishing Limited.
<https://doi.org/10.34190/icer.2.1.4308>
- Williams, M., Rahman, A., & Sultana, T. (2024). Challenges and opportunities of English as the medium of instruction in diploma midwifery programs in Bangladesh: A mixed-methods study. *International Journal of Nursing Education*, 13(1), 55–72.
<https://doi.org/10.21203/rs.3.rs-3222188/v1>
- Yan, H. (2022). A blended system for data-driven learning of English for specific purposes. *International Journal of Emerging Technologies in Learning*, 17(12), 121–134.
<https://doi.org/10.3991/ijet.v17i12.29653>
- Zainal Abidin, N., Sri Ramalu, S., Nadarajah, G., & Anuar, A. (2025). A bibliometric analysis of cybersecurity behaviour in organization. *SAGE Open*, 15(3).
<https://doi.org/10.1177/21582440251361635>
- Zhang, H., Jin, S.-J., & Du, S.-Z. (2020). Developing a curriculum model of English teaching for master's degree nursing education in a Chinese medicine university. *International Journal of Nursing Science*, 2(1), 99–104.
<https://doi.org/10.1016/j.ijnss.2019.12.001>