REVIEW

Bibliometric Analysis of English for Specific Purposes Between 1991-2023 with Particular Focus on the Importance of Vocabulary

Zulfizar Saidova [1*] , *Khilola Zakirova* [1] , *Ajit Ilangovan* [2] , *Atabayeva Nodira* [1] , *Utemuratova Zaruxan* [1] , *Mavlanova Mokhira* [1] , *Sabirova Nazokat* [1] , *Zulfiya Kannazarova* [3]

[1] *Foreign Languages Department, Tashkent University of Architecture and Civil Engineering, Tashkent 100194, Uzbekistan*

[2] *Vellore Institute of Technology, hennai Campus, Chennai, Tamil Nadu 600127, India*

[3] *Tashkent Institute of Irrigation and Agricultural Mechanization Engineers, National Research University, Tashkent 100000, Uzbekistan*

ABSTRACT

ESP (English for Specific Purposes) primarily serves for EFL-English as a foreign language speakers in academic and professional contexts, where vocabulary plays a significant role in learning, teaching, and researching specialized forms of the English language. This paper presents a comprehensive review to understand research trends in this area. The aim is to analyze scientific output and published articles on ESP vocabulary from 1991 to 2023. To achieve this, we collected, reviewed, and analyzed 279 publications. Annual number of articles, document type, top articles, top journals, funding sponsors, subject categories and journals, distribution, and institutional affiliation by country categorized these publications. This study maps the knowledge area objectively and aims to identify the status, major research themes, evolution, and emerging trends in this field. This classification helps assess their relevance and the co-occurrence of co-authors and keywords. The current research status through publication distribution and co-country network shows that the research is undergoing a steady increase in international authorship. The bibliometric analysis in the article brings out intellectual interactions, thematic strengths, and the evolving interests of various focus groups using scientific methods. In addition, the paper suggests emphasizing international research on ESP vocabulary to enhance scientific exchange and promote long-term, sustainable development in this sphere. As the ESP field continues

to experience exponential growth and development, it indicates an ongoing expansion and advancement of research in this area. This research provides references for researchers to understand the status, hidden structure, evolution, and emerging future direction of research trends in ESP.

Keywords: ESP; Bibliometric Analysis; Vocabulary; Teaching; Scopus

1. Introduction

ESP (English for Specific Purposes) often has to be made up of learners who are interested in different professional fields such as business and communication, architecture, construction, civil engineering, technology, and medicine [1]. This highlights "the importance for anyone aiming to master the language to work on developing all aspects of their language skills" [2].

The primary goal of an ESP instructor is to develop relevant classes for a variety of students, aiming to use English for communication with foreign partners in professional settings and real-life situations [3]. Vocabulary acquisition is one of the most crucial components of language instruction and acquisition [4]. Researchers emphasize that while language structure is necessary for conversation, vocabulary is indispensable [5]. Due to the complexity and variety of a new language's lexis, learning vocabulary can be challenging, which can hinder natural and accurate use of the language [6].

ESP, or English for Specific Purposes, represents a focused area within the broader field of teaching English as a second or foreign language and typically involves teaching English to university students or professionals, focusing on the specific vocabulary and skills they require [7,8]. Over the past decade, vocabulary has been widely acknowledged as a crucial component in both language teaching and learning [9]. This includes a comprehensive introduction to vocabulary for language teachers [10], the necessity of vocabulary in English [11], the application of professional vocabulary, collaborative learning processes, and communicative delivery strategies [12].

Students are constantly acquiring new vocabulary, consciously or unconsciously [13]. Teaching vocabulary in ESP should be similar to that used in English for General Purposes (EGP) [14]. ESP teachers should begin by introducing words that are common in the general language [15]. They should also be frequently used in technical contexts [16]. Spe-

cialized vocabulary unique to certain disciplines should be introduced subsequently [16]. Historically, vocabulary learning was limited to memorizing lists of specialized words and translating technical texts [17]. During the last few decades, vocabulary learning strategies were found to develop second language vocabulary mastery [18]. Today, students benefit from modern learning methods that enhance their language skills [19]. They can also access the latest methodology in language learning [20]. In discussing ESP teaching, it is important to ask whether ESP teachers should teach technical vocabulary [21]. There is general information that they should not do this [22]. However, there are situations where ESP teachers need to ensure students understand the technical terms used in exercises or texts [23]. ESP teachers must understand their students' needs to effectively select the appropriate vocabulary [24]. It is much easier for teachers to select the most appropriate techniques for each student when they know their students well [25].

Bibliometric analyses in ESP have explored various aspects such as evolution and emerging trends [26,27], English language instructions and acquisition [28], and e-assessment in teaching English [29]. Additionally, bibliometrics has contributed to diverse fields including agricultural mechanization [30], groundwater management [31], financial development and the shadow economy [32], architecture [33], drainage in irrigated areas [34], and grain storage [35]. The subjects revealed in these analyses are widespread across various fields and are increasingly utilized [36]. Bibliometric analyses across different disciplines have been conducted to reach these conclusions [37].

In ESP, vocabulary is not only a linguistic component but a key element that shapes communication within specific domains such as medicine, engineering, law, business, and aviation. Mastery of domain-specific terminology enables learners to comprehend technical texts, participate in professional discourse, and perform job-specific tasks effectively. In fields like medical English, accurate vocabulary use can impact patient safety, while in legal or busi-

ness English, precise terminology is essential for negotiation, documentation, and compliance. In fields such as engineering, design, and architecture, vocabulary plays a pivotal role in enabling learners to understand and produce technical documentation, engage in project planning, and communicate complex concepts accurately. ESP vocabulary in these domains often includes specialized terms related to materials, processes, measurements, and regulatory standards, which are essential for both academic success and professional performance. For instance, engineering students must grasp technical jargon to interpret manuals or specifications, while architecture professionals rely on precise terminology to describe spatial relationships, design elements, and construction details. In design disciplines, where collaboration across international teams is common, domain-specific vocabulary facilitates clear communication and minimizes misunderstandings. Therefore, vocabulary instruction and acquisition are central to ESP curriculum design, materials development, and assessment. Highlighting its pivotal role in aligning language instruction with learners' professional goals, this paper situates vocabulary at the core of ESP research and practice.

This study aims to conduct a comprehensive bibliometric analysis of research on English for Specific Purposes (ESP) vocabulary published between 1991 and 2023. This analysis seeks to evaluate the scientific output within the field by examining publication trends, key research themes, leading journals, top articles, funding sponsors, subject categories, and institutional affiliations across countries. Additionally, the study aims to uncover the intellectual structure, co-author collaborations, keyword co-occurrence patterns, and thematic evolution in ESP vocabulary research. The ultimate goal is to map the current state, identify emerging trends, and promote international research collaboration for sustainable development in the field.

2. Methods

In this search, ESP vocabulary was used as a keyword, covering the years 1991 to 2023, using Scopus, a bibliographic online database. The study was conducted in December 2023. All 279 publications from around the world were selected to analyze ESP vocabulary issues in these regions. Analysis used CSV files, RIS file, Microsoft Excel 2021, Map Chart and VOS viewer.

Regarding article review and study eligibility criteria, during the search process, relevant information such as the keyword "ESP vocabulary" and all articles in English were compiled into a spreadsheet. The search parameters included: Article = "ESP vocabulary", Time = "1991-2023", Doc Type = "article", Subject Area = Social Sciences, Engineering, Arts and Humanities, Countries = various, and Deadline = December 2023. **Figure 1** illustrates the methodology flow for the research.
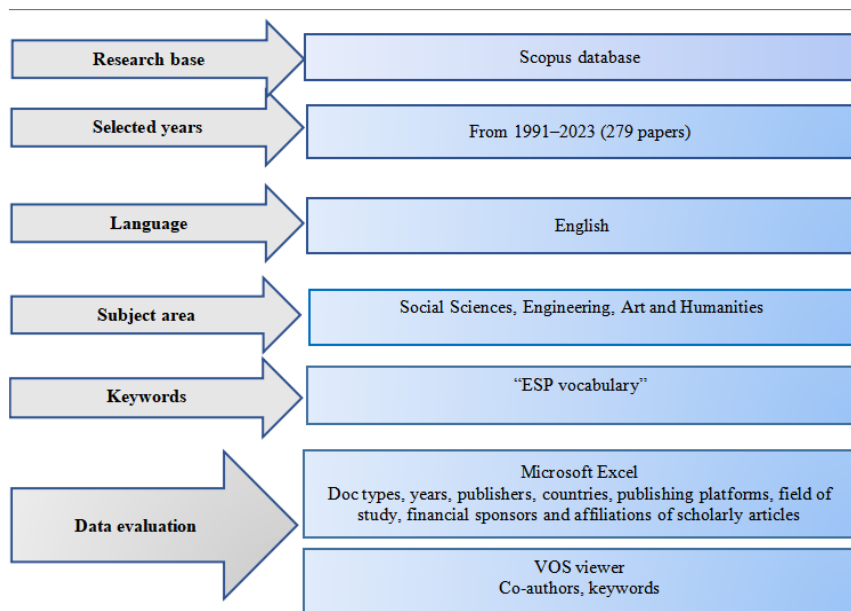

Figure 1. Methodology Flowchart for the Research.

The following exclusion criteria were applied during the screening process:

- Lack of definition of search terms (stability, sensitivity, resistance).
- Many articles lacked a DOI, making it difficult to locate them. Consequently, these articles could not be excluded using Scopus filter options.

Ragarding bibliometric analyses, almost all the data obtained in CSV format was loaded to Excel for bibliometric analysis, through which all articles were examined and analyzed. The most relevant and popular articles, as well as the most prolific authors, were identified. These articles were objectively evaluated and classified based on various criteria: annual number of articles, document type, top articles, leading journals, funding sponsors, subject categories, and journals, as well as the distribution and institutional affiliation of the countries involved. Additionally, a more recent analysis explored the co-occurrence of co-authors and keywords to examine the knowledge and skill components within the research domain. This process identified clusters of widely distributed keywords in the literature.

3. Results

3.1. Trends in ESP Vocabulary Publications

Everyone knows that vocabulary is the main factor in language learning and teaching. Before starting the bibliometric analysis on this topic, it is necessary to ascertain whether the scope of work carried out between the years 1991 and 2023 is appropriate and if the relationship between these years holds wide scientific importance.

The articles published during 1991–2023 on the ESP vocabulary problem are 279 in number (**Figure 2**). These articles are divided into two periods of development: introduction and slight growth (1991–2009), and stable growth (2010–2023).
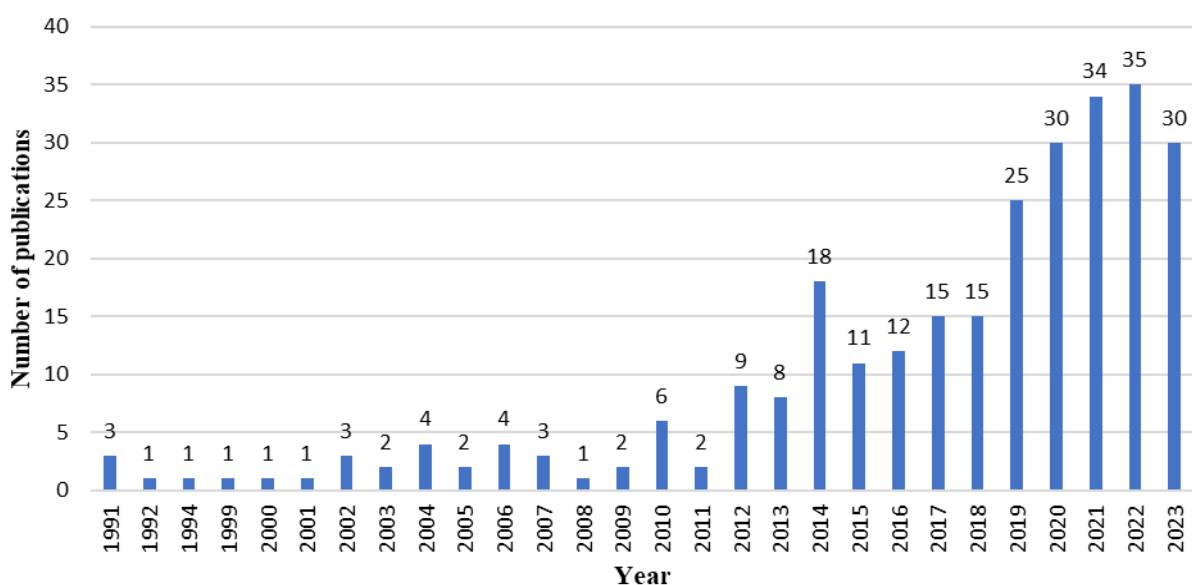
Figure 2. Annual Production of ESP Vocabulary Articles from 1991–2023.

3.1.1. Introduction and Some Hangover Period

The first period (1991–2009) consists of 29 publications, which is 10.39% of all the publications. The results evince interest in the subject of ESP and EAP vocabulary and the differences between them [38], metaphor and vocabulary teaching [39], dictionary use and dictionary needs [40], typical errors of ESP users [41], and a lexical frequency [42].

3.1.2. A Period of Stable Growth

Between 2010 and 2023, a total of 250 papers, comprising 89.61% of the overall publications, indicate a significant increase in scientific interest in this research area. This data is closely tied to the language learning and teaching system, underscoring its importance. Noteworthy studies include "Preparing Business Vocabulary for ESP"

[42], "Naming the Plague in Homer" [43], "ESP Course Construction and Learning Behavior Analysis" [44], "Choosing Specialized Vocabulary to Teach with Data-Driven Learning: An Example from Civil Engineering" [27], "Developing Intercultural Competence and Intelligence in the ESP Classroom" [45], and "Use of Games in ESP Classes" [1]. The highest number of publications was recorded in 2022, with 35 papers, followed by 2021 with 34 papers, reflecting ongoing growth in this field (**Figure 2**).

Additionally, our study reveals that the majority of the publications were research articles, totaling 196 (70.25%). This was followed by 45 conference papers, 21 book chapters, 14 reviews, and 3 documents of other types (**Figure 3**).
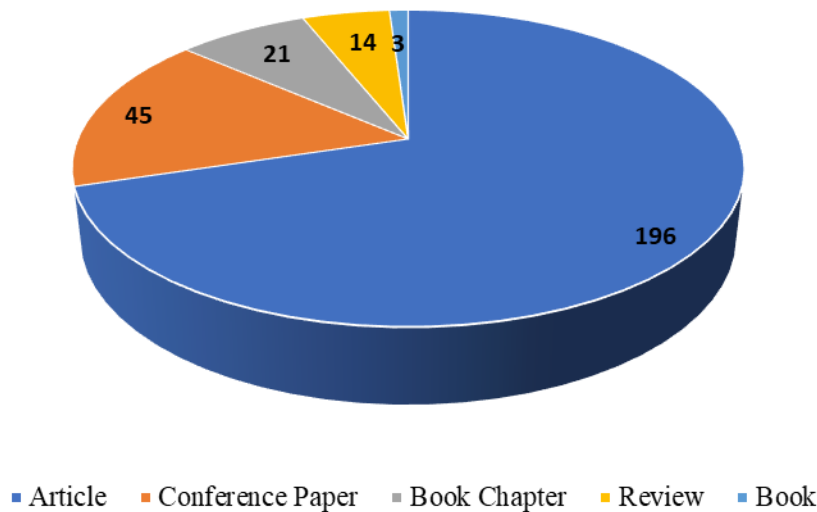
Figure 3. Publication Type on ESP Vocabulary.

3.2. Journals on ESP Vocabulary During the Period 1991–2023

This review provides an overview of journals and topics relevant to the academic field. The papers were published in 127 journals from 66 countries. Of these, 15 journals contributed 834 papers, accounting for 41.74% of the total, while the remaining papers were published in other journals. **Table 1** lists the 64 journals that published at least 5 papers during the review period. Among the top 15 journals, *ESP* had the highest number of publications with 260, followed by *ESP Today*.

Table 1. List of the Journals on ESP Vocabulary During the Period 1991–2023.

Sources	Number	Sources	Number
ESP	18	English Language Education	2
Journal of Teaching ES and AP	11	English Teaching and Learning	2
Asian ESP Journal	8	European Journal of Contemporary Education	2
Asian EFL Journal	5	Global Journal of Engineering Education	2
ESP Today	5	International Journal of Applied Linguistics and English Literature	2
System	5	International Journal of Emerging Technologies in Learning	2
Lecture Notes in Computer Science Including Subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics	4	International Journal of Learning Teaching and Educational Research	2

Table 1. *Cont.*

Sources	Number	Sources	Number
MEXTESOL Journal	4	International Journal of Pedagogy and Curriculum	2
Second Language Learning and Teaching	4	Journal of Asia TEFL	2
Studies in Logic Grammar and Rhetoric	4	Language Learning in Higher Education	2
Advances in Intelligent Systems and Computing	3	Lecture Notes in Networks and Systems	2
English Language Teaching	3	Lexikos	2
GEMA Online Journal of Language Studies	3	LLT Journal on Language and Language Teaching	2
IBERICA	3	Man in India	2
Journal of Language Teaching and Research	3	Reflections	2
Proceedings Of SPIE The International Society for Optical Engineering	3	Theory and Practice in Language Studies	2
Proceedings of The ASME Design Engineering Technical Conference	3	Universal Journal of Educational Research	2
RELC Journal	3	World Journal of English Language	2
Sustainability Switzerland	3	Acta Facultatis Medicae Naissensis	1
Taiwan International ESP Journal	3	American Journal of Philology	1
ACM International Conference Proceeding Series	2	Applied Intelligence	1
Analele Universitatii Ovidius Constanta Seria Filologie	2	Applied Linguistics Review	1
Computer Assisted Language Learning	2	Asian Journal of University Education	1
Elearning And Software for Education Conference	2	Asian Pacific Journal of Second and Foreign Language Education	1

3.3. Authors and Their Countries

Our research identified 160 authors from 66 countries who conducted studies on ESP vocabulary between 1991 and 2023. **Figure 4** highlights 10 publishers each of whom has two or more articles. Leading this group is Coxhead. A., a professor at Victoria University in Wellington, with 8 publications.
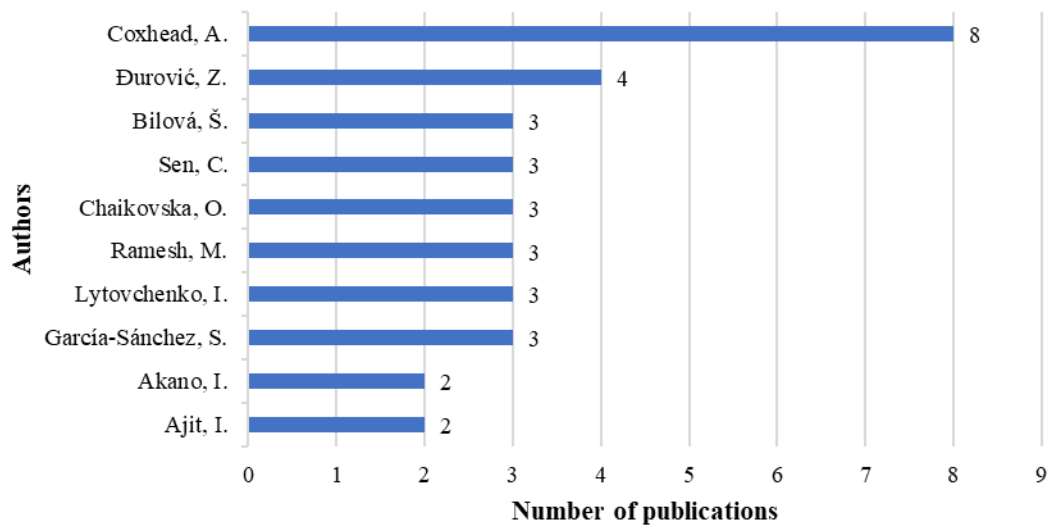

Figure 4. Top Contributors to Publications on ESP Vocabulary.

3.4. Institutions on ESP Vocabulary

Institutions were categorized according to the quality of the articles they issued. Over a 32-year period, 162 different institutions published 279 papers related to ESP vocabulary across various countries. Our analysis of the top 10 institutions' publications on ESP vocabulary iden-

tified the most influential and productive institutions in this field. As shown in **Figure 5**, Victoria University of Wellington (New Zealand) leads with 10 publications, followed by the University of Montenegro (Podgorica) with 6 publications. Both Universitatea Babes-Bolyai (Romania) and Universidad de Las Palmas de Gran Canaria (Spain) have 4 publications each.
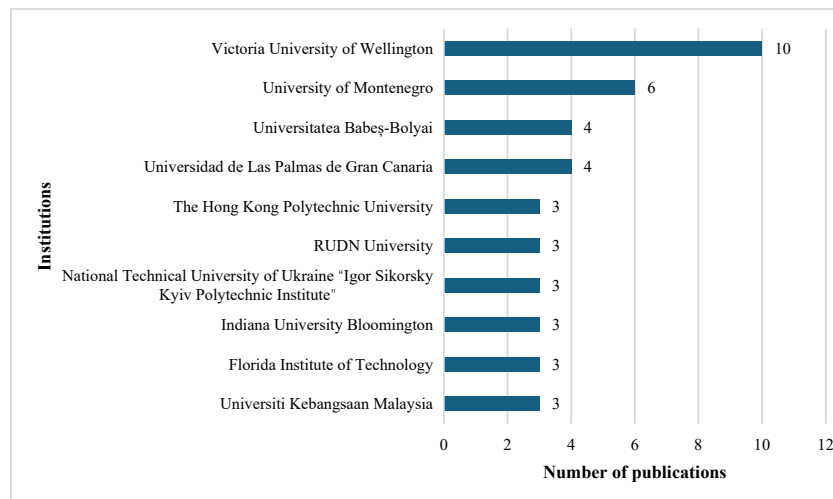
Figure 5. List of Top Institutions on ESP Vocabulary.

3.5. Leading Countries on ESP Vocabulary

Taking ESP vocabulary research between 1991 and 2023 into account, it is known that ten countries came out with at least ten publications each. Of them, Spain came

first with 20 publications. The other countries were the United States with 19, Iran with 18, the United Kingdom with 18, Japan with17, China with 16, Indonesia with 14, Taiwan with 13, New Zealand with 12, and Thailand with 11 publications (**Figure 6**).

Figure 6. List of Top Countries on ESP Vocabulary in Different Countries of the World.

3.6. Leading Cited Papers on ESP Vocabulary

Table 2 provides data on the fifteen most-cited papers on ESP vocabulary from various countries around the world. The top-cited paper, with 364 citations, is titled "KL Divergence Regularized Deep Neural Network Adaptation for Improved Large Vocabulary Speech Recognition" and was published in the IEEE International Conference on Acoustics, Speech and Signal Processing – Proceedings in 2013 by Su [46].

Table 2. List of Top Cited Publications.
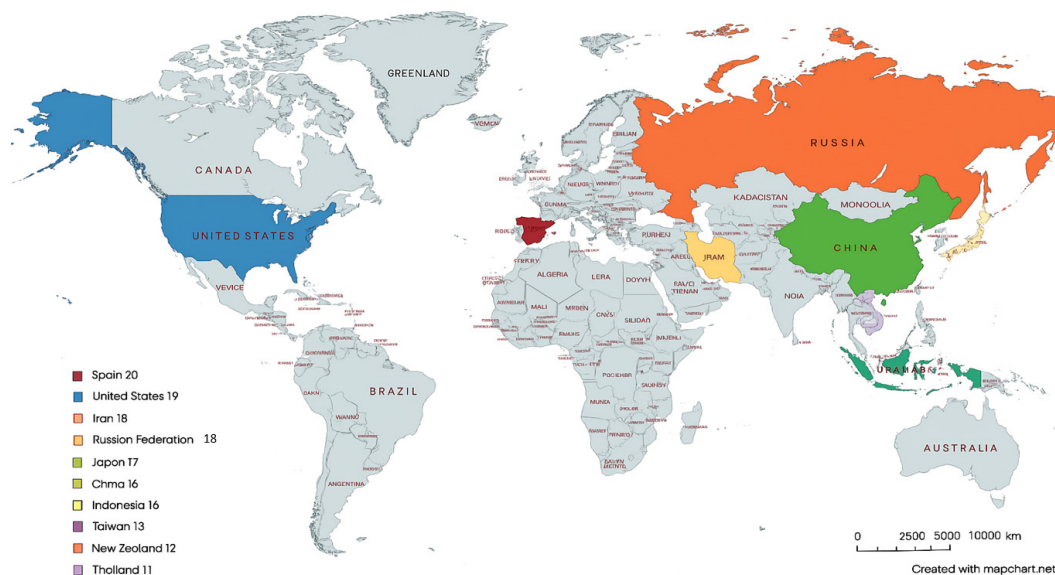
No.	Title	Journal	Corresponding Author	PY	TC 1991–2023
1.	KL-divergence regularized deep neural network adaptation for improved large vocabulary speech recognition	ICASSP, IEEE International Conference on Acoustics, Speech and Signal Processing – Proceedings	Yu D	2013	364
2.	An empirical survey of Linked Data conformance	Journal of Web Semantics	Hogan A.	2012	154
3.	Engineering English: A lexical frequency instructional model	English for Specific Purposes	Mudraya O.	2006	142
4.	Identifying technical vocabulary	System	Chung T.M	2004	139
5.	Metaphor and vocabulary teaching in ESP economics	English for Specific Purposes	Charteris-Black J.	2000	88
6.	Lextale-Esp: A test to rapidly and efficiently assess the spanish vocabulary size; [Lextale-esp: Un test para la rápida y eficaz evaluación del tamaño del vocabulario en español]	Psicologica	Izura C	2014	83
7.	How useful is EAP vocabulary for ESP? A corpus-based case study	RELC Journal	Sutarsyah C	1994	77
8.	How content lecturers help students with language: An observational study of language-related episodes in interaction in first year accounting classrooms	English for Specific Purposes	Basturkmen H	2015	68
9.	Improving Translation Model by Monolingual Data	WMT 2011 – 6th Workshop on Statistical Machine Translation, Proceedings of the Workshop	Bojar O	2011	60
10.	The effect of online cooperative learning on students' writing skills and attitudes through telegram application	International Journal of Instruction	Aghajani M	2018	43
11.	Image Annotation by Propagating Labels from Semantic Neighbourhoods	International Journal of Computer Vision	Verma Y	2017	42
12.	Towards the development of an academic word list for applied linguistics research articles	RELC Journal	Khani R	2013	38
13.	The relationship between vocabulary size and depth for ESP/EAP learners	System	Akbarian I.	2010	36
14.	Memory strategy instruction, contextual learning and ESP vocabulary recall	English for Specific Purposes	Atay D	2007	36
15.	Mapping the field of English for specific purposes (1980–2018): A co-citation analysis	English for Specific Purposes	Liu Y	2021	35

* PY – Published year, * TC – Total citation

3.7. Leading Cited Journals on ESP Vocabulary

It can be a useful fact to know the top-cited journals about ESP vocabulary. We have given the names of the top journals in **Figure 7**, which had larger citations in the research domain of ESP vocabulary during the period under review. The journal *English for Specific Purposes* led the pack with 577 citations.
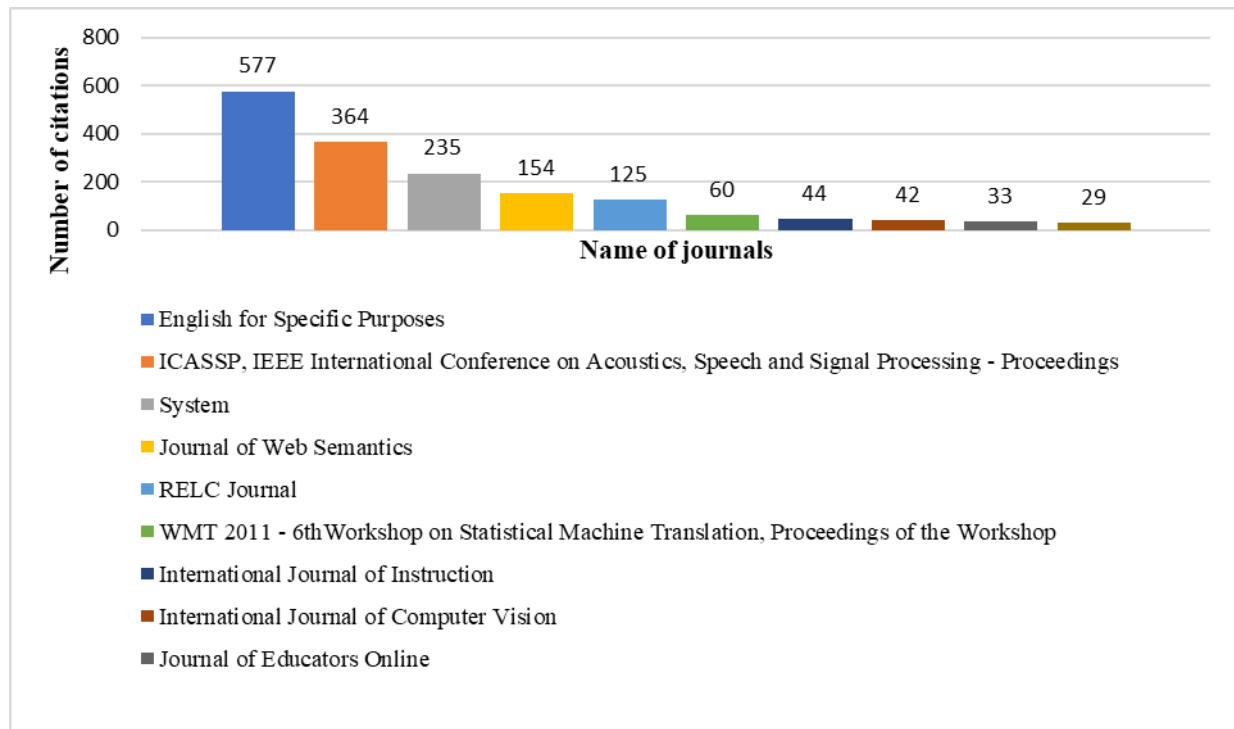
Figure 7. Top Cited Journals on ESP Vocabulary.

3.8. Leading Sponsors on ESP Vocabulary

During 1991–2023, ten different funding sponsors from various countries supported publishing 22 papers on ESP vocabulary issue. Based on our analysis on this issue, the most influential and productive sponsors were identified. According to **Figure 8**, the Ministry of Education from China funded four publications, the Ministry of Education from Russia funded three publications, and the Japan Society for the Promotion of Science funded three publications.

Figure 8. List of Top Funding Sponsors on ESP Vocabulary.

3.9. Clusters on ESP Vocabulary

In the Scopus database, subject areas are classified into different topic clusters. The largest of articles on ESP vocabulary from different countries fall into five main clusters, as shown in **Figure 9**. The Social Sciences cluster comprises 47% of the total publications, while the Arts and Humanities account for 32%, Computer Sciences for 12%, Engineering for 6%, and Mathematics for 3%.
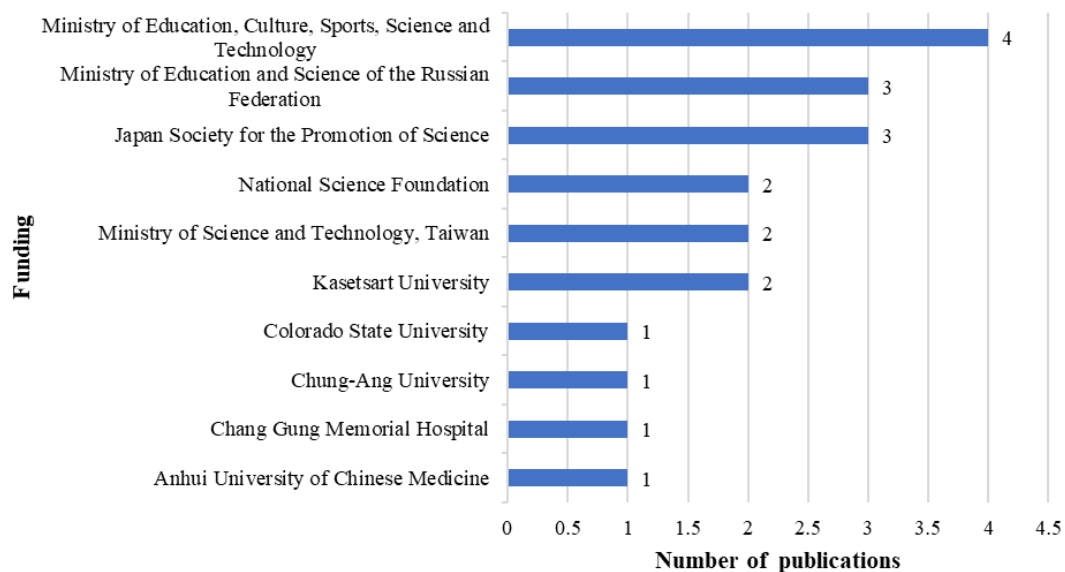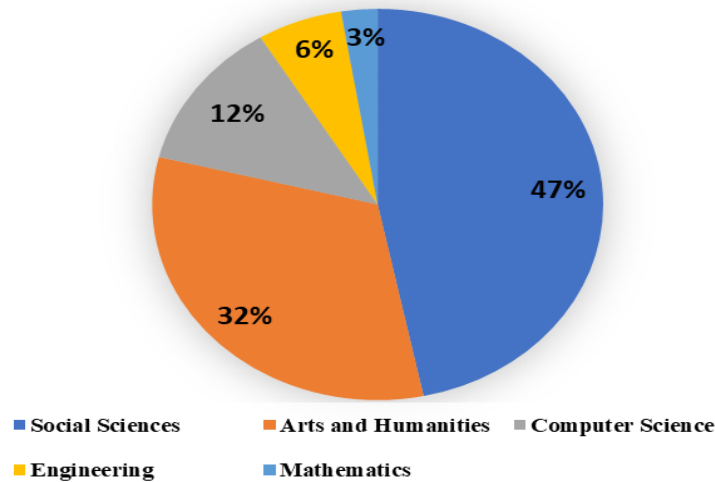

Figure 9. Top Topic Cluster Name on ESP Vocabulary.

3.10. Leading Co-Authorships on ESP Vocabulary

Using VOS viewer, it is possible to create co-authorship, keyword co-occurrence, citations, bibliographic relationship and co-citation maps from bibliographic data in formats such as txt, ris, and csv from databases such as Scopus [47]. The raw data file was imported into VOS viewer, and co-authorship and keyword co-occurrence maps (**Figures 10** and **11**) were generated. The co-authorship analysis produced a network of 538 authors, including only those with at least five publications on ESP vocabulary. This network comprises 16 items distributed across 10 clusters: cluster 1 (2 items), cluster 2 (2 items), cluster 3 (1 item), cluster 4 (2 items), cluster 5 (2 items), cluster 6 (2 items), cluster 7 (1 item), cluster 8 (2 items), cluster 9 (1 item), and cluster 10 (1 item), with a total link strength of 118 and 23 links.
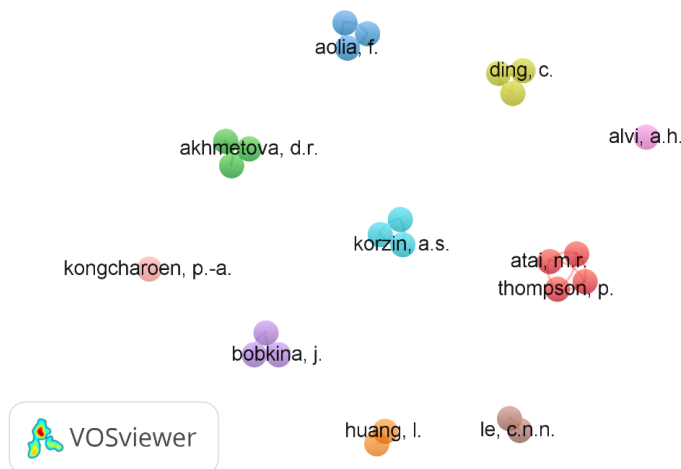
Figure 10. Network Map of Top Co-Authorships Based on the Total Link Strength.
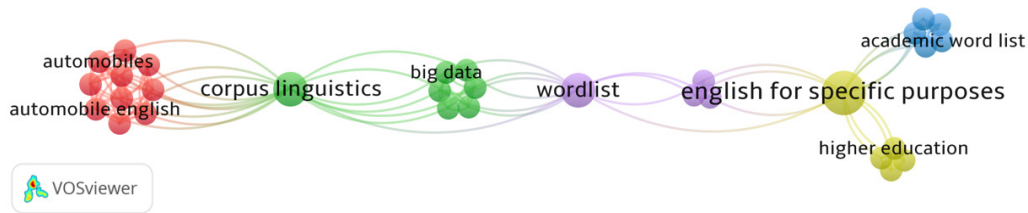
Figure 11. Network Map of Top Keywords Based on the Total Link Strength.

3.11. Leading Keywords on ESP Vocabulary

The analysis identified 57 keywords. After excluding general keywords with low relevance scores and those with low occurrences (the minimum occurrence was set to 1 to enhance the co-occurrence results), 31 items were finalized. Each keyword was represented as a node based on the overall strength of connections, creating a network map of all keywords. **Figure 11** displays the map of network of the top sixteen 16 authors' keyword co-occurrences, with node size indicating the keyword's importance. The 31 items are distributed across 5 clusters: cluster 1 (automobiles, learning initiatives, automobile English, corpus linguistics), cluster 2 (academic vocabulary, EAP, ESP vocabulary, word list), cluster 3 (core meaning, English for specific purposes), cluster 4 (academic word list), and cluster 5 (higher education process), with a total link strength of 118 and 23 links.

4. Discussion

The objectives of the study were the analysis the existing knowledge of ESP words and to systematically review the scientific articles and areas of research that have had the major impact on the topic. This bibliometric analysis showed that, over the past 32 years, the most significant results in ESP vocabulary research have been obtained in the last five years. The total quantity of articles produced each year on ESP vocabulary from 1991 to 2023 across various countries shows two development phases: an introduction and slight growth period (1991–2009) and a stable growth period (2010–2023). During the introduction phase, interest in ESP vocabulary within English learning began with specific purpose relationships, while the slight growth phase making much of learning specific terminologies. During this time, the need for specialized vocabulary influ-

enced the effectiveness of publications around the world.

Analyses indicate that Victoria University of Wellington is the leading institution, with authors such as Coxhead A. and Benson being prominent. Spain and the USA rank as the top countries in ESP vocabulary research. Additionally, Ministry of Education of Japan, Culture, Sports, Science, and Technology leads in funding sponsorship for specific research, with four articles. This is significant because Japan, as a developed country, hosts many highly regarded research centres and universities.

The research revealed that 160 authors from 66 countries conducted studies on ESP vocabulary between 1991 and 2023. Notably, ten authors have published more than seventeen papers related to this field. Among them, Coxhead A., a professor from Victoria University of Wellington, stands out with 8 publications, followed by Durovich Z. with 4. Bilova S., Sen C., Chaykovska O., Ramesh M., Lyutovchenko, and Garcia Sanches S. each have 3 publications, while Akano I. and Ajit I. each have 2. These top authors represent a diverse range of countries worldwide.

The most cited paper, "KL-Divergence Regularized Deep Neural Network Adaptation for Improved Large Vocabulary Speech Recognition" by Synekop et al. [48], has 364 citations. Considering this, we investigated the top-cited journals on ESP vocabulary. We first sorted the source names alphabetically in an Excel file containing 279 documents and then summarized the total citations for each journal. The updated list of potential journal names was derived from this process. We selected the top 10 journals, as shown in **Figure 7**. The leading journal, "English for Specific Purposes," has 577 citations, followed by "ICASSP, IEEE International Conference on Acoustics, Speech and Signal Processing – Proceedings" with 364 citations, "System" with 235 citations, and the "Journal of Web Semantics" with 154 citations.

In this bibliometric analysis, we found it necessary to

think about a number of limitations mentioned above. The most important of these is funding and co-authorship, which are currently among the most painful and urgent issues. Experts highlighted that vocabulary contributes almost 50% of text books, that in turn should not hinder the improvement of oral speech and thedevelopment of fluency. Therefore, it raises the question of whether thematic discussions are common in large groups, collaborative learning within smaller ones, or both, and whether current academic literature is appropriate for students or not. The range of textbooks chosen might have been wider, as well as, the conversations should not focus specifically on terminology during the speech. Recommendations for upcoming studies involve broader research of terminology load and curricular and subject-specific vocabularies that may confirm or disconfirm the multiword unit findings of this study.

As the field of ESP vocabulary research continues to evolve, several future directions and challenges emerge. One key direction involves the integration of advanced digital technologies, including AI-powered language learning platforms, adaptive vocabulary assessment tools, and domain-specific corpora, which can enhance personalized vocabulary acquisition and instruction. Additionally, interdisciplinary collaboration between language educators, subject-matter experts, and instructional designers will be essential to ensure that vocabulary instruction remains aligned with real-world professional communication needs. However, significant challenges persist. The rapid evolution of technical terminology in fields such as engineering, IT, and design requires ongoing updates to teaching materials and lexicons. There is also a disparity in access to ESP resources and research outputs between developed and developing countries, which can hinder global equity in ESP education. Moreover, there is a need for more empirical classroom-based studies to validate theoretical frameworks and assess the effectiveness of vocabulary interventions in specific professional contexts. Addressing these challenges while embracing innovation will be crucial for ensuring the continued relevance, impact, and global applicability of ESP vocabulary research.

Regarding the role of learning skills on ESP vocabulary, The most remarkable result to emerge from the data is that, we have analyzed ESP vocabulary by four skills. They are reading, writing, listening and speaking skills, and our studies provide additional support in the tables on how much vocabulary can be increased through these skills. A table for developing ESP vocabulary through the four skills has been created. They are reading, writing, listening and speaking skills.

4.1. Reading Skills

A total of 33 publications are given in **Table 3** of reading skills from 1991 to 2023, and these publications include various learners of ESP, i.e., Science and technology, engineering, business, sports, etc. It should be noted that the most publications are reading depends on the skill. For instance, A Content Comprehension Approach to Reading English for Science and Technology [49], Data-Driven Selection of Technical Vocabulary for Instruction: A Civil Engineering Case" [8], Developing Business English Students' Metaphorical Competence in Foreign Language Learning Higher Education Contexts [50], Application of Corpus-Based Text Statistics Analyzer in Sports English [46].

Table 3. List of Publications on Reading Skills in ESP Vocabulary.

№	Name of Publications	Year	Name of Sources	Authors
1	Vocabulary matching for book indexing suggestion in linked libraries – A prototype implementation and evaluation	2009	Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)	Isaac A.
2	Looking from the past to the future in ESP through a corpus-based analysis of English for specific purposes journal titles	2016	English Teaching and Learning	Anthony L.
3	A Content Comprehension Approach to Reading English for Science and Technology	1991	TESOL Quarterly	HUDSON T.
4	A textual analysis of students' business writing tasks in a Romanian university setting	2019	Journal of Linguistic and Intercultural Education	Cojocnean D.

Table 3. *Cont.*

№	Name of Publications	Year	Name of Sources	Authors
4	A textual analysis of students' business writing tasks in a Romanian university setting	2019	Journal of Linguistic and Intercultural Education	Cojocnean D.
5	Analyzing collocational patterns of semi-technical words in science textbooks	2010	Pertanika Journal of Social Science and Humanities	Menon S.
6	Application of Corpus-Based Text Statistics Analyzer in Sports English	2021	Journal of Physics: Conference Series	Yu B.
7	CARET: A collaborative approach to authentic EFL text reading via computer-aided study	2006	7th International Conference on Information Technology Based Higher Education and Training, ITHET	Tsutsumi Y.
8	Choosing specialized vocabulary to teach with data-driven learning: An example from civil engineering	2021	ESP	Otto P.
9	Cognate recognition: Its importance in the teaching of ESP reading courses to Spanish speakers	1992	ESP	Moss G.
10	Computer-Mediated Immediate and Delayed L1 and L2 Glosses and Vocabulary Learning and Reading Comprehension of an ESP Text	2022	CALL-EJ	Faghfouri F.
11	Corpus Affordances in Foreign Language Reading Comprehension	2023	Demystifying Corpus Linguistics for English Language Teaching	Fuentes A.C.
12	Critical evaluation of lexical categories in ESP textbooks used for Iranian dentistry students: The gap between perceived and real needs	2015	Asian ESP Journal	Boshrabadi A.M.
13	Developing business English students' metaphorical competence in foreign language learning higher education contexts	2017	ES Review	Rios M.E.C.L.
14	Development and use of an EFL reading practice application for an android tablet computer	2013	Proceedings of the IADIS International Conference Mobile Learning 2013, ML 2013	Ishikawa Y.
15	Development and use of an EFL reading practice application for an android tablet computer	2014	International Journal of Mobile and Blended Learning	Ishikawa Y.
16	Educational Policies Revisited: Measuring the Lexical Complexity of English Language Users in Academic and Technical Contexts: A Comparative Study	2021	2021 Sustainable Leadership and Academic Excellence International Conference, SLAE 2021	Memari Z.
17	Exploring the flexibility of ESP materials through the IPO model: corpus and consumer insights from the Turkish EFL context	2022	Journal of Teaching ES and AP	Simsek M.R.

Table 3. *Cont.*

№	Name of Publications	Year	Name of Sources	Authors
18	Improving online readability in a web 2.0 context	2009	Handbook of Research on Web 2.0 and Second Language Learning	Loucky J.P.
19	Investigation of Vocabulary for ESP Classrooms from Academic Journals in Physical Education and Sports Science	2023	LEARN Journal: Language Education and Acquisition Research Network	Kongcharoen P.-A.
20	Making the most of experience: from syllabus to textbook design	2019	Journal of Teaching ES and AP	Đorđević L.V.
21	Memory strategy instruction, contextual learning and ESP vocabulary recall	2007	ESP English for Specific Purposes	Atay D.
22	On the effects of focus on form, focus on meaning, and focus on forms on learners' vocabulary learning in ESP context	2012	ELT	Saeidi M.
23	Single and multi-word unit vocabulary in university tutorials and laboratories: Evidence from corpora and textbooks	2017	Journal of EAP	Coxhead A.
24	Students' Making Test-Format Questions in English for Specific Purposes Course as Means of Improving Reading Skills	2023	Lecture Notes in Networks and Systems	Kogan M.S.
25	Sustained silent reading and specialized vocabulary for ESP. A case study	2019	eLearning and Software for Education Conference	Cotoc A.
26	Teaching technical English for engineering students with physics text book - A study	2014	Man in India	Saravanan V.
27	The application of contextual expressions to improve effectiveness of learning in ESP classroom	2015	Journal of Language Teaching and Research	Tian H.
28	The Comparison between Vocabulary Prescribed in an English for Engineering Commercial Textbook and the Actual Use of English Engineering Vocabulary in Working Routines: The Perception from Thai Engineers	2021	TESOL International Journal	Wang T.
29	The correlation between students' reading anxiety and their reading comprehension in ESP context	2021	International Journal of Language Education	Mardianti N.
30	The creation of podcasts to enhance the development of speaking and specific vocabulary in authentic contexts: A case study on the use of Anchor with ESP tourism students	2023	Technological Innovation Put to the Service of Language Learning, Translation and Interpreting: Insights from Academic and Professional Contexts	Benzies Y.J.C.
31	The teaching of ESP lexis revisited: the effect of authentic text adaptation on vocabulary retention	2023	ESP Today	Elkasović S.
32	Vocabulary learning strategy instruction: Its impact on English for specific purpose vocabulary achievement and reading comprehension	2012	Middle East Journal of Scientific Research	Heidari F.L.
33	What's cooking in English culinary texts? Insights from genre corpora for cookbook and menu writers and translators	2018	Translator	Paradowski M.B.

4.2. Writing Skills

In **Table 4**, to increase vocabulary through writing skills, a high talent is required from the student, the reason for this is that writing skills mainly include academic knowledge. A total of 12 publications are given on writing

skills, and they cover various fields, mainly dating back to 2016. Such as Teaching medical professional writing through exemplar-based genre instruction [51], Improving legal writing and advocacy abilities in law students via English for Specific Purposes (ESP) [52], Analysing the texts of business writing assignments completed by students at a Romanian university [53].

4.3. Speaking Skills

Speaking skill is one of the most important skills in language learning and its application. According to the information given in **Table 5**, the number of nine publications which were published in the last eight years. The following topics on speaking skills in ESP vocabulary, Difficulties in Speaking skills [54], profiling maritime communication by non-native speakers [55], English public speaking: Presentations for English for specific purposes and Technical single and multiword unit vocabulary in spoken [56,57].

Table 4. List of Publications on Writing Skills in ESP Vocabulary.

№	Name of Publications	Year	Name of Sources	Authors
1	Glogging In the ESP Classroom: Developing Tourism Studies Students' EFL Persuasive Writing	2021	ESP Today	El-Garawany M.S.M.
2	Assessing the English Writing Needs of Undergraduate Business Administration Students for ESP Writing Course Development: A Case Study in Thailand	2022	LEARN Journal: Language Education and Acquisition Research Network	Jitpanich T.
3	Exemplar-based genre instruction: The case of medical professional writing	2022	Writing and Pedagogy	Farooqui A.
4	Enhancing students' genre writing skills in an English for Specific Purposes class: A dynamic assessment approach	2021	Mextesol Journal	Mauludin L.A.
5	An ESP Approach to Teaching Nursing Note Writing to University Nursing Students	2022	Education Sciences	Su S.-M.
6	From authentic input to authentic output: Assessing the real-world potential of ESP tourism student writing	2018	Asian ESP Journal	Friedman G.
7	Academic writing needs assessment: A case study of MPH students, University of Khartoum	2018	Second Language Learning and Teaching	Mohammed A.S.E.
8	A textual analysis of students' business writing tasks in a Romanian university setting	2019	Journal of Linguistic and Intercultural Education	Cojocnean D.
9	Influence of Chinese English Bilingual Corpus of Traditional Chinese Medicine Prescriptions on ESP Writing Under the Background of Big Data	2020	Advances in Intelligent Systems and Computing	Su Z.
10	What's cooking in English culinary texts? Insights from genre corpora for cookbook and menu writers and translators	2018	Translator	Paradowski M.B.
11	Enhancement of legal writing and advocacy skills through ESP for law students	2016	Man in India	Ramesh M.
12	The effect of online cooperative learning on students' writing skills and attitudes through telegram application	2018	International Journal of Instruction	Aghajani M.

Table 5. List of Publications on Speaking Skills in ESP.

№	Name of Publications	Year	Name of Sources	Authors
1	Promoting EFL Learners' Self-regulated Learning using a Self-recorded Video-Speaking Task in an Online ESP Course	2022	Journal of Asia TEFL	Kang N.
2	Difficulties in Speaking English among the EFL Students in Iraqi Kurdistan Region	2022	World Journal of English Language	Ghafar Z.N.
3	The creation of podcasts to enhance the development of speaking and specific vocabulary in authentic contexts: A case study on the use of Anchor with ESP tourism students	2023	Technological Innovation Put to the Service of Language Learning, Translation and Interpreting: Insights from Academic and Professional Contexts	Benzies Y.J.C.

Table 5. *Cont.*

№	Name of Publications	Year	Name of Sources	Authors
4	Profiling maritime communication by non-native speakers: A quantitative comparison between the baseline and standard marine communication phraseology	2017	ESP	John P.
5	Speaking ability and psychological barriers of the second-year students of Hotel Department of SMKN 1 Sidenreng Kabupaten Sidrap in speaking English	2016	Asian EFL Journal	Farahdiba S.
6	English public speaking: Presentations for English for Specific Purposes	2019	International Journal of Literacies	García-Sánarez S.
7	Lexical richness of one-minute speaking task by science and technology university students	2020	Journal of Asia TEFL	Thawarom T.
8	Technical single and multiword unit vocabulary in spoken rugby discourse	2022	ESP	Benson S.
9	Assessing spoken language ability: A many-facet Rasch analysis	2018	SLL and Teaching	Hidri S.

4.4. Listening Skills

This chart is based on vocabulary enrichment through listening comprehension skills, and includes publications published in the last 7 years. According to him, the skills of the list include public video lectures, video presentations and audio recordings that are widely distributed on social networks [58]. Through this skill, TEDs have been given about the extent to which the student can understand the vocabulary through listening [59], as well as through which methods it can be developed.

5. Conclusions

This paper aims to analyze the scientific production and articles published during 1991–2023 based on ESP vocabulary. In alignment with this objective, we have located and reviewed 279 publications. According to the results of the given studies, Victoria University of Wellington is leading among top institutions, and authors such as Coxhead A. and Benson are leading others. Spain and the USA rank as the leading countries as well as The Ministry of Education, Culture, Sports, Science and Technology from Japan ranks first in funding sponsorship for specific research, with 4 articles. We have also located 10 authors who have published more than 17 papers in total and scientific publications related to this field. Among them, Coxhead A., a professor from Victoria University of Wellington, stands out with 8 publications. Some limitations could be felt. The most important of them are funding and co-authorship, which are currently the most painful and urgent issues.

In conclusion, we would like to emphasize that, although the study of terminology vocabulary in EFL ed-

ucation was not given due attention for many years, its importance is now widely recognized. The process is seen as quite complicated. Upon success, ESP learners can perform both social and academic tasks with ease. Terminology is a vital component of every teaching syllabus and ought to be delivered both systematically and consistently. ESP teachers must select vocabulary based on the students' needs and proficiency levels. The discontinuity in research is likely due to the short-term funding of research projects, leading to a lack of long-term studies and sustainable integration of ESP vocabulary research. These issues need to be addressed in the future. Furthermore, international research on ESP vocabulary would benefit from increased scholarly exchange, especially between developing and developed countries, the ESP vocabulary research community, stakeholders, and scholars.

Future research on ESP vocabulary should focus on several key areas to foster further development in the field. First, greater emphasis should be placed on interdisciplinary studies, integrating ESP with other fields such as artificial intelligence, corpus linguistics, and language technologies to enhance vocabulary teaching and learning tools. Additionally, longitudinal studies examining the impact of ESP vocabulary acquisition on academic and professional performance would provide deeper insights into its practical relevance. Expanding international collaborations and cross-cultural studies could promote more inclusive research and improve global understanding of ESP needs across various disciplines and contexts. Researchers should also explore new methodologies, including advanced bibliometric tools, network analysis, and machine learning, to gain novel insights into trends and thematic shifts over

time. Lastly, addressing underrepresented regions and languages in ESP research is essential to ensure a broader, more diverse perspective. Future work should promote sustainable development in the field by fostering open-access publishing, enabling greater accessibility and scientific exchange among scholars worldwide. These efforts will contribute to the continued growth, innovation, and global relevance of ESP research.

Author Contributions

Conceptualization, Z.S.; methodology, A.I. and A.N.; formal analysis, A.I., K.Z., A.N., U.Z. and M.M.; investigation, K.Z. and U.Z.; data curation, K.Z., U.Z. and A.N.; writing—original draft preparation, Z.S. and K.Z.; writing—review and editing, Z.S., A.I., M.M., S.N. and Z.K.; visualization, A.I. and U.Z.; supervision, Z.S.; project administration, Z.S. All authors have read and agreed to the published version of the manuscript.

Funding

This work received no external funding.

Institutional Review Board Statement

Not applicable.

Informed Consent Statement

Not applicable.

Data Availability Statement

The data supporting the findings of this study are available from publicly accessible bibliographic databases, Scopus. No new data were created or generated specifically for this study.

Acknowledgments

Special thanks to colleagues and academic peers who offered valuable insights during the review process. The authors also appreciate the administrative and technical support received during the data collection and analysis phases. Although no external funding was received, the collaborative environment and shared resources contributed meaningfully to the successful completion of this research.

Conflicts of Interest

The authors declare no conflict of interest.

References

[1] Alghamdi, A.A., 2022. Is Teaching Technical Words a Problematic Issue for ESP Teachers in a Saudi Industrial College? Advanced Journal of Social Science. 11(1), 82–89. DOI: https://doi.org/10.21467/ajss.11.1.82-89

[2] Al-Muhiesen, E.A., Al-Ajrami, M., 2019. Challenges in Translating Technical Texts. Dirasat: Human and Social Sciences. 46, 322–328.

[3] Babeș-Bolyai University, Cojocnean, D., 2019. A Textual Analysis of Students' Business Writing Tasks in a Romanian University Setting. Journal of Linguistic and Intercultural Education. 12, 29–42. DOI: https://doi.org/10.29302/jolie.2019.12.2.2

[4] Benson, S., Coxhead, A., 2022. Technical Single and Multiword Unit Vocabulary in Spoken Rugby Discourse. English for Specific Purposes. 66, 111–130. DOI: https://doi.org/10.1016/j.esp.2022.02.001

[5] Charteris-Black, J., 2000. Metaphor and Vocabulary Teaching in ESP Economics. English for Specific Purposes. 19(2), 149–165. DOI: https://doi.org/10.1016/S0889-4906(98)00025-8

[6] Clouet, R., García-Sánchez, S., Fidalgo-González, L., 2022. Developing Intercultural Competence and Intelligence in the ESP Classroom: Challenges in Higher Education. In: García-Sánchez, S., Clouet, R. (eds.). Advances in Educational Technologies and Instructional Design. IGI Global: Hershey, PA, USA. pp. 128–145. DOI: https://doi.org/10.4018/978-1-7998-8852-9.ch007

[7] Cortés De Los Ríos, M.E., Sánchez Pérez, M.M., 2017. Developing Business English Students' Metaphorical Competence in Foreign Language Learning Higher Education Contexts. ES Review. Spanish Journal of English Studies. 38, 113–138. DOI: https://doi.org/10.24197/ersjes.38.2017.113-138

[8] Costeleanu, M., 2019. The Role Of Vocabulary In Esp Teaching. In Proceedings of the 8th International

Conference Edu World 2018 "Education Facing Contemporary World Issues" (EDU WORLD 2018), Pilesti, Romania, (09–10 November 2018); pp. 996–1002. DOI: https://doi.org/10.15405/epsbs.2019.08.03.120

[9] Coxhead, A., 2022. Corpora for Teaching and Learning Vocabulary in ESP. In: Jablonkai, R.R., Csomay, E. (eds.). The Routledge Handbook of Corpora and English Language Teaching and Learning, 1st ed. Routledge: London, UK. pp. 193–205. DOI: https://doi.org/10.4324/9781003002901-16

[10] Cubillo, M.C.C., 2002. Dictionary Use and Dictionary Needs of ESP Students: An Experimental Approach. International Journal of Lexicography. 15(3), 206–228. DOI: https://doi.org/10.1093/ijl/15.3.206

[11] Dang, T.N.Y., 2022. Vocabulary in Academic Lectures. Journal of English for Academic Purposes. 58, 101123. DOI: https://doi.org/10.1016/j.jeap.2022.101123

[12] Dodigovic, M., Agustín-Llach, M.P. (eds.), 2020. Vocabulary in Curriculum Planning: Needs, Strategies and Tools. Springer International Publishing: Cham, Switzerland. DOI: https://doi.org/10.1007/978-3-030-48663-1

[13] Emock Bakelak, J.G., Reyes Rodríguez, A.D., 2022. Bibliometric Analysis in English Language Teaching and Learning. PODIUM. 41, 119–140. DOI: https://doi.org/10.31095/podium.2022.41.8

[14] Farhady, H., Tavassoli, K., Haghighi Irani, F., 2018. Selecting Corpus-Based Grammatical Structures for ESP/EAP Materials. In: Kırkgöz, Y., Dikilitaş, K. (eds.). Key Issues in English for Specific Purposes in Higher Education. Springer International Publishing: Cham, Switzerland. pp. 77–92. DOI: https://doi.org/10.1007/978-3-319-70214-8_5

[15] Farooqui, A., Sonbul, S., Al Zahrani, S., et al., 2022. Exemplar-Based Genre Instruction: The Case of Medical Professional Writing. Writing and Pedagogy. 14(1), 73–102. DOI: https://doi.org/10.1558/wap.20649

[16] García-Sánchez, S., 2019a. English Public Speaking: Presentations for English for Specific Purposes. The International Journal of Literacies. 26(2), 35–51. DOI: https://doi.org/10.18848/2327-0136/CGP/v26i02/35-51

[17] Ghafar, Z.N., Amin, M.Y.M., 2022. Difficulties in Speaking English among the EFL Students in Iraqi Kurdistan Region. World Journal of English Language. 12(6), 286. DOI: https://doi.org/10.5430/wjel.v12n6p286

[18] Goksu, I., 2021. Bibliometric Mapping of Mobile Learning. Telematics and Informatics. 56, 101491. DOI: https://doi.org/10.1016/j.tele.2020.101491

[19] Grabowski, Ł., 2015. Towards Teaching English for Pharmaceutical Purposes: An Attempt at a Description of Key Vocabulary and Phraseology in Clinical Trial Protocols and European Public Assessment Reports. In: Piasecka, L., Adams-Tukiendorf, M., Wilk, P. (eds.). New Media and Perennial Problems in Foreign Language Learning and Teaching. Springer International Publishing: Cham, Switzerland. pp. 209–228. DOI: https://doi.org/10.1007/978-3-319-07686-7_12

[20] Gu, H., Bo, H., Ren, L., 2019. Developing ESP Teaching Materials Based on the Analysis of Information Engineering Majors' Needs. Open Journal of Social Sciences. 7(10), 121–131. DOI: https://doi.org/10.4236/jss.2019.710011

[21] Hanks, E., Hashimoto, B., Egbert, J., 2024. The Contracts Word List: Integral Vocabulary for Reading and Writing English Contracts. English for Specific Purposes. 75, 37–48. DOI: https://doi.org/10.1016/j.esp.2024.03.002

[22] Höl, D., Akman, E., 2023. A Bibliometric Analysis on "E-Assessment in Teaching English as a Foreign Language" Publications in Web of Science (WoS). In: Köksal, D., Kavaklı Ulutaş, N., Arslan, S. (eds.). Advances in Educational Technologies and Instructional Design. IGI Global: Hershey, PA, USA. pp. 329–355. DOI: https://doi.org/10.4018/978-1-6684-5660-6.ch016

[23] Hudson, T., 1991. A Content Comprehension Approach to Reading English for Science and Technology. TESOL Quarterly. 25(1), 77. DOI: https://doi.org/10.2307/3587029

[24] Hyland, W.E., Hoff, K.A., Rounds, J., 2022. Interest–Ability Profiles: An Integrative Approach to Knowledge Acquisition. Journal of Intelligence. 10(3), 43. DOI: https://doi.org/10.3390/jintelligence10030043

[25] Ibrahim, H.H., 2019. The Role of an Ideal ESP Practitioner. Open Journal of Modern Linguistics. 9(2), 76–91. DOI: https://doi.org/10.4236/ojml.2019.92008

[26] Jalal, S.K., 2019. Co-Authorship and Co-Occurrences Analysis Using BibliometrixR Package: A Case Study of India and Bangladesh. Annals of Library and Information Studies (ALIS). 66(2), 57–64.

[27] John, P., Brooks, B., Schriever, U., 2017. Profiling Maritime Communication by Non-Native Speakers:

A Quantitative Comparison between the Baseline and Standard Marine Communication Phraseology. English for Specific Purposes. 47, 1–14. DOI: https://doi.org/10.1016/j.esp.2017.03.002

[28] Kannazarova, Z., Juliev, M., Muratov, A., et al., 2024. Groundwater in the Commonwealth of Independent States: A Bibliometric Analysis of Scopus-Based Papers from 1972 to 2023, Emphasizing the Significance of Drainage. Groundwater for Sustainable Development. 25, 101083. DOI: https://doi.org/10.1016/j.gsd.2024.101083

[29] Liu, C.Y., 2023. Are TED Talks Potential Materials for Learning Specialized Vocabulary? A Case of Medical Vocabulary. English Teaching & Learning. 47(1), 97–118. DOI: https://doi.org/10.1007/s42321-021-00105-2

[30] Liu, D., Lei, L., 2019. Technical Vocabulary. In: Webb, S. (ed.). The Routledge handbook of Vocabulary Studies. Routledge: London, UK. pp. 111–124.

[31] Liu, Y., Hu, G., 2021. Mapping the Field of English for Specific Purposes (1980–2018): A Co-Citation Analysis. English for Specific Purposes. 61, 97–116. DOI: https://doi.org/10.1016/j.esp.2020.10.003

[32] Marculescu, C., 2019. Language and Safety: The Benefits of Using Audio Visual Aids in Teaching Aviation English. Conference proceedings of »eLearning and Software for Education« (eLSE). 15(2), 411–421. DOI: https://doi.org/10.12753/2066-026X-19-127

[33] Michelakis, P., 2019. Naming the Plague in Homer, Sophocles, and Thucydides. American Journal of Philology. 140(3), 381–414. DOI: https://doi.org/10.1353/ajp.2019.0025

[34] Moniza Ray S., Ajit, I., 2024. Digital Game-Based Language Learning: The Impact of Story-Driven Game Life Is Strange 1 on Language Learners' Listening Skills. Journal of Language Teaching and Research. 15(2), 448–457. DOI: https://doi.org/10.17507/jltr.1502.13

[35] Mudraya, O., 2006. Engineering English: A Lexical Frequency Instructional Model. English for Specific Purposes. 25(2), 235–256. DOI: https://doi.org/10.1016/j.esp.2005.05.002

[36] Nur Fitria, T., 2023. Teaching English for Specific Purposes (ESP): Teachers' Role and Their Challenges. PRIMACY Journal of English Education and Literacy. 2(1), 54–70.

[37] Otto, P., 2021. Choosing Specialized Vocabulary to Teach with Data-Driven Learning: An Example from Civil Engineering. English for Specific Purposes. 61, 32–46. DOI: https://doi.org/10.1016/j.esp.2020.08.003

[38] Paradowski, M.B., 2018. What's Cooking in English Culinary Texts? Insights from Genre Corpora for Cookbook and Menu Writers and Translators. The Translator. 24(1), 50–69. DOI: https://doi.org/10.1080/13556509.2016.1271735

[39] Perumal, K., Ajit, I., 2022. A Descriptive Study on the Effect of Blogs on Writing Skill Development Using Social Constructivism as a Theory. Theory and Practice in Language Studies. 12(8), 1537–1544. DOI: https://doi.org/10.17507/tpls.1208.09

[40] Rafiq, K.R.M., Hashim, H., Yunus, M.M., 2021. Sustaining Education with Mobile Learning for English for Specific Purposes (ESP): A Systematic Review (2012–2021). Sustainability. 13(17), 9768. DOI: https://doi.org/10.3390/su13179768

[41] Rahman, S.U., Faisal, F., Ali, A., 2023. Financial Development and Shadow Economy: A Bibliometric Analysis Using the Scopus Database (1985–2021). Journal of the Knowledge Economy. 14(3), 2238–2265. DOI: https://doi.org/10.1007/s13132-022-00980-5

[42] Rajab Esfandiari, Hezari, M., 2019. The Comparative Effect of Dictionary Use, Etymological Analysis, and Glossing on Iranian ESP Learners' Vocabulary Learning. Taiwan International ESP Journal. 10(1), 45–63. DOI: https://doi.org/10.6706/TIESPJ.201904_10(1).0003

[43] Ramesh, M., Ajit, I., n.d. ENHANCEMENT OF LEGAL WRITING AND ADVOCACY SKILLS THROUGH ESP FOR LAW STUDENTS. Man In India. 96(4), 1209–1218.

[44] Schmitt, N., Schmitt, D., 2020. Vocabulary in Language Teaching, 2nd ed. Cambridge University Press: Cambridge, UK. DOI: https://doi.org/10.1017/9781108569057

[45] Shanavas, S.P., Singh, S., Vargheese, K.J., 2024. Teaching English for Specific Purposes in Tertiary Contexts: Navigating Education and Assessment Challenges. Changing English. 31(2), 188–199. DOI: https://doi.org/10.1080/1358684X.2024.2309992

[46] Su, W., 2021. How to Use Modern Teaching Methods to Cultivate Students' Autonomous Learning Ability. Open Access Library Journal. 8(3), 1–5. DOI: https://doi.org/10.4236/oalib.1107232

[47] Sutarsyah, C., Nation, P., Kennedy, G., 1994. How Useful Is Eap Vocabulary for Esp? A Corpus Based Case Study. RELC Journal. 25(2), 34–50. DOI: https://doi.org/10.1177/003368829402500203

[48] Synekop, O., Lavrysh, Y., Lytovchenko, I., et al.,

2023. Use of Games in ESP Classes: Perceptions from Students and Teachers. International Journal of Emerging Technologies in Learning (iJET). 18(16), 74–86. DOI: https://doi.org/10.3991/ijet.v18i16.41275

[49] Tan, S., Harji, M.B., Hu, 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. DOI: https://doi.org/10.17323/jle.2023.17632

[50] Tangpijaikul, M., 2014. Preparing Business Vocabulary for the ESP Classroom. RELC Journal. 45(1), 51–65. DOI: https://doi.org/10.1177/0033688214522641

[51] Thawarom, T., Singhasiri, W., 2020. Lexical Richness of One-Minute Speaking Task by Science and Technology University Students. The Journal of AsiaTEFL. 17(1), 70–86. DOI: https://doi.org/10.18823/asiatefl.2020.17.1.5.70

[52] Wang, Z., Sun, H., Yang, L., 2023. A Bibliometric Analysis of Research on Historical Buildings and Digitization. Buildings. 13(7), 1607. DOI: https://doi.org/10.3390/buildings13071607

[53] Warchoł, A., 2020. Teaching English Pronunciation to ESP Learners: Basic Views and Recommendations. Roczniki Humanistyczne. 68(10), 155–165. DOI: https://doi.org/10.18290/rh206810-12

[54] Xaliqulov, M., Kannazarova, Z., Norchayev, D., et al., 2023. Root Harvester Machine: A Review of Papers from the Scopus Database Published in English for the Period of 1982-2022. E3S Web of Conferences. 402, 10010. DOI: https://doi.org/10.1051/e3sconf/202340210010

[55] Yu, B., 2021. Application of Corpus-Based Text Statistics Analyzer in Sports English. Journal of Physics: Conference Series. 1744(4), 042166. DOI: https://doi.org/10.1088/1742-6596/1744/4/042166

[56] Yu, D., Yao, K., Su, H., et al., 2013. KL-Divergence Regularized Deep Neural Network Adaptation for Improved Large Vocabulary Speech Recognition. In Proceedings of the 2013 IEEE International Conference on Acoustics, Speech and Signal Processing; Vancouver, BC, Canada; 26–31 May 2013; pp. 7893–7897. DOI: https://doi.org/10.1109/ICASSP.2013.6639201

[57] Zhang, X., 2020. A bibliometric analysis of second language acquisition between 1997 and 2018. Studies in Second Language Acquisition. 42(1), 199–222. DOI: https://doi.org/10.1017/S0272263119000573

[58] Zhang, Y.M., 2020. ESP Course Construction and Learning Behavior Analysis. In Proceedings of the 2020 International Conference on Artificial Intelligence and Education (ICAIE); Tianjin, China; 26-28 June 2020; pp. 233–236. DOI: https://doi.org/10.1109/ICAIE50891.2020.00061

[59] Zhang, Y.-M. 2020. 'ESP Course Construction and Learning Behavior Analysis'. In 2020 International Conference on Artificial Intelligence and Education (ICAIE), 233–36. Tianjin, China: IEEE. https://doi.org/10.1109/ICAIE50891.2020.00061.