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Teaching ESP Vocabulary with the Application of Corpus-Based Materials at Universities: A Rapid Review of Literature

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Abstract
This rapid review of the literature examines the effectiveness of ESP vocabulary teaching, with a focus on the application of corpus-based materials. This review aims to critically analyse recent studies on the corpus method while teaching ESP vocabulary at universities. The review also highlights the challenges associated with corpus-based materials in ESP vocabulary teaching and their perceptions among ESP students. We searched six research databases, generating 136 studies. During the evaluation process, studies not written in English, published before 2010, lacking evidence-based support, non-peer-reviewed, without abstracts, and not focused on ESP vocabulary, corpus-based approaches, or university education were excluded. Forty-five articles were included after full-text screening; we subsequently coded them according to the data they presented. The overall evidence from this rapid literature review suggests that corpora can be beneficial for many learners across various contexts. When used thoughtfully and appropriately, they become a valuable resource for both ESP teachers and students. More specific results from our research show that a corpus-based approach to ESP teaching improves linguistic skills by supplying comprehensive data on authentic vocabulary and syntax patterns, enabling insights into frequency, connotations, nuanced meaning differences, and proper collocations. The research also shows that utilizing available resources and seeking guidance from experts can help overcome challenges connected with corpus-based materials. As this is the first rapid review in the field of corpus-based ESP vocabulary learning at universities, its findings offer valuable insights for shaping effective academic policies across diverse ESP disciplines.
Keywords: authentic materials, corpus, corpus-based materials, ESP, rapid review, teaching, vocabulary

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Introduction

The majority of students studying English in higher education are enrolled in fields other than English itself, such as economics, medicine, engineering, science, or interdisciplinary areas like specialized terminology and translation. Enhancing the relevance of tertiary courses in English for Specific and/or Academic Purposes (ESP/EAP) to meet the professional needs of these students—particularly in mastering the specialized vocabulary pertinent to their disciplines—can be significantly improved through a corpus approach (Jitpainboon & Rungswang, 2022). The corpus approach offers an empirically grounded understanding of the discourse and language used within specific professional contexts, thereby equipping students with greater independence in performing their professional tasks (Boulton et al., 2012).

The widespread use of corpora has been monitored for research purposes in areas such as lexicography within specialized registers and materials (Flowerdew, 2005; Jaafar, 2022; Martínez, Beck, & Panza, 2009), as well as in pedagogical approaches to ESP courses, which involve students' engagement in the learning process. Yet, before 2010, ESP, in this regard, resembled English as a Foreign Language (EFL), as both faced a recurring theme in the studies: a lack of effective integration between corpus research and teaching practice in EFL and Second Language Acquisition (SLA) (Aijmer, 2009; Sutarsyah et al., 1994).

Recently, the outlook seems more promising at the graduate and postgraduate levels. Since English has become the primary language of research publication across many academic fields, numerous studies employing corpus-based methods for the needs of ESP vocabulary learning have been conducted in recent years (Coxhead, 2025; Curry, N., McEnery, 2025; Flowerdew, 2015; Huang & Wang, 2023; Ryan, G., 2012; Vyatkina & Boulton, 2017). The emphasis is placed on exploring effective ways to integrate ESP vocabulary teaching and corpus technologies, proposing new models of corpus-based vocabulary teaching for professionals (Charles, 2013; Huang & Wang, 2023; Römer, 2011).

Literature Review

Corpus linguistics has also had an indirect impact on the development of ESP teaching materials (Chen & Liu, 2020; Lelakova & Lackova, 2015), integrating specialized corpora into university courses for non-native English speakers. Within the curriculum design context, scholars strive to develop ESP vocabulary lists (Hsiao-I, 2014; Lei, Liu, 2016; Muñoz, 2015; Tongpoon-Patanasorn, 2017). The reason is that the vocabulary varies significantly across individual disciplines in terms of meaning, frequency, range, and collocation. Laosrirattanachai & Ruangjaroon (2021) highlight that one of the primary benefits of the created word lists is that they prepare learners for their future careers, as the corpora used to develop these lists are mainly derived from authentic sources like websites. In contrast to other constructed word lists, which often rely on textbooks or research articles, these lists are more reflective of actual language usage in the real world. The scholars have advocated for the application of these lists in teaching ESP vocabulary, both in class and autonomously as supplementary material (Laosrirattanachai & Ruangjaroon, 2021).

Considering the elaboration of ESP word lists, Tangpijaikul (2014) combined intuition-based and corpus-based approaches in developing a list of ESP words from the field of business; the researcher suggests that future research should aim to explore the most effective methods for teaching these words within the ESP classroom, including ways to raise students' awareness of

their collocational patterns. Additionally, studies should investigate which teaching strategies best support learners in retaining these words in their long-term memory.

Gardner, D., & Davies, M. (2014) introduced a new approach to creating corpus-based vocabulary academic lists. The crucial point is that lemmas, rather than word families, are used to generate the initial counts and analyses. Subsequently, word families are created from these lemmas to fulfill specific academic requirements.

In our research sample, we encountered corpus-based elaboration of ESP vocabulary from the following scientific disciplines: education, humanities, history, social science, medicine and health, economics and finance, law and political science, agriculture, chemistry, theology, automobile industry, tourism, hotel and airline business, philosophy, religion, psychology, and psychiatry.

Furthermore, some studies typically use corpora to examine attributes of lexis connected with various ESP disciplines. Examples include a corpus-based analysis of a word's collocational patterns, which reveal its multiple meanings or uses and determine if it carries any negative connotations or associated prosody. This information is highly valuable to lexicographers, materials developers, ESP teachers, and ESP learners (Walker, 2011). It has also been proven that specialised corpora exhibit a higher frequency of content words (Hsiao-I, 2014).

Based on the preceding literature review and in concord with Jitpainboon and Rungswang (2022, p.147), who claim that "the pedagogical application of corpus linguistics in the ESP domain appears to be underresearched", there are no existing rapid reviews examining the effectiveness of corpus-based materials for teaching ESP vocabulary at the tertiary level. The available systematic papers do not focus on the impact of corpus-based materials on the development of ESP vocabulary; instead, they systematically analyse teaching ESP vocabulary in accordance with the guidelines set by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA). Additionally, these reviews do not explore the effectiveness of corpus-based approaches within the context of teaching ESP vocabulary in higher education.

Thus, this review seeks to address this gap by investigating the effectiveness of corpus-based approaches in teaching ESP vocabulary at universities. It aims to contribute to the existing literature by providing empirical insights into how corpus-based materials can enhance ESP learning outcomes among university students. Ultimately, this review will offer core recommendations to improve the design and implementation practices of corpus linguistics courses in English education, thereby promoting improved learning outcomes in the higher education context.

The paper employs the rapid review approach to examine and subsequently synthesize findings about the application of corpus-based materials for ESP vocabulary development needs at universities. The review aims to achieve this by addressing the following research questions:

1. How can corpus-based materials enhance ESP vocabulary teaching, learning, and assessment?
2. What are the students' perceptions and opinions regarding the teaching, learning, and assessment of ESP vocabulary using corpus-based materials?
3. What are the challenges associated with corpus-based materials in terms of ESP vocabulary teaching, learning, and assessment?

Methodology

Inclusion and exclusion criteria

Research databases searched included Web of Science, Scopus, Google Scholar, ProQuest, ScienceDirect, and ERIC to ensure the credibility and scientific value of the articles under review. The search strings *"ESP and teaching", "ESP and corpus", "ESP vocabulary and corpus", and "ESP and university" were used in each of the databases* as mentioned above to search applicable articles. A total of 136 peer-reviewed articles with a publication period since 2010 were selected for the needs of this rapid literature review. Articles that are non-academic in nature, such as those published on mainstream and social media platforms, blog posts from personal or institutional websites, and review articles from technology magazines on corpora, were excluded. Articles related to corpora in other than ESP teaching and learning used as general background references were also excluded from this rapid literature review. For more details on the inclusion and exclusion criteria, refer to Table 1 below.

Table 1. *Exclusion criteria and inclusion criteria*

Inclusion criteria	Exclusion criteria
published since 2010	published before 2010
peer-reviewed journal articles	non-peer-reviewed journal articles
conference papers	non-conference papers
evidence-based articles	non-evidence-based articles
written in English	non-written in English
articles with abstract	articles without an abstract
articles on ESP teaching and learning	articles op on other than ESP teaching and learning
articles on corpus-based approaches	articles on other than corpus-based approaches
articles reporting on specific outcomes	articles reporting on general outcomes
articles relying on peer-reviewed sources	articles relying on non-peer-reviewed sources

This rapid review was conducted in accordance with the Preferred Reporting Items for Systematic Review and Meta-Analysis (PRISMA) 2020 statement elaborated by Page et al. (2021). The PRISMA chart below illustrates the number of articles available from the databases. It demonstrates the number of records identified in the databases through the screening procedure, up to the number of studies included in the rapid review process. Eventually, a simple quantitative count was conducted to support each subject matter.

The raw data were manually analyzed and subsequently interpreted using both deductive and inductive analysis approaches. During the preparatory phase of the review process, the raw data were outlined and summarized into concise formats. A coding scheme was applied to categorize data that shared similar types of information. In the description phase, the key features and characteristics of the categories derived from the coding were detailed, and links between the data and the original research questions were established. In the final stage of interpretation, the relationships, similarities, and contradictions among and between the coded categories were analyzed.

The findings and conclusions from the reviewed articles – raw data – were manually analysed following the subsequent procedure: first, the raw data were coded using a Microsoft Word document; next, the codes were organized and refined to maintain consistency throughout the process; finally, a thematic framework was developed based on the generated codes. To enhance the reliability and validity of the analysis, a second coder was engaged. The second coder was briefed on the study's purpose, methodology, research questions, and coding scheme.

Additionally, a calibration session was held to align the coding approach and ensure consistent analysis of the raw data.

Table 2 *Results of the search/selection process*

Identification						
Titles/abstracts /key words from Web of Science (n=21)	Titles/abstracts /key words from Scopus (n=29)	Titles/abstracts /key words from Google Scholar (n=34)	Titles/abstracts /key words from ProQuest (n=24)	Titles/abstracts /key words from Science Direct (n=19)	Titles/abstracts /key words from ERIC (n=9)	Total retrieved (n=136)
↓						
Screening						
Duplicates removed (n=12) Articles after duplication removed (n=124)		Articles meeting the inclusion criteria (n=95) Articles not meeting the inclusion criteria (n=29)		Total screened (n=124) Total after screening (n=95)		
↓						
Eligibility						
Full articles meeting the inclusion criteria (n=74) Full articles not meeting the inclusion criteria (n=21)			Full articles on the topic of the rapid review (n=45) Full articles not meeting the inclusion criteria (n=29)			
↓						
Included						
Articles included in the rapid review (n=45)						

Findings

RQ 1: How can corpus-based materials enhance ESP vocabulary teaching, learning, and assessment?

The subsequent part discusses how corpus-based materials can support and enhance ESP vocabulary teaching, learning, and assessment. All the researchers agree on these two points: firstly, language corpora provide access to extensive databanks that include authentic spoken and written discourse; secondly, with the assistance of relatively accessible concordancing software (Chen, & Ge, 2007; Kamasa, 2014), ESP practitioners can compile and analyse specialized corpora, examine the distribution of particular grammatical and lexical features, and even compare expert and learner texts (Belcher, 2012; Lesiak-Bielawska, 2015; Leláková & Toman, 2023).

The research confirmed that the introduction of corpus-based materials enhanced and innovated communication with students, fostering new types of interaction and providing valuable feedback (Durovič & Bauk, 2022). Similarly, it is claimed that such materials have the capacity to give a clearer insight into the vocabulary selected by students, offering teachers valuable feedback to identify gaps and other difficulties in vocabulary learning and instruction (Fraser et al., 2025).

Moreover, corpus-based materials employed promote independent work and encourage students' autonomy, which are exceptionally vital for their future careers, lifelong learning, and professional growth. Additionally, the materials address challenges arising from the varied language learning strategies preferred by individual students (Durović, 2021).

Some scholars go even further and argue that corpora and corpus-based learning are even more valuable and pertinent in the ESP context (more broadly within Languages for Specific Purposes (LSP) than in EFL, considering the distinctive features of ESP itself (Boulton et al.,

2012). The first feature describes a typical ESP learner who favors learner-centered, individualized, and autonomous learning approaches, including techniques such as hypothesis development, an inductive, problem-solving approach. The methods are more successful with adult learners, specifically ESP learners at universities. The second feature concerns the lexico-grammatical structure of ESP registers. The registers differ from general English through their selective use of particular structures, their frequent reliance on domain-specific phrasing, and the rapid pace of changes in ESP terminology to keep up with ongoing technical and professional developments. In the given context, corpora are indispensable for acquiring contextual information about the most recent ESP terminology, as compared to traditional textbooks and dictionaries (Boulton et al., 2012).

When discussing the development of individual language skills with the help of corpus-based materials, scholars do not have a unified opinion. It is claimed that these materials contribute to the enhancement of productive language knowledge, including vocabulary skills (Boulton et al., 2012), within the majority of reviewed studies (62%). Yet, offering only the core vocabulary lists as supplementary material is insufficient; emphasis should be placed on developing learners' reading skills (Hsiao-I, 2014). Alternatively, in (58%) of the investigated studies, it is asserted that they support the development of passive skills, reading and listening comprehension. Yet, such materials do not directly contribute to active skills, L1/L2 translation, speaking, and writing. Even these scholars emphasize that the utilization of authentic language in the ESP context is invaluable (Rudneva et al., 2019).

Considering the skill of writing, students are encouraged to explore various aspects of the language and to compare their own ESP writing with that of more experienced writers in their professional areas (Hundarenko, 2019). These studies demonstrate that using the corpus data can be highly effective in the classroom for increasing students' awareness (Flowerdew, 2009). However, some form of systematic guidance or mediation is often necessary to help learners interpret the data successfully.

Furthermore, the corpus approach offers a valuable opportunity to examine the concordances of specific terms within the corpus (Durović, 2021), as they include authentic examples of how the terms are used within phrases and sentences, which can be easily accessed using the same program. It is agreed that investigating concordances in context, along with information on their frequencies, stimulates the development of professional language (Rudneva et al., 2019). Moreover, for ESP learners, the process of disambiguating near-synonymous ESP words involves inferring information from specialized linguistic contexts. This approach enhances understanding, boosts engagement, and encourages motivation through self-discovery (Gavioli, 2005).

Ultimately, research indicates that language learners can gain advantages through a discovery-based learning approach, in which they actively build and utilize their own specialized corpora and vocabulary collections in the ESP context (Smith, 2020). Certain corpus-based materials can be developed in a way that promotes even learners' creativity in ESP learning (Niu & Dhamotharan, 2020).

RQ 2: What are the students´ perceptions and opinions regarding the teaching, learning, and assessment of ESP vocabulary with the help of corpus-based materials?

Much of the reviewed research has focused on learners’ receptivity to corpus-based materials for ESP needs, typically collected through interviews or questionnaires. Their results indicate that students exhibit an increased understanding of the interdisciplinary bonds between

ESP and disciplinary specialists (Lei & Liu, 2016). Simultaneously, they become aware of the increased differences in register, recognizing which lexical forms and discourse conventions are suitable in a given context.

The results of exploratory research studies indicate that students reported improvements in their writing skills, including ESP vocabulary, syntactic structure, and overall content. Additionally, their confidence in writing and their awareness of linguistic aspects were also heightened (Hundarenko, 2021; Tsai, 2021).

Students appreciate corpus-based materials as alternative methods of ESP vocabulary learning (compared to the traditional ones), together with their usefulness and efficiency (Durovič & Bauk, 2022). Students' autonomy and individual effort should be particularly emphasized in this process. The corpus approach enables students to complete at least a portion of their assignments independently, organizing their work and progressing at their own pace, while adhering to established deadlines.

On the other hand, findings of 75% of the reviewed studies indicate that many students feel uncertainty, and only under the supervision of the teacher can they learn ESP vocabulary more comprehensively and profoundly (Huang & Wang, 2023). The most negative students´ reactions are associated with more demanding and complex homework assignments that require additional time (Durovič & Bauk, 2022).

We also gathered students' opinions on the most effective way to organize future ESP vocabulary classes. The majority (66.5%) favoured a combined approach, integrating traditional textbook-based methods with the corpus method (Durovič & Bauk, 2022). In the given context, their abilities to summarize and analyse have been developed together with a strengthened learning initiative.

When discussing specific types of activities, students find motivating interactive exercises that can be designed using corpus analysis findings. For example, creating gap-fill activities helps them practice specific vocabulary areas, such as adjectives, verb tenses, and prepositions. Additionally, exercises can prompt ESP students to examine a particular discourse by identifying grammatical features and usage patterns of key vocabulary and phrases within a given corpus (Hsiao-I, 2014).

RQ 3: What are the challenges associated with corpus-based materials in terms of ESP vocabulary teaching, learning, and assessment?

The following section discusses the challenges directly related to the application of corpus-based materials in ESP vocabulary teaching.

Limited accessibility and resources are the primary problems that ESP teachers and learners face. Corpus-based materials often require special equipment, specialized software, and technical expertise, which may not be available to them. These can hinder the integration of corpus data into ESP vocabulary instruction. However, these challenges can be addressed by utilizing free online corpora and other user-friendly tools that learners can access through their mobile devices (Kern, 2013; Jaafar, 2022).

The thin line between the authenticity of corpus-based materials and their pedagogical relevance requires careful consideration as well. While corpora provide genuine language examples, selecting vocabulary that aligns with specific ESP contexts can be challenging. In the given context, teachers should ensure that corpus-derived vocabulary is both authentic and relevant to learners' professional needs (Durovič & Bauk, 2022).

The complexity of data analysis may represent another challenge, as interpreting corpus data involves understanding frequency patterns, the relationships between words revealed through collocational networks, and contextual usage. Learners and teachers may find it challenging to analyse and apply this information effectively, especially without prior training. Yet, the findings of Jaafar (2022) advocate that educators can effectively engage ESP students with the target language by utilizing corpus tools, which can help identify aspects that might be overlooked through manual analysis alone.

Integrating corpus-based methods into both teaching and testing is essential (Paker & Özcan, 2017). Yet, assessment difficulties may arise since designing assessments based on corpus data can be complex. Traditional testing methods may not effectively measure learners' ability to utilize corpus-derived vocabulary in authentic contexts, necessitating the development of innovative evaluation techniques.

Another focus of challenges in the given context has been on learner variability, which means that learners' familiarity with corpus tools and their analytical skills vary widely. This variability can impact the effectiveness of corpus-based vocabulary instruction and may require additional training and support. Granger (2009) contends that a thorough analysis of learner corpora is crucial for developing effective corpus-informed pedagogical materials tailored to ESP.

Bringing corpus-based findings into university ESP classes is understood by scholars as an essential task (Quero & Coxhead, 2018). Yet, incorporating corpus-based approaches into existing ESP courses/curriculum demands curriculum redesign and instructor training, which can be resource-intensive and time-consuming. Under these circumstances, maintaining up-to-date corpus materials that reflect current terminology and usage patterns is an ongoing challenge, as language use in specific fields evolves (Grosse & Voght, 2012; Handzilevska et al., 2023).

Using everyday words with specialized meanings can pose challenges for ESP teachers, as learners may struggle to grasp the new, context-specific definitions and concepts associated with words they already recognize in their general vocabulary (Coxhead, 2013). The key point is that this teacher's students have a well-established understanding of the everyday meaning of the word. In their university studies, these everyday words often acquire specialized meanings, transforming them into technical terms. This new, technical understanding requires students to develop knowledge of both the word's concept and its specific meaning within the scientific context. To facilitate this learning, teachers might employ various corpus-based techniques. After that, teachers might explore students' misconceptions about certain words by asking for their opinions on the meanings, identifying any misunderstandings, and then providing the scientific perspective and corpus-based context.

The results of studies based on the direct application of corpus-based materials for ESP students indicate that incomplete sentences with key words from the concordance output may pose a challenge for students. Moreover, the extensive number of concordances can seem overwhelming to non-linguistic students who are not familiar with inductive learning procedures (Rudneva et al., 2019).

Eventually, students frequently find it challenging to interpret corpus data, especially when analysing the more intricate phraseological elements of English. However, we can address these issues through careful design of teaching materials and assignments. As an example, a form of mediation is advocated within the reviewed studies when ESP students are prompted with a worksheet to notice specific linguistic features, to formulate rules, and consequently discuss in pairs or groups their findings.

Stoller and Robinson (2018) suggest the following procedure as a form of transition from general English to the language of the area they study. The first step is to recognize the key genres valued within the target disciplines; , then to analyse these genres to identify their distinctive linguistic, non-linguistic, and organizational features; after that, to select authentic texts that are relevant and accessible to students in terms of disciplinary content; and to design scaffolded instructional materials that initially help students develop observational skills, followed by more advanced tasks such as detailed analysis and writing exercises.

Another quest is connected to the acquisition of ESP vocabulary over time. We start from the premise that incorporating corpus-based data into material development and classroom activities can enhance learners' understanding of target texts in a second language (Gavioli, 2005). While the presentation of professional terminology through extensive bilingual lists may appear advantageous in the short term, it tends to be less effective over the long term due to difficulties in contextualizing the target vocabulary (Rudneva et al., 2019).

In summary, while corpus-based materials offer valuable insights into authentic vocabulary use in ESP, addressing these challenges is essential to maximize their effectiveness in teaching, learning, and assessment. As a way of example, (Hsiao-I, 2014) concludes that teachers assume two key roles in the process: firstly, as facilitators who are responsible for identifying and providing authentic, valuable resources that align with students' needs and learning objectives; and secondly, as guides who help students independently recognize language patterns and behaviors of words and phrases, fostering their development as language researchers. Additionally, teachers should focus on instructing specialized vocabulary relevant to students' subject areas. This goal can be achieved by supporting learners in developing general skills such as recognizing specialized words, interpreting definitions, connecting meanings to core concepts, and understanding word parts. By equipping students with effective vocabulary strategies, teachers can avoid directly teaching specific content areas and instead focus on guiding students to manage specialized vocabulary independently.

The integration of corpus approaches into ESP has brought about various legal and ethical challenges for educators (Bloch, 2013). A particularly contentious ethical issue concerns the use and distribution of intellectual property, as well as shifting attitudes toward plagiarism. Developing simple corpora for classroom use can also involve legal and financial considerations that ESP teachers may find challenging to navigate. The rights and restrictions related to intellectual property are typically governed by a combination of local and international laws and regulations. Nonetheless, these concerns impact teachers and students to differing degrees, especially within the context of an increasingly globalized society. Given that the definition of plagiarism varies across different settings, ESP teachers must be aware of these differences and learn how to incorporate an understanding of intellectual property rights into their teaching, ensuring ESP students are informed about the appropriate ways to use such resources.

Discussion

One of the most evident practical applications of corpus linguistic description is in language learning and teaching, particularly within the realm of English for Specific Purposes (ESP). ESP learners investigate opportunities provided by accessible language corpora; at the same time, corpora represent a challenge for ESP students. These aspects were the focus of this study, which conducted a systematic rapid review of the literature, examining peer-reviewed academic articles published between 2010 and 2025. It aimed to explore how corpus-based materials are employed

in ESP English language teaching, learning, and assessment, as well as the challenges associated with utilizing such materials in this area.

Regarding the research questions, the investigated studies supported various aspects of teaching ESP vocabulary with the application of corpus-based materials at universities.

RQ 1: How can corpus-based materials enhance ESP vocabulary teaching, learning, and assessment?

When speaking about RQ1, it was supported by majority of the studies reviewed; the authors believe that ESP vocabulary teaching, learning, and assessment can be enhanced with the utilization of corpus-based materials; this claim is in alignment with the research conducted on the effectiveness of such materials in the teaching process at universities (Aijmer, 2009; Flowerdew, 2005; Hundarenko, 2019).

The rapid review suggests that the future of corpus-based activities looks promising, offering ESP learners access to real-world contexts. As technology advances, corpus tools are expected to become more user-friendly, further enriching the ESP learning environment (Kern, 2013).

RQ 2: What are the students´ perceptions and opinions regarding the teaching, learning, and assessment of ESP vocabulary with the help of corpus-based materials?

Regarding RQ2, it must be acknowledged that the studies present a range of opinions on the application of corpus-based materials when working with ESP vocabulary.

Positively appreciated are mainly the increased perception of interdisciplinary bonds together with increased register awareness (Lei & Liu, 2016; Niu & Dhamotharan, 2020; Stoller & Robinson, 2018). Additionally, students feel that diverse linguistic competencies and writing skills are developed with the help of corpus-based materials (Curry & McEnery, 2025; Handzilevska, Tkachuk, Hundarenko & Lelakova, 2023).

Conversely, three-quarters of the studies suggest that numerous students feel uncertainty while working with corpus-based activities, especially complex homework assignments, and they admit that they can learn ESP vocabulary more effectively with a teacher (Hsiao-I, 2014; Paker & Özcan, 2017; Rudneva, Valeeva, Faizi, Guslyakova & Nigmatzyanova, 2019).

RQ 3: What are the challenges associated with corpus-based materials in terms of ESP vocabulary teaching, learning, and assessment?

The challenges identified within the rapid literature review might be summarized as follows. The primary challenge is limited access to resources, as they require specialized software, which can be overcome by utilizing free online corpora. Furthermore, a balance needs to be struck between the authenticity of these materials and their pedagogical relevance in relation to specific ESP vocabulary.

The complexity of analysing corpus data can pose difficulties for both teachers and university students; this could be alleviated by prior training. In addition to this, incorporating corpus-based materials into university ESP curricula requires curriculum redesign, which demands ongoing updates to reflect evolving language for specific purposes (Granger, 2009; Grosse & Voght, 2012; Quero & Coxhead, 2018).

Based on these results, further critical analysis is needed into the students' understanding of corpus-based materials for their ESP study needs and the challenges associated with their application. Addressing these challenges through considerate resource selection, teacher training, and ethical awareness is crucial for maximising the benefits of corpus-based activities in ESP vocabulary acquisition.

Corpus tools also assist in the evaluation of ESP course books (Chuying, 2019). It is evident from these processes that future compilation of ESP textbooks may need to pay attention to several important aspects. Firstly, it is essential to achieve a better balance among the various language skills. Listening, speaking, and related learning strategies should constitute a significant portion of the content, reflecting students' perceived needs and preferences—what they find necessary, insufficient, or desirable. It is also advisable to clearly specify and integrate sub-skills such as listening, speaking, reading, writing, vocabulary, and learning strategies within exercises and activities. Secondly, ESP textbooks should enhance their content regarding text features, recycling, organization, and difficulty levels. Improving the layout by incorporating illustrations can help capture students' interest. Additionally, it is recommended that language knowledge and skill training be revisited and recycled throughout the book, enabling students to reinforce and consolidate their learning. The content organization should follow a coherent syllabus that combines language points, skills, and subject matter, with the complexity of texts gradually increasing as ESP learners progress.

As the first comprehensive review of its kind in the field of ESP, the findings provide valuable insights for developing relevant academic policies across various ESP settings. They also offer pedagogical strategies and practical guidance for English language teachers, enabling them to leverage language corpora effectively and productively improve English language education in diverse ESP contexts.

The authors of the reviewed articles agree that learners should be provided with opportunities to acquire vocabulary implicitly through exposure to natural speech and everyday reading materials, thereby fostering their professional language. This approach helps them grasp the subtle nuances of word meanings, derivative forms, and contextual usage. In essence, it is vital to develop both learners' receptive (understanding) and productive (use) vocabulary skills. Namely, corpus-based teaching materials directly support this approach.

Research limitations

However, it is essential to acknowledge that the findings and conclusions are somewhat limited due to the small number of studies reviewed; as mentioned above, all the studies are published in English, and they were obtained solely from these major databases: Web of Science, Scopus, Google Scholar, ProQuest, Science Direct, and ERIC. Furthermore, the heterogeneity of included studies from different ESP fields, which makes the direct comparison more challenging, might be considered a limitation. Ultimately, this rapid review may be less reliable than a full systematic review due to time constraints and potential biases that can arise from the accelerated review process.

Future systematic reviews should incorporate a larger and more diverse range of studies from various ESP contexts across different regions. In this way, we could develop a more comprehensive understanding of the impact of language corpora on ESP learning, teaching, and assessment.

Conclusion

Advancements in technology have significantly broadened the array of options accessible to ESP teachers and heightened the significance of innovative teaching methods that provide ESP students with linguistic phenomena using extensive collections of machine-readable texts, known as corpora.

The weight of evidence from this rapid review of literature suggests that corpora can be beneficial for many learners in various contexts; they serve as a valuable addition to the ESP teacher's and learner's toolkit when employed thoughtfully and appropriately. To be more specific, the corpus-based approach to teaching ESP enhances linguistic competence by providing extensive data on real-life lexicogrammatical patterns, facilitating frequency-based insights into standard word choices, connotations, subtle differences in meaning, and suitable collocations.

Regarding the corpus itself, for example, when focused on university students, we can expand its scope by incorporating textbooks and potentially scientific articles. However, the latter might warrant creating a separate academic corpus specifically for analysing lexis. When focused on teachers, the corpus serves as a valuable reference resource, allowing them to verify their intuitions about the language before sharing them with their ESP students.

This study might be valuable, especially for English language teachers and ESP curriculum developers, as it provides comprehensive insights into how to employ corpus-based materials to develop students´ ESP vocabulary effectively. Moreover, this study presents insights that can inform subsequent linguistic research in this area. Future research in ESP vocabulary teaching may focus on creating core multiword academic vocabulary or core spoken academic vocabulary. Furthermore, the investigation of how cross-linguistic corpus comparisons can facilitate learners' understanding of differences and similarities between their native and target languages' terminology. And most recently, on the application of AI techniques to enhance the analysis and presentation of corpus ESP data.

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Artificial Intelligence Statement: During the research process, the author utilized the Sketch Engine, a tool that employs natural language processing and computational linguistics techniques to facilitate the systematic analysis of language usage. Moreover, AI and AI-assisted technologies were used in this study for grammar and language refinement. After using these tools, the author reviewed and edited the content as needed. The author takes full responsibility for the accuracy and integrity of the content.

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Marta Lacková works at the University of Žilina. Her research focuses on comparative and corpus linguistics. She has published two monographs on the grammatical category of determination and inter-lingual homonyms, two morphological textbooks intended for university learners, one lexicological textbook, and more than 40 scientific articles.
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