Focus on ELT Journal
Vol 4, Issue 3, 2022
ISSN: 2687-5381

Economics keyword lists: A comparative corpus study for ESP[1]

[a]Ersin Balcı [b]İrem Çomoğlu
[a]PhD Candidate, Dokuz Eylül University, İzmir, Türkiye, ersin.balci@ogr.deu.edu.tr
[b]Assoc. Prof. Dr., Dokuz Eylül University, İzmir, Türkiye, irem.kaslan@deu.edu.tr

APA Citation: Balcı, E. & Çomoğlu, İ. (2022). Economic keyword lists: A comparative corpus study for ESP. *Focus on ELT Journal, 4*(3), 34-45. https://doi.org/10.14744/felt.2022.4.3.3

ABSTRACT

English-medium instruction (EMI) and English for specific purposes (ESP) go hand in hand in higher education, and the demand for those has risen significantly over the last two decades. Studying in an EMI economics program requires a certain level of language proficiency. In most cases, students in these programs are provided with additional language support in the form of an ESP program. Mastering in an EMI economics program challenges students with a number of new and often technical words. Corpus linguistics is, therefore, one of the great tools to answer the vocabulary needs of ESP students. While Coxhead's (2000) Academic Word List (AWL) has been a satisfactory source for academic programs, its being too limited for diverse academic fields has also been criticized. In the current corpus-based study, two separate field-specific keyword lists – (1) Economics Textbook Keyword List (ETWL) and (2) *the Economist* Magazine Keyword List (EMWL) - were created and the coverage of the AWL in these lists was measured. The correspondence ratio between the ETWL and the EMWL was also measured and reported by percentages. In the light of the results, it is argued that the AWL on its own may not be a sufficient source for students of economics and language given in non-academic authentic materials should also be placed in corpus and curriculum design. Thus, for the vocabulary needs of ESP students in an EMI Economics program, it is substantially important that a keyword list covering both academic and non-academic contexts be provided.

Keywords
English for specific purposes, students of economics, corpus linguistics

Article History
Received : 31.08.2022
Revised : 10.10.2022
Accepted : 07.11.2022
Published : 30.12.2022

Type
Research Article

Introduction

The Englishization (Kirkpatrick, 2011) of higher education is not a new phenomenon but a growing trend in the era of globalization. More English-medium instruction (EMI) programs have tremendous gains for the universities. Beyond its educational benefits, EMI – the use of English (for example, sole use, partial use, code-switching, and so on) to teach academic subjects in countries where the first language of the majority of the population is not English (Macaro & Akincioglu, 2018, p. 254) - is often driven by economic, political and social forces

[1] This study is part of the wider PhD thesis study conducted by the first author.

Corresponding Author: ersin.balci@ogr.deu.edu.tr
Copyright for this article is retained by the author(s), with first publication rights granted to Focus on ELT Journal.

(Wilkinson, 2013). Along with the Bologna Process and the Erasmus+ program (the EU program for education, training, youth, and sport), the number of universities pursuing to attract international students soared dramatically, which increased competition among universities for international mobility (Graddol, 2006; Turhan & Kirkgöz, 2018). In addition to its political and economic reasons, the hegemony and functional power of the English language is also an incentive force for parents who think that EMI results in improved employment opportunities because it improves English proficiency (Al-Riyami & Dayananda, 2022).

Setting up an EMI program or converting existing ones may not always be a simple transition. This shift comes with new challenges and requires thorough preparation and ongoing assistance. In a typical EMI program, language-related difficulties are often encountered, and various solutions have been in place. ESP (English for Specific Purposes) programs are prominently one of the methods to assist EMI learners in overcoming language-related difficulties and being better equipped for the EMI program. ESP is about "teaching and learning of English as a second or foreign language where the goal of the learners is to use English in a particular domain" (Paltridge & Starfield, 2013, p. 2). Designing an ESP course and other aspects of needs assessment procedures brings up one major question; "What to teach?". In this vein, the importance of outlining specific lexical and structural elements of targeted language comes to the fore. Communication is constructed through four skills: Listening, speaking, reading, and writing. However, the required vocabulary is fundamentally indispensable for this cognitive act (Laufer & Nation, 1995; Lestari & Hardiyanti, 2020).

It is well acknowledged that corpora and (key)word lists are useful resources for teaching students to expand their vocabulary (Ma & Kelly, 2006; Read, 2000; Schmitt, 1997). It may even be problematic to design the target vocabulary for general English programs and their coverage in the well-known general service word lists (Benson & Madarbakus-Ring, 2021). Therefore, creating a keyword list for a specific program requires careful consideration of a number of factors. The well-known Academic Word List (AWL) (Coxhead, 2000) may be expected to cater for the needs of the students at the tertiary level. However, the AWL has received harsh criticism for being too general and for limiting the exposure unique to certain subject fields (Hyland & Tse, 2007; Paquot, 2007). Within economics, how relevant and sufficient the materials provided by university programs is another question yet to be answered. In other words, it should be asked whether the language the students are engaged in their EMI program complies with real-life requirements. The question of whether and to what extent the language introduced in academic programs enables learners to comprehend authentic materials (e.g., the *Economist* or news portals) should also be investigated. Thus, this study aims to generate two keyword lists; (1) Economics Textbook Word List-ETWL and (2) the *Economist* Magazine Word List - EMWL for the economics ESP program in a Turkish university context. Additionally, the coverage of the AWL in these keyword lists and the correspondence level between the ETWL and the EMWL are going to be investigated.

ESP and needs analysis

The acronym ESP first surfaced as a brand-new phenomenon for ELT researchers in the 1960s. The quick changes in the post-war environment led to its birth and rising popularity. After the Second World War, nations underwent significant transformations that ushered in a more globally interconnected world. The advancements in commerce, transportation, science, and technology, as well as the money flowing backwards to oil-rich nations and the economic and scientific advancements in the far-east countries, contributed to the creation of ESP. Human intelligence needed to expand, and individuals needed to learn the universal language quickly and with a specific concentration (Hutchinson & Waters, 1987).

ESP simply means teaching English to learners whose actual purpose is to use the language in specific educational or vocational settings. When, where, and why learners require the language in academic or professional contexts are the main foci of ESP (Dudley-Evans & St John, 1998). Considerations of how language is used in the specific situations the learners will be working or studying in are used to make judgments about what to teach and, in some cases, how it is taught. ESP is a comprehensive language teaching approach that goes beyond only being connected with a particular language, teaching style, or course topic (Hutchinson & Waters, 1987). Accordingly, Anthony (2015) argues that ESP is a complete approach for foreign language teaching targeting learners' future needs (language, skills, discourse, and genre) in both academic and work settings. Whether the needs of a tour guide and those of a university student in an English-medium tourism department are the same may need to be addressed in light of the common argument suggesting that ESP must be developed around the individual and professional needs of the learners. These two distinct contexts under a specific field may have different practical goals, classroom practices, genres, and language styles.

Likewise, the acronym EAP (English for Academic Purposes) could also cause some misunderstandings since one could assume that all disciplines at the university level are ultimately academic degrees. As it was in Hutchinson and Waters (1987), ESP is split into two main divisions, EAP (English for Academic Purposes) and EOP (English for Occupational Purposes) (Anthony, 2018; Robinson 1991). However, since ESP is an indefinite phenomenon, these two main divisions can be further subdivided into numerous more (e.g., English for General Academic Purposes (EGAP), English for Professional Purposes (EPP) (Anthony, 2018).

The first phase in the course development circle of ESP is the needs analysis, which is the methodical investigation of what learners require to function in the intended communication setting (Woodrow, 2018). Similarly, Brown (2016) suggests that a defensible curriculum must be defined and validated by systematically gathering and evaluating all relevant data, which is what needs analysis entails. In essence, the needs analysis phase forms the basis of the ESP course design (Anthony, 2018; Baştürkmen, 2010; Flowerdew, 2013; Hutchinson & Waters, 1987; Robinson, 1991; West, 1997). What distinguishes it from the design of general English courses is undoubtedly the analysis of the clear and particular needs of ESP (Flowerdew & Peacock, 2001).

ESP needs analysis is evolving into a more specialized and customized phenomenon due to a growing trend (Flowerdew, 2013). In other words, a needs analysis should be undertaken case-by-case based on your desired context and the kind of information needed (Johns & Price-Machada, 2001). In an ESP course design, “instead of a one-size-fits-all approach, it is more defensible to view every course as involving specific purposes, the difference in each case being simply the precision with which it is possible to identify current or future uses of the L2” (Long, 2005, p. 10).

As to the question of “What to teach?” In an ESP course, the corpus comes to the fore as the cornerstone of the course design. Since many ready-made ESP materials do not match the learners’ unique or local needs in particular subject areas (Baştürkmen & Bocanegra-Valle, 2018) and large-scale corpora with general characteristics are often unrelated to the needs of students (Nelson, 2000), ESP instructors are more likely to create their own corpus to meet the demands of students.

Corpus linguistics

As to the question of “What to teach?”, the corpus comes to the fore as one of the pillars of ESP course design. Since many ready-made ESP materials do not match with the learners’ unique

or local needs in particular subject areas (Baştürkmen & Bocanegra-Valle, 2018), and large-scale corpora with general characteristics are often unrelated to the needs of the students (Nelson 2000), ESP instructors are more likely to create their corpus to meet the demands of students.

Corpus is simply a collection of texts through which one can search for certain word specifications (e.g., frequency, keyness, etc.) for both vocabulary teaching and research. For instance, comprehensive corpus studies may inform the scope of textbooks' vocabulary and the listings in dictionaries (Garcia, 2014). Teachers can also develop a tailor-made corpus or use ready-made ones to shape their curriculum and lesson content (Bennett, 2010). In short, although its popularity has accelerated in recent years, corpus linguistics has been a fundamental research area guiding foreign language teaching, specifically ESP for a long time. Generating and organizing a discipline-specific keyword list is of paramount importance for course designers, teachers, and other stakeholders in an ESP context. Such a keyword list refers to the vocabulary items which are distinctively frequent in certain fields (Coxhead & Nation, 2001). As a primary example, Coxhead's (2000) Academic Word List (AWL) has been a substantial source for ESP/EAP programs for almost two decades (Schmitt & Schmitt, 2005; Wells, 2007).

The question of how appropriate the AWL is for the fields having distinctive lexical items has remained on the agenda of ESP, and some criticism has been voiced for its validity and comprehensiveness. For example, in their study, Hyland and Tse, (2007) argue that "the AWL might not be as general as it was intended to be" (p. 235) and the assumption that EAP learners only need one set of vocabulary could be misleading. In another study targeting to compare the coverage of the AWL in the medical research articles (Chen & Ge, 2007), the ultimate results suggest that while there is a good degree of match between the AWL and the medical research articles, the AWL list seems to be far from complete in representing an overall picture of the frequently used academic words in medical research articles. Nonetheless, Coxhead's AWL has been a cornerstone and reference while developing field-specific word lists (Chen & Ge, 2007; Konstantakis, 2007; O'Flynn, 2019; Valipouri & Nassaji, 2013; Vongpumivitch et al., 2009).

To cater for the needs of key vocabulary for certain fields, a number of studies have been carried out, and their coverage with the AWL has been investigated widely. In particular, Konstantakis (2007) conducted a corpus study to generate a keyword list for the field of business, and the results suggested that the AWL covers only 4.6% of the Business English corpus, while another similar study in the field of agriculture, (Martinez et al., 2009) showed a higher degree of correspondence between discipline-specific agricultural corpus and the AWL with 9.06%. Regarding the social sciences and educational fields, two similar studies in the literature have investigated the coverage of the AWL in unique discipline-specific corpora, namely applied linguistics (Vongpumivitch et al., 2009) and education research papers (Mozaffari & Moini, 2014). The coverage levels of these corpora were only 11.17% and 4.94%, respectively. In a more recent study, Xodabande and Xodabande (2020) investigated the weight of the AWL in the specifically designed corpus generated from psychology research articles. The findings revealed that the coverage of the AWL is 13.44%.

In relation to the current study, the coverage of the AWL in the fields of economics and finance has been addressed in a number of corpus-based research studies. Tongpoon-Patanasorn (2018), for instance, reported that the AWL is covered only by 10.52% in Khon Kaen University Business English (KKU BE) corpus. Similarly, the study of Li and Qian (2010) revealed that the coverage ratio between the AWL and Hong Kong Financial Services Corpus (HKFSC) is 10.46%. O'Flynn (2019) reported that the AWL is covered by only 13.5% in another corpus study generated from open open-access journals.

There have been efforts to clarify the weight of the AWL in several studies, which eventually suggest that while the AWL coverage is, to some extent, satisfactory for some fields, for some others, it is nowhere near complete to cover the academic/technical needs of learners. Given that the AWL is no longer deemed a general word list that fits all academic programs, the need for a tailor-made discipline specific word list has been brought out (Hyland & Tse, 2007). Besides the negative correspondence between the AWL and large-scale discipline specific keyword lists, regional and curriculum related differences may also occur. The subject and language scope of academic programs may vary, and whether the students are exposed to the required language throughout their academic program can only be answered through in-house inquiries or case studies. That is, what a university offers to students in a certain field may or may not be a fully comprehensive source.

Regarding the nature of the field of economics, the investigation of language features from textbooks, academic journals, and dissertations may not be adequate as the field is innately multi-disciplinary and has close relation with business, political science, sociology, and psychology. Therefore, what a tertiary level economics student will come across in the long run of their future career (academic or non-academic) should be on the agenda of a language course design and, naturally corpus development. Having all these in mind, this research study aims to investigate the coverage of the AWL both in the keyword list generated from the economics course textbook (ETWL) used in a state university in Turkey and in the one generated from the *Economist* magazine (EMWL). Additionally, investigating the correspondence level between the ETWL and the EMWL is also the goal of the current study.

In this corpus-based study, the following research questions are going to be addressed:

1. What is the coverage of the AWL in the Economics Textbook Keyword List (ETWL)?
2. What is the coverage of the AWL in the *Economist* Magazine Keyword List (EMWL)?
3. What is the correspondence ratio between the ETWL and the EMWL?

Methodology

The context and compiling of the corpora

The corpora used in this study were developed to inform the ESP program for the English-medium economics program in a state university in the west of Turkey. Developing a satisfactory corpus requires meticulous organization of several steps. As for the first step in this current study, selecting and collecting the text data was guided by the overall needs analysis process and by subject specialists as an informant. After consultation with the professors in the economics program, the main textbook used in the Introduction to Economics course was decided to be a comprehensive source to base the corpus analysis for the ESP program. With regards to issues of representativeness and sampling, in light of the instruction of the course professors, the economics textbook The Principles of Economics (Case et al., 2012) with 501.136-word tokens was considered to be sufficient to cater for the vocabulary needs of economics students.

Given that the research and context range of economics is not solely limited to university course materials, and in line with the recommendations of the professors in the related department, we decided to construct another corpus to provide more inclusive language support and comprise the features of the living language of economics (refers to the language presented in magazines and news). To provide more up-to-date language patterns, we compiled 101 issues of the *Economist* magazine from 2019, 2020, 2021 with 6.731.602 tokens. The final step of

compilation was to convert the collected content into a set of data to be processed in the corpus analysis program - *AntConc V.4.1.1* (Anthony, 2022). Before converting the PDF files into analyzable txt formats, we excluded the noise, removing the irrelevant part of the data (for instance, ads, bibliography, etc.). This enabled us to gather more accurate data fitting for the scope of our research questions.

Data analysis and creating word lists

The corpus analyzer program's keyness feature was utilized to create the two keyword lists (ETWL and EMWL). The corpus analysis software *AntConc V.4.1.1* (Anthony, 2022) was used to generate a word list based on frequency given in the data collected. *AntConc* is a free corpus analysis program to create word lists based on frequency/keyness etc. and to reveal vocabulary patterns in given electronic text data. Once the txt format data files were uploaded to the program, an extensive word list was generated. As for the goal of the study, to be able to create a keyword list, - that is, listing down the unusually frequent words compared to a general word list or corpora - the British National Corpus (BNC) as the reference corpus was uploaded. By having the BNC as the reference, the program sought for the unusually frequent words in the uploaded data and came up with two unique keyword lists, namely Economics Textbook Keyword List (ETWL) and the *Economist* Magazine Keyword List (EMWL). This is a statistical technique which is simply based on log-likelihood statistics of the words. Before finalizing the keyword lists, we ran through a manual filtering process which allows tossing out practically irrelevant words even though they statistically seem unusually frequent (e.g., country names, politician names, acronyms).

When the large keyword lists are made available to use, the key question is to decide the cut-off point of the lists. In other words, setting a cut-off point is to decide on the lowest level of frequency or keyness. The words which were listed below that level are to be excluded from the ultimate keyword lists. As the size of corpora varies, deciding a threshold level is problematic and often arbitrary. The most common method is to pick highest ranking words in terms of either keyness or frequency (Pojanapunya & Todd, 2016). In this study, considering the scope and length of the ESP program and based on the keyness values, we selected the top 250 words to be in the ultimate keyword lists.

As to the investigation of the coverage of the AWL in the ETWL and the EMWL, *AntWordProfiler V.2.0.1* (Anthony, 2022) was used. It is a free software available to analyze the vocabulary level and text complexity. In the program, the general service word list (GSL - most frequent 1000 and 2000 sets) and Coxhead's AWL are readily embedded. The program enables researchers to compare any corpus or keyword lists against the GSL/ AWL or any other reference corpus. As for the current study's research questions, the AWL coverage in the ETWL and the EMWL was analyzed and reported by percentages.

Results

To answer the study's research questions, the initial task was to generate keyword lists for two separate text data, namely, the economics textbook of the academic program and 101 issues of the *Economist* magazine. As for the ETWL, a sizable keyword list was created out of 501.136 word tokens, and the top ranked 250 words were selected to be in the final form of the keyword list. Finally, some examples of the ETWL were presented with keyness values in Table 1.

Table 1. *Examples of keyword analysis for ETWL*

Word	Keyness Value	Word	Keyness Value
output	13625,9	households	4595,94
labour	13433,85	capital	3998,32
curve	9745,43	tax	3241,2
demand	9542,87	consumption	2937,96
supply	7532,36	interest	2932,08
rate	7347,82	downturn	2602,50
marginal	6511,02	intermediary	2502,41
aggregate	6410,55	inflation	2458,68
equilibrium	5456,63	utility	2228,43
goods	4955,68	slope	1250,71

Regarding the EMWL, a keyword list was generated from the corpus of the *Economist* magazine out of 6.731.602 word tokens, and the top-ranked 250 words were chosen. In addition, some examples of the EMWL were also presented with keyness values in Table 2.

Table 2. *Examples of keyword analysis for the EMWL*

Word	Keyness Value	Word	Keyness Value
profit	992,78	demand	822,84
immigration	950,66	equity	813,7
commerce	947,44	Subsidy	797,99

vaccinate	908,48	fund	797,97
poverty	904,43	tariff	795,29
capitalization	891,01	tax	755,95
forecast	878,91	conflict	704,55
roughly	871,51	inflation	657,64
boom	858,77	democracy	651,38
regime	844,39	retail	596,52

As for the first research question, the coverage of Coxhead's AWL was measured through *AntWordProfiler,* and the weight of the AWL in the ETWL was reported to be only 19,70%. Less than one-fifth of the words listed in the ETWL were also included in the AWL (see Figure 1).

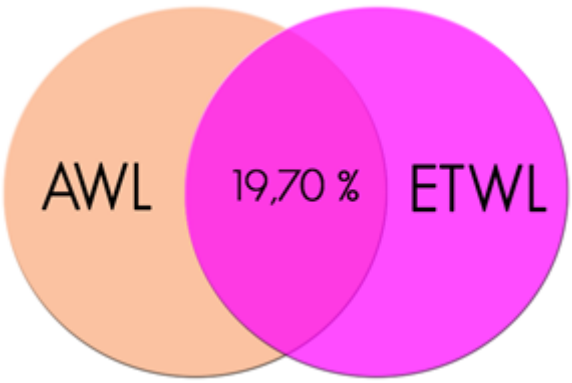


Figure 1. The coverage of the AWL in the ETWL

The second research question, likewise, aimed to find out the coverage of the AWL in the EMWL. As shown in Figure 2, the coverage of the AWL in the EMWL is only 14,40%. In other words, the AWL is represented in the EMWL by less than 37 words when it is calculated over the top 250 words.

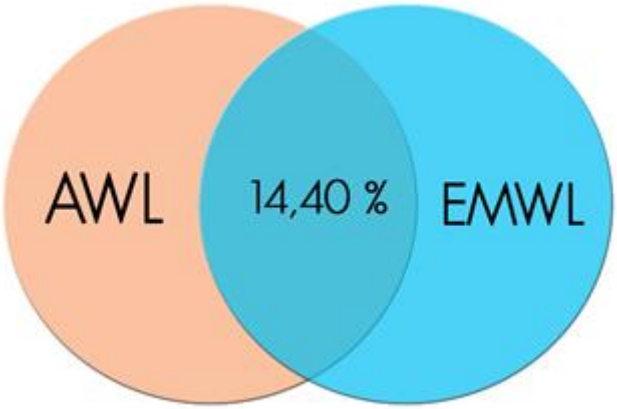


Figure 2. The coverage of the AWL in the EMWL

The third research question of the study was set to investigate the correspondence level of two discipline-specific keyword lists. As discussed previously in the methodology section, one of the substantial inquiries of this study was to find out how related the corpus of a tertiary level economics program and non-academic real economics contexts (here refers to the corpus of the *Economist* magazine). Therefore, two keyword lists were again compared through *AntWordProfiler* by setting one as the reference corpus and measuring correspondence level. The results revealed, as it is shown in Figure 3, that the similarity ratio of two discipline-specific keyword lists is 15,24%.

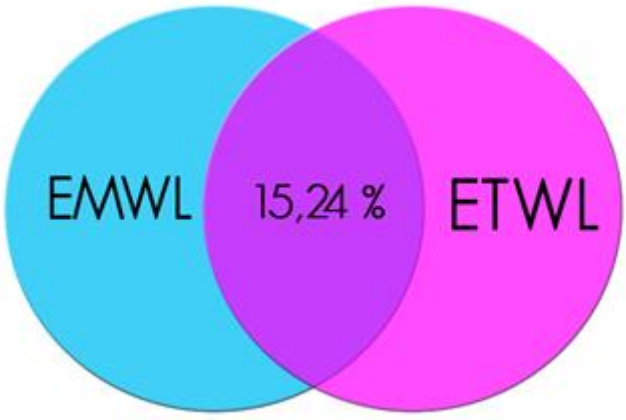


Figure 3. The correspondence ratio between the EMWL and the ETWL

Discussion

The needs of the students in an ESP program or a tertiary level academic program are a significant matter to inquire into. Relatedly, corpus studies provide very rich data for course developers and enable researchers to unearth what is elusive. While having a list of words that fits the needs of learners in certain fields sounds promising, it should also be questioned whether the level of correspondence is satisfactory. One of the earlier and solid attempts to unveil the key vocabulary for academic context was Coxhead's (2000) Academic Word List. Considering

the fact that any tertiary level program has academic roots, the AWL is expected to be the core of the language for such programs. Therefore, as it was investigated in various studies, the current study questioned the coverage of the AWL in the keyword list generated from the textbook of the economics program, and the ratio was reported be 19.70%. Several previous studies, for example, Tongpoon-Patanasorn's (2018) study found that the AWL is covered by 10.52% in Khon Kaen University Business-Economics Corpus. Similarly, O'Flynn's (2019) corpus study on economics open access journals showed that the AWL is covered by only 13.5%. Although the coverage level of the AWL in the ETWL is relatively higher compared to similar studies conducted in academic contexts, it would seem evident to any course developer or teacher that one-fifth of coverage is far from being complete to build an ESP course on Coxhead's Academic Word List. Therefore, a discipline-specific word list, as Hyland and Tse, (2007) stated, is desperately needed for distinctive academic programs.

Clearly, academic textbooks or materials are not what economics students will only cover in their future academic or non-academic lives. Thus, what is valid (language-wise) outside the university context was also the current study question. For that purpose, another keyword list was created from the *Economist*, and the correspondence level with the AWL was measured and reported to be 14,40%. In the literature, the closest study was conducted by Li and Qian (2010), and the results revealed that the coverage ratio between the AWL and Hong Kong Financial Services Corpus (HKFSC) was 10.46%. These similar results suggest that for economics students, the AWL may not be sufficient to follow global economics matters and that more than what the AWL offers is needed.

A distinctive aspect of the current study is the comparison of two newly created keyword lists from related but different contexts. The goal was to find out whether what a university economics program introduced to students is congruent with what is presented in the media under the theme of economics. Hence, the correspondence level between the ETWL and the EMWL was measured and reported as 15,25%. This result shows that students of economics should be provided with input dispersed throughout various sources, including economics magazines, news portals, etc., as supported by Charteris-Black (2000), who compared the frequency of animate and inanimate metaphors in the *Economist* and general magazines. The study's findings revealed the distinctive use of metaphors in the *Economist*, suggesting that lexical items in it would be a valuable addition to an ESP course.

Conclusion

Globalization of education and the spread of EMI programs worldwide has led educators to dwell on the ways to meet specific needs of language learners in academic fields. In this sense, ESP methodology, needs assessment, and corpus development are primary procedures that every course designer should contemplate. While there is a sizable body of research, practical teachings, ideas, and materials for English language teaching for general purposes and English for specific purposes as well, more rigorous case studies casting light into local needs can give insights about overall ESP course design. Additionally, the precondition suggesting that academic journals, books, and publishing are what university students need may also mislead the course designers as in today's world, universities have close relationships with the real sector and business contexts. In the present study, two separate keyword lists (ETWL and EMWL) were created for an ESP course for a tertiary-level economics program in Turkey. In addition, the coverage of the AWL in these two keyword lists was investigated. The findings revealed that the AWL is covered in the ETWL and the EMWL by no more than 20%. Another key aspect of the current study is to compare the correspondence ratio between the ETWL and the EMWL. The ETWL refers to the context in the university-level economics program, and

the EMWL was constructed from the *Economist* magazine sources. The similarity level between these two separate keyword lists was found to be 15,24% only.

The findings of the study clearly show that to meet the ESP needs of university-level economics students, neither general-purpose academic keyword lists nor technical word lists based on university course materials are sufficient, and the multidisciplinary nature of the economics program and its close connection with political science, psychology and sociology should not be disregarded. Getting back to the question of "What to teach?", one can assume that besides university course materials, sources representing the living language of economics (e.g., the *Economist* magazine) must be included in a well-designed discipline-specific corpus. In addition, to create better ties with real-life practice- which eventually enhances the quality of education at universities (Depoo et al., 2022) - more than what course textbooks or academic papers offer is needed.

Disclosure Statement

The authors reported no potential conflict of interest.

References

Al-Riyami, T. K., & Dayananda, C. S. (2022). Parents' perspectives towards implementing English-medium instruction at tertiary education in Oman. *Arab World English Journal 13*(1), 145-160. http://dx.doi.org/10.24093/awej/vol13no1.10

Anthony, L. (2015). The changing role and importance of ESP in Asia. *English as a Global Language Education (EaGLE) Journal*, *1*, 01–21. https://doi.org/10.6294/EaGLE.2015.0101.01

Anthony, L. (2018) *Introducing English for specific purposes.* Routledge. https://doi.org/10.4324/9781351031189-2

Anthony, L. (2022). AntConc (Version 4.1.1) [Computer Software]. Tokyo, Japan: Waseda University. Available from https://www.laurenceanthony.net/

Anthony, L. (2022). AntWordProfiler (Version 2.0.1) [Computer Software]. Tokyo, Japan: Waseda University. Available from https://www.laurenceanthony.net/

Baştürkmen, H. & Bocanegra-Valle, A. (2018). Materials design processes, beliefs, and practices of experienced ESP teachers in university settings in Spain. In Kırkgöz, Y.& Diklitaş, K.(Eds.) *Key issues in English for specific purposes in higher education*, (pp. 13-27). Springer. https://doi.org/10.1007/978-3-319-70214-8_2

Baştürkmen, H. (2010). *Developing courses in English for specific purposes*. Palgrawe/Macmillan. https://doi.org/10.1057/9780230290518

Bennett, R. G. (2010). *Using corpora in the language learning classroom: Corpus linguistics for teachers.* University of Michigan Press. https://doi.org/10.3998/mpub.371534

Benson, S. & Madarbakus-Ring, N. (2021). A comparison of textbook vocabulary load analysis. *Vocabulary Learning and Instruction, 10* (2), 9–17. https://doi.org/10.7820/vli.v10.2.benson

Brown, J. D. (2016). *Introducing needs analysis and English for specific purposes.* Routledge. https://doi.org/10.4324/9781315671390

Case, K. E. & Fair, R. C., & Oster, S. M. (2007). *Principles of economics*. Prentice Hall.

Charteris-Black, J. (2000). Metaphor and vocabulary teaching in ESP economics. *English for Specific Purposes*, *19*(2), 149-165. https://doi.org/10.1016/S0889-4906(98)00025-8

Chen, Q., & Ge, G.-C. (2007). A corpus-based lexical study on frequency and distribution of Coxhead's AWL word families in medical research articles (RAs). *English for Specific Purposes*, *26*(4), 502–514. https://doi.org/10.1016/j.esp.2007.04.003

Coxhead, A. (2000). A new academic word list. *TESOL Quarterly*, *34*(2), 213-238. https://doi.org/10.2307/3587951

Coxhead, A., & Nation, P. (2001). The specialised vocabulary of English for academic purposes. In J. Flowerdew & M. Peacock (Eds.), *Research perspectives on English for academic purposes* (pp. 252-267). Cambridge University Press. https://doi.org/10.1017/CBO9781139524766.020

Depoo, L. & Urbancová, H. & Smolová, H. (2022). Factors of quality assessment in higher education and its impact on business students' development and interest in university education. *Journal on Efficiency*

and Responsibility in Education and Science, 15(2), 63-71. http://dx.doi.org/10.7160/eriesj.2022.150201
Dudley-Evans T. & St John M. J. (1998). *Developments in English for specific purposes.* Cambridge University Press.
Flowerdew, J., & Peacock, M. (2001). The EAP curriculum: Issues, methods, and challenges. In J. Flowerdew & M. Peacock (Eds.), *Research perspectives on English for academic purposes* (pp. 177–194). Cambridge University Press. https://doi.org/10.1017/CBO9781139524766.015
Flowerdrew, L. (2013). Needs analysis and curriculum development in ESP. In Brian Paltridge and Sue Starfield (Eds.), *The handbook of English for specific purposes* (pp. 325-347). Wiley-Blackwell. https://doi.org/10.1002/9781118339855.ch17
Garcia, F. A. (2014). How language learners can benefit from corpora, or not. *Recherches enDidactique des Langues et des Cultures*, *11*(1), 1–15 https://doi.org/10.4000/rdlc.1702
Graddol, D. (2006). *English next.* British Council. https://www.academia.edu/12530018/English_Next_by_David_Graddol
Hutchinson, T., & Waters, A. (1987). *English for specific purposes: A learning-centred approach*. Cambridge University Press. https://doi.org/10.1017/CBO9780511733031
Hyland, K., & Tse, P. (2007). Is there an "academic vocabulary"? *TESOL Quarterly*, *41*(2),235–253. https://doi.org/10.1002/j.1545-7249.2007.tb00058.x
Johns, A. M., & Price-Machada, D. (2001). English for specific purposes (ESP): Tailoring courses to students' needs – and to the outside world. In M. Celce-Murcia (Ed.) *Teaching English as a second or foreign language* (pp. 43–54). Heinle and Heinle.
Kirkpatrick, A. (2011). Internationalization or Englishization: Medium of instruction in today's universities. *Hong Kong Centre for Governance and Citizenship Work, The Hong Kong Institute of Education.*
Konstantakis, N. (2007). Creating a business word list for teaching business English. *Estudios de Linguistica Inglesa Aplicada (ELIA)*, *7*, 79–102. http://revistas.uned.es/index.php/ELIA/article/download/18091/15242
Laufer, B., & Nation, P. (1995). Vocabulary size and use: Lexical richness in L2 written production. *Applied Linguistics*, *16*(3), 307-332. https://doi.org/10.1093/applin/16.3.307
Lestari, I. W., & Hardiyanti, N. (2020). Vocabulary learning autonomy through incorporation of English songs: Indonesian EFL students' perspectives. *3L: The Southeast Asian Journal of English Language Studies*, *26*(2), 91–104 https://doi.org/10.17576/3L-2020-2602-07
Li, Y., & Qian, D. D. (2010). Profiling the academic word list (AWL) in a financial corpus. System, *38*(3), 402–411. https://doi.org/10.1016/j.system.2010.06.015
Long, M. (2005). Methodological issues in learner needs analysis. In M. Long (Ed.), *Second Language Needs Analysis* (pp. 19 – 76). Cambridge University Press. https://doi.org/10.1017/CBO9780511667299
Ma, Q., & Kelly, P. (2006). Computer-assisted vocabulary learning: Design and evaluation. *Computer-Assisted Language Learning*, *19*(1), 15- 45. https://doi.org/10.1080/09588220600803998
Macaro, E., & Akincioglu, M. (2018). Turkish university students' perceptions about English medium instruction: Exploring year group, gender and university type as variables. *Journal of Multilingual and Multicultural Development*, *39*(3), 256-270. https://doi.org/10.1080/01434632.2017.1367398
Martínez, I. A., Beck, S. C., & Panza, C. B. (2009). Academic vocabulary in agriculture research articles: A corpus-based study. *English for Specific Purposes*, *28*(3), 183–198. https://doi.org/10.1016/j.esp.2009.04.003
Mozaffari, A., & Moini, R. (2014). Academic words in education research articles: A corpus study. *Procedia - Social and Behavioral Sciences*, *98*, 1290–1296. https://doi.org/10.1016/j.sbspro.2014.03.545
Nelson, M. (2000). *A corpus-based study of the lexis of business English and business English teaching materials*. Unpublished PhD thesis, University of Manchester.
O'Flynn, J. A. (2019). An economics academic word list (EAWL): Using online resources to develop a subject-specific word list and associated teaching-learning materials. *Journal of Academic Language and Learning*, *13*(1), A28-A87. Retrieved from https://journal.aall.org.au/index.php/jall/article/view/592
Paltridge, B., & Starfield, S. (2013). *The handbook of English for specific purposes.* Wiley-Blackwell. https://doi.org/10.1002/9781118339855
Paquot, M. (2007). Towards a productively oriented academic word list. In J., K. Walinski, K. Kredens & S. Gozdz-Roszkowski (Eds.*), Practical applications in language and computers 2005* (pp. 127-140). Peter Lang. http://hdl.handle.net/2078.1/76045

Pojanapunya, P., & Watson Todd, R. (2016). Log-likelihood and odds ratio: Keyness statistics for different purposes of keyword analysis. *Corpus Linguistics and Linguistic Theory*,*14*(1), 133-167. https://doi.org/10.1515/cllt-2015-0030

Read, J. (2000). *Assessing vocabulary*. Cambridge University Press. https://doi.org/10.1017/CBO9780511732942

Robinson, C. (1991*). ESP today: A practitioner's guide.* Prentice Hall International.

Schmitt, D., & Schmitt, N. (2005). *Focus on vocabulary: Mastering the academic word list*. Longman.

Schmitt, N. (1997). Vocabulary learning strategies. In N. Schmitt & M. McCarthy (Eds.), *Vocabulary: description, acquisition and pedagogy* (pp. 199-227). Cambridge University Press.

Tongpoon-Patanasorn, A. (2018). Developing a frequent technical word list for finance: A hybrid approach. *English for specific purposes, 51*, 45–54. https://doi.org/10.1016/j.esp.2018.03.002

Turhan, B., & Kirkgöz, Y. (2018). Motivation of engineering students and lecturers toward English medium instruction at tertiary level in Turkey. *Journal of Language and Linguistic Studies*, *14*(1), 261-277.

Valipouri, L., & Nassaji, H. (2013). A corpus-based study of academic vocabulary in chemistry research articles. *Journal of English for Academic Purposes, 12*(4), 248–263. https://doi.org/10.1016/j.jeap.2013.07.001

Vongpumivitch, V., Huang, J.Y., & Chang, Y. C. (2009). Frequency analysis of the words in the academic word list (AWL) and nonAWL content words in applied linguistics research papers. *English for Specific Purposes, 28*(1), 33–41. https://doi.org/10.1016/j.esp.2008.08.003

Wells, L. (2007). *Vocabulary mastery 1: Using and learning the academic word list.* University of Michigan Press. https://doi.org/10.3998/mpub.93938

West, R. (1997). Needs analysis: State of the art. In R. Howard and G. Brown (Eds), *Teacher education for LSP* (pp. 68–79). Multilingual Matters.

Wilkinson, R. (2013). English-medium instruction at a Dutch university: Challenges and pitfalls. In A. Doiz, D. Lasagabaster and J.M. Sierra (Eds.), *English medium instruction at universities: Global challenges* (pp.3-24). Multilingual Matters. https://doi.org/10.21832/9781847698162-005

Woodrow, L. (2018). *Introducing course design in English for specific purposes*. Routledge https://doi.org/10.4324/9781315143279

Xodabande, I., & Xodabande, N. (2020). Academic vocabulary in psychology research articles: A corpus-based study. *MEXTESOL Journal*, *44*(3), 1-21.

Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the Journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (CC BY-NC-ND) (http://creativecommons.org/licenses/by-nc-nd/4.0/).