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CORPUS SOFTWARE IN EFL TEACHING: EXAMINATION OF LANGUAGE EXPOSURE

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Abstract. *Introduction.* High-quality language education in technical universities requires its interdisciplinary relation to the content of highly specialised subjects corresponding to the training programmes aimed at instructing the future specialists. Educational materials in a foreign language are highly productive if they emphasise the terminology and professional vocabulary authentic to the current state of the scientific field.

The *aim* of the study presented in the article was to assess the validity of the lexical material delivered in the course "English for Business Communication", to determine the selection criteria for this vocabulary as well as the methods for its assimilation and practical application.

Methodology and research methods. The applied corpus software enabled to obtain quantitative indicators of the distribution of foreign-language business vocabulary in the given training course. The lexical material being currently offered to students and the professional thesaurus identified via linguistic databases was compared with the use of comparative analysis and synthesis.

Results and scientific novelty. The lexical units (terms, set expressions), which are the most active in the business sphere, were identified on the basis of its frequency. The authors established the correlation between them and educational vocabulary, both from the perspective of its integration into the course without block concentration throughout the course of university training, and from the perspective of the variety of methods used to practice this vocabulary. It is concluded that the applied educational material needs to be substantially adjusted. The vocabulary does not completely reflect the realities of the business communication sphere and the distribution of active vocational vocabulary regulated by methodological guidelines does not entirely contribute to its strong assimilation. According to the authors, the necessary changes to the approaches and methods for selecting and compiling lexical mate-

rial and to the methodology for designing a foreign language course should be made on the basis of integrating pedagogical and linguistic knowledge, in particular, the methodology of teaching foreign languages and the corpus linguistics.

Practical significance. The ways of integrating corpus programs in the process of developing the content of language disciplines, which are part of the main educational program of technical universities, are demonstrated as one of the methods to increase the effectiveness of teaching foreign languages to students of non-linguistic specialties.

Keywords: teaching English as a foreign language (EFL), corpus software, vocabulary acquisition, word frequency and variety.

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ИСПОЛЬЗОВАНИЕ КОРПУСНЫХ ТЕХНОЛОГИЙ В ОБУЧЕНИИ ПРОФЕССИОНАЛЬНО ОРИЕНТИРОВАННОМУ ИНОСТРАННОМУ ЯЗЫКУ: АНАЛИЗ СОДЕРЖАНИЯ УЧЕБНЫХ МАТЕРИАЛОВ

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Аннотация. *Введение*. Для качественного языкового образования в технических вузах требуется соблюдение междисциплинарных связей между ним и содержанием узкоспециализированных предметов, соответствующих направлениям подготовки будущих специалистов. Весьма продуктивны учебные материалы на осваиваемом студентами иностранном языке, акцентирующие терминологический аппарат и профессиональную лексику, аутентичные современному состоянию научной области.

Цель изложенного в статье исследования заключалась в оценке валидности лексического материала, представленного в курсе «Деловой иностран-

ный язык», определении критериев отбора этой лексики, методов ее усвоения и практического применения.

Методы и методики. Использованное в ходе работы корпусное программное обеспечение позволило получить количественные показатели распределения иноязычной деловой лексики в рассматриваемом учебном курсе. Сопоставление предлагаемого обучающимся в настоящий момент лексического материала и выявленного при помощи лингвистических баз данных профессионального тезауруса производилось методами сравнительного анализа и синтеза.

Результаты и научная новизна. По критерию частотности употребления выявлен наиболее активный в деловой сфере пласт лексических единиц (терминов, понятий, устойчивых словосочетаний). Установлено соотношение между ними и учебной лексикой как с позиции ее встраивания в курс без блочного сосредоточения на всем протяжении вузовской подготовки, так и с точки зрения разнообразия форм работы с данной лексикой. Сделан вывод о том, что используемый учебный материал нуждается в существенной корректировке. Предлагаемый студентам словарный набор не в полной мере отражает реалии деловой сферы общения, а регламентированное методическими указаниями распределение активной профессионально-деловой лексики не способствует прочному ее усвоению. По мнению авторов, вносить необходимые изменения в подходы и методы отбора и компоновки лексического материала и в методику проектирования курса иностранного языка следует на основе интеграции педагогического и лингвистического знания, в частности методики преподавания иностранных языков и корпусной лингвистики.

Практическая значимость. Способы интеграции корпусных программ в процессе разработки содержания языковых дисциплин, являющихся частью основной образовательной программы технических вузов, продемонстрированы как один из возможных путей повышения эффективности обучения иностранному языку студентов нелингвистических специальностей.

***Ключевые слова**:* методика обучения иностранному языку, корпусные исследования, корпусное программное обеспечение, содержание обучения, лексика.

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Introduction

The ability to communicate effectively in a foreign language is the main objective of its learners, and thus, the key to successful foreign language vocabulary acquisition has over time been a challenging area to study for many researchers. Foreign language vocabulary acquisition has been addressed much basing on reading [1, 2], listening [3], interaction [6], as well as creating form-meaning links [4], game-based practices [5], etc. In addition, numerous investigations have demonstrated research outcomes on other concepts contributing to foreign language vocabulary acquisition. These are studies on the contextual informativeness of words, frequency of occurrence and vocabulary size [6], vocabulary demands and vocabulary learning opportunities [2], narrow reading [7], quality of input and quality of output [8] etc. However, lexical competence is currently acknowledged by many vocabulary specialists to be a core component of communicative competence [6], [9–10].

Literature review

A considerable amount of publications on foreign language vocabulary acquisition is focused on the effect of vocabulary repetition. The idea is to enrich the learning material with keyword repetitions, which makes them more learnable. However, it is stated that this is not the only principle to be covered. One more factor favoring foreign language vocabulary acquisition is the type of context, while according to Mondria J. A "inferring the meaning of a word from its context endows the retention of the word under consideration" [11, p. 256]. The idea was supported by the study carried out by Angela Joe, who investigated that "embedding words in rich, instructive contexts" coupled with noticing and frequent meetings contribute to better opportunities for vocabulary learning [8, p. 119]. It was also found that repeating items frequently ensured them being picked up [12]. In addition, it was revealed that encountering new words in multiple contexts resulted in a deeper, more transferrable knowledge of words than the usual strategy of studying short definitions [13].

In spite of the fact that the core principle of the concept about the frequency of occurrence is that the more encounters with a word in the input the more likely that the meaning of the word will be acquired [14–19] there is still no common agreement on the exact number of encounters that is pivotal for effecti-

ve vocabulary acquisition. As it was stated in [1], even using similar learning criteria, the estimated range of the words encounters is from 6 [20] to 20 [21].

Moreover, in addition to word frequency, it is necessary to consider the variety and range of the lexis to be acquired. In other words, the target lexis has to occur frequently, in different word forms constructed through affixation, suffixation, etc., and it has to be spaced properly with no concentration in a single chapter of course materials but distributed across all chapters and appearing in different contexts.

Against this background, the current study aims to critically assess the pedagogical materials for "English for Business Communication" class taught at TPU by evaluating the resourcefulness of the material with regards to new lexis acquisition.

Primarily, the study focuses on examining a key wordlist which learners are supposed to acquire by the end of the course. It is worth stating that this key word list was compiled and developed by the EFL (English as a foreign language) instructors in such a way, that the words were picked up from the corpus (class materials) intuitively and relying, in a sufficient degree, on subjective assessment of a teacher, with no special principle to follow, which, in its turn, might have cast a shadow over this list validity. Thus, the specific issues to be addressed in the study are as follows:

1. What lexis does the corpus primarily contain (academic, business, general)?

2. How frequent, various and ranged are the words from the key word list in the corpus?

3. How "business" is the key word list in comparison with the list of the most frequent words used in the sphere of business?

Methodology of Research

The target audience

The target audience is the second-year undergraduates majoring in Computer Engineering, who study English for Business Communication course. The average level of their English language proficiency according to the Common European Framework of Language is predominately A2, B1 and B2, though, to a lesser extent.

The subject of the study

The object of the study is the key vocabulary list compiled by TPU EFL instructors for being applied in the process of Business Communication course teaching.

The instrument

Computer programmes are excellent instruments for non-native English speaking teachers working in a non-language environment as they enable to review and create informative, comprehensible course materials relevant to learners' professional interests and specialisation [22, p. 161]. With this regard, corpus software tools were utilised in the course of the study to make the material more appropriate and fruitful for the learners. Specifically, AntWordProfile (http://www.antlab.sci.waseda.ac.jp/antwordprofiler_index.html) and Complete Lexical Tutor: Vocabprofile (https://www.lextutor.ca/vp/eng/) were used to examine the vocabulary distribution, namely, its repetition, range, and variety. The choice of AntWordProfile programme was conditioned by several reasons: firstly, it can process a text in Unicode, which allows using multilingual texts (some Russian language incorporations might have been in the original texts), secondly, it provides the opportunity to easily add and delete the word lists needed, and even to compare two word lists with each other, thirdly, it also enables uploading large files for analysis, and it is a freeware tool as well. This programme was applied to receive data on the frequency and range of the vocabulary under investigation. Vocabprofile is another corpus software tool that performs lexical text analysis by dividing the words of a text into four categories with regards to frequency: (1) the most frequent 1,000 words of English, (2) the second most frequent thousand words of English, i. e. 1,001 to 2,000, (3) the academic words of English (the AWL, 550 words that are frequent in academic texts across subjects), and (4) the remainder which are not found in the 1st, 2nd, 3rd categories. It breaks texts down by word frequencies indicating a variety of words (headword and its derivatives). Therefore, the abovementioned software implementation is aimed to ascertain what sort of vocabulary a corpus is represented by and whether it provides adequate exposure to a business English domain.

The corpus

The corpus was compiled on the basis of published materials on various Business topics (commercial textbooks: Market Leader, Business Vocabulary in Use, Insights into Business, Benchmark, etc.), in addition to both written (magazines, journals, newspapers, business correspondence), and spoken (e. g. recordings of meetings, negotiations and phone calls, videos of briefings, daily stand-up meetings, etc.) texts used in real business contexts. These are four-skill integrated materials containing a collection of both authentic texts and texts developed by EFL instructors which totally comprise 25,986 tokens.

Even though published textbooks and internet resources on Business English are easily available nowadays, the majority of the EFL teachers are witnessing the necessity to develop teaching materials by themselves. It is caused by several reasons, one of which is the intention to meet the requirements of the syllabus, which comprises 6 modules, a number of progress and achievement tests, project works, case studies, Webquests, LMS courses activities, etc. The syllabus aims to develop foreign communicative competence in Business sphere. This will favor the learners' further professional activity due to the development of their cognitive and research skills, professional outlook broadening, etc.

In addition, teacher-created materials help individualise the educational process taking into account the prominent nature of Russians while the learners' origin and citizenship influence their background knowledge in languages. Specifically, not many people in Russia speak English fluently since the vast majority of foreigners living in this multicultural country speak Russian and there are not many opportunities for Russian students to interact with native English speakers on a regular basis. Thus, the objective to improve the level of English proficiency obliges the language instructors to refer to students' background knowledge, find optimal ways to provide learners with maximum input during rather small amount of class hours allocated for the discipline.

Wordlists

Thus, the present study considers two wordlists (WL1, WL2) by comparing them to resolve the research questions. WL1 comprising 473 words has been compiled by an EFL teacher. Therefore, the research motivation is conditioned by the fact that the text selection, adaptation, and compilation occurred by no special principle in mind, mostly relying on the intuition and the personal view of the teacher. In other words, it includes words from the texts and various activities, which a teacher considered to be the key ones in the topic, and, which, according to their belief, might help students to understand foreign texts and express their thoughts and ideas within and even out of the scope of Business topics.

WL2 is business English wordlist (BEWL) (downloaded from Mike Nelson's business English lexis site (http://users.utu.fi/micnel/business_english_lexis_site.htm) comprising 875 words that occur in business English corpus with unusual frequency. According to our belief, this wordlist might be applicable for general business English course because it portrays frequently-used language that the students need to master during their ye-

arly Business English Class. Also, BEWL comprises words that occur significantly more in Business English than in general English. In addition, the list under consideration was developed on the basis of the analysis of 1,600,000 words from the business sphere.

The objectives of comparing two wordlists under consideration were to evaluate the representativeness of the vocabulary selected by the EFL teachers with regards to business lexis and to determine whether the singled out lexis portrays everyday Business English language.

Results and Discussion

According to the data presented in Table 1, which demonstrates the type of the vocabulary building the corpus under investigation, the major part of vocabulary is compiled of the general English words. Academic and business vocabularies are presented to a lesser extent; however, their cumulative count is 15.26%, which indicates a reasonable amount of special lexis. Actually, to advocate the presented peculiarity we can mention the fact that English Business language intrinsically comprises a lot of general English terms, and some academic vocabulary too.

Table 1

Type of lexis contained in the corpus

Таблица 1

Виды лексического наполнения учебного материала

Type of lexis	Token	Token %
1st 1000	18812	72.39
2d 1000	1138	4.38
AWL	935	3.60
BEWL	3030	11.66
Off-list	2071	7.97
Total	25986	100

To gain the frequency counts of the words from WL1, the authors were mainly guided by the findings of Matsuoka and Hirsh [2] and the research by Nation and Wang [23], according to which the words appearing in the corpus 10 times and more assure better memorising. Additionally, we took into account the total token ratio, which was sufficiently smaller (25986 versus 44887) in this case. Consequently, it was decided to select the words encountered in the corpus 4 times and more, presumably, words appearing in every chapter from 4 possible ones. Table 2 indicates data on WL1 frequency and range.

Table 2

Frequency and range of WL1 across the corpus

Таблица 2

Частотность и диапазон лексики

Word / Frequency / Range								
company	15	4	head	12	2	white	6	3
make	3	4	industry	12	4	chairman	6	3
business	12	3	materials	12	3	desking	9	4
meeting	3	4	senior	12	4	hierarchical	9	1
work	85	4	chief	11	4	human	9	4
time	71	4	collaboratively	11	4	launch	9	3
quality	60	3	long	11	4	output	9	3
product	56	4	managing	11	3	personal	9	3
service	55	4	office	10	4	poor	9	2
order	50	3	report	10	2	postpone	9	2
customer	35	4	responsibility	10	2	progress	9	2
negotiations	35	1	slush	9	2	reduce	9	4
sweetener	32	3	chair	9	2	resources	9	3
department	32	4	directors	9	2	responsibilities	9	2
job	32	4	exchange	9	2	routine	9	3
cost	30	4	feel	9	3	run	9	2
middle	29	3	fully	9	3	stress	9	2
top	28	4	partner	9	3	supervisor	9	1
structure	27	4	performance	9	2	target	9	4
digressions	27	3	project	9	2	teams	9	2
needs	26	4	range	9	3	arrange	9	1
after	24	4	standard	9	3	attend	4	1
command	24	2	statements	9	4	bankruptcy	4	2
consumers	23	4	action	8	3	bribe	4	3
decisions	23	3	complaints	8	4	briefing	4	1
market	22	4	form	8	3	bureaucratic	4	1
point	20	1	hold	8	1	CEO	4	2
premises	20	3	nothing	8	4	delegation	4	2
board	20	2	provide	8	4	domestic	4	2
hierarchy	20	2	agenda	7	1	essential	4	2
avoid	19	4	appliances	7	2	fault	4	2
set	19	4	areas	7	3	fill	4	3
brand	18	3	development	7	2	forward	4	3
executive	18	4	feedback	7	3	guarantee	4	2
financial	17	4	goals	7	2	headquarters	4	1
find	16	3	hand	7	3	prior	4	2
objective	16	2	industrial	7	2	priority	4	2
agreement	16	3	main	7	2	relations	4	2
decision	16	2	officer	7	3	reliability	4	1
put	15	3	policy	7	3	restructuring	4	2

Word / Frequency / Range								
corporate	15	4	power	7	3	roles	4	2
deal	15	2	advantage	6	3	ruthless	4	2
money	14	4	annual	6	3	sexual	4	1
buy	14	4	application	6	4	share	4	4
chain	14	3	better	6	2	stick	4	2
check	13	4	competitive	6	4	stock	4	1
general	13	3	concession	6	1	subsidiary	4	1
insider	13	3	cover	6	4	technical	4	2
limited	13	3	flexible	6	3	trading	4	2
luxury	13	4	ground	6	1	value	4	2
passionate	13	4	open	6	3	workplace	4	1
produce	13	4	personnel	6	1			
role	13	4	research	6	3			
times	13	3	shareholder	6	3			

As we can judge, Table 2 indicates that 159 words, which correspond to 39.25% out of 405 words (a family word without its derivative) adding up to 100%, appear in the corpus more than 4 times; and 46 words (28.93%) appear in every chapter of the corpus.

As a matter of fact, there are the words presented in Table 2, such as: *after, make, put, middle, main, better, find, time, open, white* and others, which can hardly refer to business lexis, due to the fact that they are used in everyday speech and belong to the 1st thousand of the most used English words. Besides, as the learners are the second-year undergraduates who learnt English at school, they have background knowledge of the language and are able to recognise these words in texts and use them in speech without any additional training. However, teachers are eager to find ways to improve the learners' performance in English when it comes to Business English vocabulary acquisition. Thus, it can be inferred that it is necessary to be selective in the key word list compilation process and WL1 needs to be optimised.

The words which belong to the category of business lexis were selected basing on the comparison of WL1 and WL2 with the objective to find out the degree of WL1 variation in the corpus. The coincidence between them is 27.48%, which implies that 130 words out of 473 (WL1) have direct relevance to business English vocabulary (WL2). According to the abovementioned counts, it might be inferred that 130 words in the target vocabulary list developed by the EFL teacher are the words occurring in Business speech with unusual frequency.

Afterwards, the aspect of variety, which is the number of word forms occurring in the corpus, was examined with the objective to demonstrate

whether the exposure to these words has a potential for acquisition. The findings indicate that some words from WL1 are really multiform words, e. g. *'work'* was found in the corpus in 8 forms (work, workers, workaholic, working, workloads, work-home, workplace, workstation), *'stress'* was presented by 6 forms (stress, stresses, stress-related, stressed, de-stress, stressful), *'make'* emerged in 5 forms (make, made, making, maker, makers) and etc. However, they have already been familiar to the students. Moreover, it is important to mention that there is a number of words which can be easily recognised by the students due to their similar pronunciation in the Russian language (*command, central, code, business, dynamic, economic, industrial, manager, market, personal, product, programme, progress, project, role),* which is caused by their Latin origin. Thus, they were not chosen for the analysis.

Table 3 represents sample words and their variety, for instance: chair (chairperson, chairman, chairmen, chair, chaired), functional (function, functions, functional, functionally), to identify (identify, identified, identifiable, identity), management (manage, management, managed, manager, managers, managing), to negotiate (negotiable, negotiate, negotiations, negotiator, negotiating, negotiation, negotiators).

Table 3

WL1 sampling and its variety

Таблица 3

Примеры словообразовательных гнезд корпуса

Sample word	Variety	Sample word	Variety	Sample word	Variety
customer	5	launch	2	feedback	1
application	3	liability	4	functional	4
benefit	2	management	6	identify	4
chair	5	monitor	3	investment	4
challenge	3	negotiate	7	invoice	2
competitive	3	organisation	6	subsidiary	1
consensus	1	outsourcing	2	supply	4
contract	2	productivity	3	trader	2
corporate	2	responsibilities	3	value	2
department	3	share	5	warranty	1
executive	2	stake	1		

From the perspective of the quantified outcomes presented in Table 3, it can be inferred that the target vocabulary appears to comprise a variety of forms which L2 learners encounter in the course of business English lexis ac-

quisition. Thus, from the perspective of its variation, the corpus may be considered diverse and representative.

Conclusion

The primary purpose of this study was to examine the pedagogical materials developed by the language instructors for the Business English course and to find out whether the material portrays the language that the learners need to master in order to communicate successfully in the field of business. In the course of experimental studies, it has been revealed that course materials contain diverse vocabulary from the academic domain together with general English lexis.

Concerning the matter of material potential in terms of business vocabulary frequency, variety and range, roughly 40% of words from the Business English WL1, which EFL teachers compiled for their learners as the target vocabulary lists, appear to be frequent in the corpus and contribute to learning opportunities enhancement. Additionally, the range analysis showed that about half of these frequently appearing words are equally spaced in the corpus. On the other hand, the correlation between the business English WL1 (compiled by the EFL instructor) and the business English WL2 (basic business wordlist) is relatively small, specifically, about 27.48%, which indicates that the course materials are noticeably lacking in real-life business vocabulary. Therefore, we can make the following conclusions:

1) WL1 should be customised by excluding easily recognisable words of Latin origin and augmented with business terms selected from the WL2;

2) pedagogical materials need to include texts of varying vocabulary types and provide opportunities for increased repetition of business terms in various word-forms;

3) supplementary course materials from the authentic resources should be applied with the objective to immerse the learners in the environment of Business English.

Our future work will be focused on devising the text specification in order to assess the difficulty level of authentic business texts and to provide additional recommendations on how the corpus software can be adapted for vocabulary examination, classroom use and courses design as well.

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Contribution of the authors:

A. V. Kudryashova, Ya. V. Rozanova performed a theoretical analysis of modern professionally oriented foreign language teaching methods and analysed the current state of this academic discipline using the example of an engineering university; examined the concept and practical application of corpus-based technologies, identified the ways of their possible application with a view to increase the effectiveness of teaching a professional foreign language; developed the algorithms for using corpus-based technologies on the basis of the obtained results, selected meaningful vocabulary and conducted experimental training and described the results.

T. V. Sidorenko provided guidance on the development of the experimental research concept, determined the logic of research, material adjustment, monitoring of the experiment.

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Вклад соавторов:

А. В. Кудряшова, Я. В. Розанова провели теоретический анализ современных методов обучения профессионально ориентированному иностранному языку и проанализировали текущее состояние данной учебной дисциплины на примере инженерного вуза; рассмотрели понятие и практическое применение корпусных технологий, определили пути их возможного применения с целью повышения эффективности подготовки студентов; на основе выявленных положений разработали алгоритмы использования корпусных технологий, отобрали содержательную лексику, провели эксперимент и описали полученные результаты.

Т. В. Сидоренко осуществляла руководство по разработке концепции экспериментального исследования, определяла его логику, скорректировала материал, осуществляла мониторинг эксперимента.

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