Establishing Predominance of English for Specific Purposes within Adult English Language Teaching

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PREFACE

English language has been acknowledged to perform the function of a bridge language and is the official language (though not the only one) of many major international institutions and companies, and is more and more becoming the language of educational instruction (English as a medium of instruction – EMI) at numerous universities for the purpose of internationalization of their study programs, in line with the adopted policies of students and staff mobility, as a means of easier knowledge and expertise exchange, but equally so having the view of the students' professional perspective. English is the language of science, again the claim is not the only one, yet affirming the fact that the core body of scientific journals uses this language for fast and univocal presentation and dissemination of research and advancement. The current situation of the unprecedented speed of scientific developments often does not give space or time for translation, that being the inevitable possibility of losses in translation and the consumption of time. The same applies for the business sector, which now operates on supranational level, outsourcing professionals on the basis of their expertise, regardless of where they come from, as long as their English language skills allow them to fully engage in the working environment. These are certainly just illustrational, hopefully representative situations reflecting the relevance of communication in English.

In such an educational, professional, and scientific, globally interconnected environment, it is the adult population who uses English for Specific Purposes (ESP) rather than General English (GE). ESP provides for highest performativity in the workplace and scientific research allowing for the precise and thus economized transfer of information and knowledge. Ultimately, it is this language in particular, not GE, that enhances the speed and growth of education, business, science, with a direct impact on the whole economic sector of any country that is or strives towards greater inclusion in the world economy.

High performativity is achieved by minute tailoring of the course material and teaching methodology to the desired output in terms of what communicative requirements an employee is to be able to perform. Here lies the overall characteristic of ESP, it is from the very start to the end of the teaching process designed according to, and exclusively for the learners in a given situation. This implies that all the stages in creating the

course are idiosyncratic. Thus, to illustrate this, in a course for gaming developers of an IT company branch that operates by teleworking from a particular country, an ESP practitioner in charge of delivering the course will make teaching material on the basis of all available documents (not all will be given to him/her) of that particular company in that particular country, as well as on the basis of documenting the spoken situations. This practitioner will then extract a unique corpus of words, phrases, relevant syntactical structures, morphology, grammar units, etc., based on which they will start *creating* the teaching and practice material, necessarily taking close care of the underlying cultural issues, age of the learners, their learning preferences and profile, so as to conceptualize teaching material and methodology accordingly. There are textbooks at the market of a (too) general nature on English for IT, but for teleworking gaming developers (of the given age and profile) – most certainly none. Furthermore, the material that this exemplary ESP practitioner makes can rarely be used by anyone else, or at least only in bits.

What is then, the situation of ESP within academia as the primary site of English language education and provider of English language teachers at all levels and areas of education? Is it an acknowledged academic course? Does it have its secure position within the curricula of English language departments' curricula? Are the university ESP courses well established to cater for all the relevant segments of ESP, such being documenting and rationalizing the requirements of the target professional area, principles and guidance in designing teaching and learning material, instructions on how to use the existing, approved English language teaching methodology, modify it, or upgrade, to best suit the learners in the given situation, and many more that a developed English language discipline presupposes? The overall answer to these questions, in light of the current presence of ESP as previously hinted, paradoxically enough is negative.

The reasons for this discrepancy between the observed, obvious situation and the response of educational institutions are outside our aim of investigation. Yet, the authors of the chapters hereby included, testify that this could be the transition period towards recognizing ESP as a linguistic discipline in itself. This book presents diverse scientific and practical research findings that exemplify the scope and depth of scholarly, multi disciplinary and multi perspective work carried out by ESP practitioners. In itself, we conceive of this book as a contribution towards outsourcing what is already present in a plenty – ESP expertise for precise, time and goal efficient English language teaching formats.

Nadežda Stojković, Nijolė Burkšaitienė

CHAPTER ONE

GRAMMAR OR VOCABULARY: STUDENTS' FRIENDS OR FOES?

DRAGANA BOŽIĆ LENARD, IVANKA FERČEC, YVONNE LIERMANN-ZELJAK

Introduction

Since the early 1960s, English for Specific Purposes (ESP) has developed to become a typical approach to English language learning and teaching in tertiary education. The importance of ESP is mirrored in the increasing number of courses and universities influenced by the market needs to provide learners with specialized knowledge. ESP courses are designed in such a way that they assume an intermediate level of language knowledge. Therefore, they are focused on the appropriate level of grammar, register and discourse. Since ESP courses aim to prepare students for chosen communicative environments and prospective work-related settings, ESP courses are needs-driven courses focusing on practical purposes. That being said, a needs analysis is an integral part of any ESP course and should be carried out to (re)design the course curriculum, teaching materials, tasks and objectives. A needs analysis can be performed by conducting surveys or interviewing students who, when invited to actively participate in their learning process, might feel more motivated to learn.

Theoretical background

The needs-driven practical nature of ESP courses is of utmost importance (Dudley-Evan & St. John, 1998; Graves, 2000; Gatehouse, 2001; Kaur, 2007) due to its impact on language curriculum development. According to Belcher (2006), the current focus is on students' subjective needs; their self-assessment, awareness and instructional expectations, hence research

must be conducted in order to determine objectives and improve an ESP teaching-learning process.

The content of ESP courses can be classified into two major categories – grammar and vocabulary. The role of teaching grammar in ESP contexts has been a debatable issue for decades. Teachers generally do not question the importance of grammar instruction; they only debate whether it should be taught in a traditional or communicative way. Students, on the other hand, frequently perceive grammar instruction as a necessary evil and the English teacher as a grammar Nazi whose life goal is to point out students' mistakes. Numerous research studies were carried out to discover teachers' and students' perceptions of teaching grammar. According to Leki (1995), Schultz (2001) and Ellis (2006), teachers prefer communicative activities with less focus on explicit grammar teaching, i.e., teachers believe that employing a discourse analysis approach facilitates the language teaching-learning process. In comparison, researchers found that students favour traditional grammar instruction and error correction because of feelings of insecurity. However, more recent communicative language teaching approaches, which marginalize the importance of explicit grammar instruction and error correction, are considered inadequate (Celce-Murcia et al., 1997; Butler, 2004; Sung, 2006; Littlewood, 2007; Huang, 2016). Moreover, they indicate that focusing on grammatical forms is vital for reaching a high level of accuracy and language acquisition per se. However, students' motivation for learning grammar in ESP classes is usually very low because they generally consider studying vocabulary more useful.

Back in the 1970s, Wilkins (1972: 111) said that "while without grammar very little can be conveyed, without vocabulary *nothing* can be conveyed." Vocabulary knowledge is often perceived as central to communicative competence because a limited vocabulary impedes successful communication. Numerous researchers (Laufer & Nation, 1999; Maximo & Sadowki, 2000; Read, 2000; Nation, 2001 and Gu, 2003) have realized the importance of vocabulary acquisition for both spoken and written activities. The incremental nature of vocabulary acquisition means that words are learned over a period of time and the success of acquiring vocabulary depends on learners' exposure to a particular word. According to Morgan and Rinvolucri (2004), new vocabulary is not learned mechanically but associatively, and the role of a teacher is to use students' previous knowledge and systematically build on it to bring them to the next stage. Even though the importance of studying vocabulary is obvious, students may find it more difficult than studying grammar due to the open-endedness of a vocabulary system. In comparison to grammar, vocabulary

does not have fixed rules students may abide by to acquire it. As noted by Oxford (1990), vocabulary acquisition is the most unmanageable component because of numerous different meanings of a certain word. The responsibility of acquiring vocabulary is both on a teacher, who should systematically present it to students, and the individual, whose motivation for vocabulary mastery should be high.

Methodology

The aim of this research was two-fold. On the one hand, we were interested in finding students' preferences when learning grammatical units and acquiring new vocabulary. For that purpose, we conducted an anonymous survey involving 230 students studying at Josip Juraj Strossmayer University of Osijek, Faculty of Electrical Engineering, Computer Science and Information Technology. Of the entire population of the students studying at the aforementioned faculty, we sampled the students based on the ESP courses they were enrolled in during the winter semester of the 2016/2017 academic year. At the time the survey was conducted, 107 students (47%) of the undergraduate professional study programme were enrolled in the *English Language I* course, while 123 students (53%) of the university undergraduate study programme were enrolled in the *English Language II* course. In addition to the different courses and levels of the study programmes, the students study at six available branches at the faculty. As illustrated in figure 1, 60 Informatics, 26 Power Engineering, 21 Automation (undergraduate professional study programme), 63 Computer Engineering, 37 Power Engineering and 23 Communication and Informatics students (university undergraduate study programme) participated in the survey.

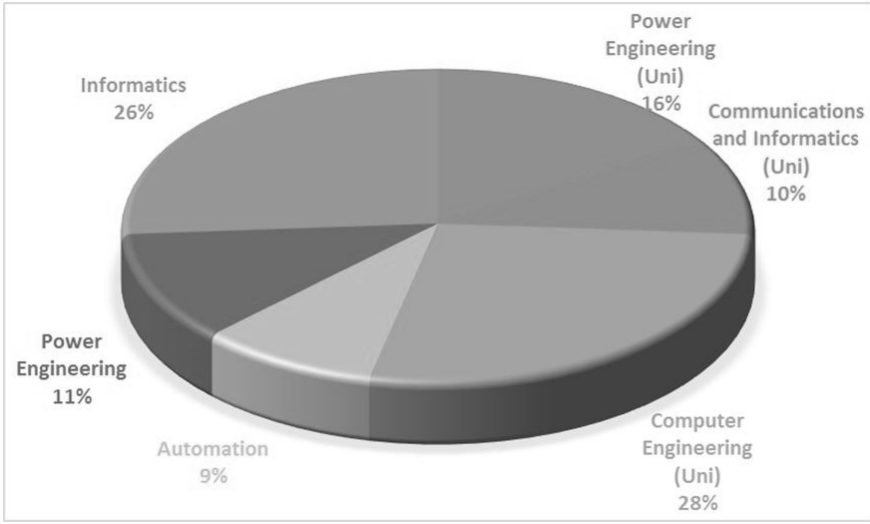

Figure 1 Distribution of the participants according to the branches of their study programmes

Out of 230 students, there were 200 male (87%) and 30 female (13%) students, which is a proportionate share given the number of male and female students normally enrolled in the faculty. Such a wide diversity of the students included in the sample and the equal representation of the population will contribute to obtaining unbiased results. The survey was composed of nine closed-ended questions. The survey results were processed with the software for statistical analysis SPSS, which was used to carry out descriptive statistics, independent sample t-tests and Chi-square, one-way ANOVA and Pearson correlation tests.

The other part of our research dealt with the revision exams taken by the students. After grading two revision exams the students took during the semester, we calculated the number of points each student scored on grammar-related and vocabulary-related exercises. The survey and revision exam results were compared in order to examine if the students' studying preferences and importance evaluations were in line with their revision exam results.

The research questions this study aimed to address were the following:

1) What do the students prefer to study in the ESP classes – grammar or vocabulary?
2) How do the students evaluate studying grammar and vocabulary regarding their importance?
3) What do the students study more when preparing for their revision exams?
4) According to their exam results, what do the students acquire more successfully?
5) Are there any gender differences in studying preferences and evaluations?
6) Are there any branch differences in studying preferences and evaluations?
7) Are there any correlations regarding studying preferences and evaluations?

Results and discussion

Longitudinal classroom observations and the face-to-face informal interviews the authors conducted with their students led them to conclude that students generally believe acquiring new vocabulary is more important than studying grammar; yet they frequently achieve better results in grammar than in vocabulary-related exercises. So, the authors decided to conduct a survey and find out the students' studying preferences then carry out a systematic analysis on their revision exam results in order to empirically study this issue.

Knowledge self-assessment

The students were first asked to self-assess their knowledge of the English language regardless of the grades they have had so far. According to McMillan and Hearn (2008), self-assessment has a powerful impact on empowering students to guide their own learning and gain confidence. The descriptive statistics results showed that 2.2% students from our study think they have insufficient, 13.9% sufficient, 30% good, 37.4% very good and 16.5% excellent knowledge, i.e., the majority of the students think they have a good working knowledge of the English language. While there were no gender differences, using the descriptive statistics test, we did record differences among the branches the students study, as illustrated in figure 2.

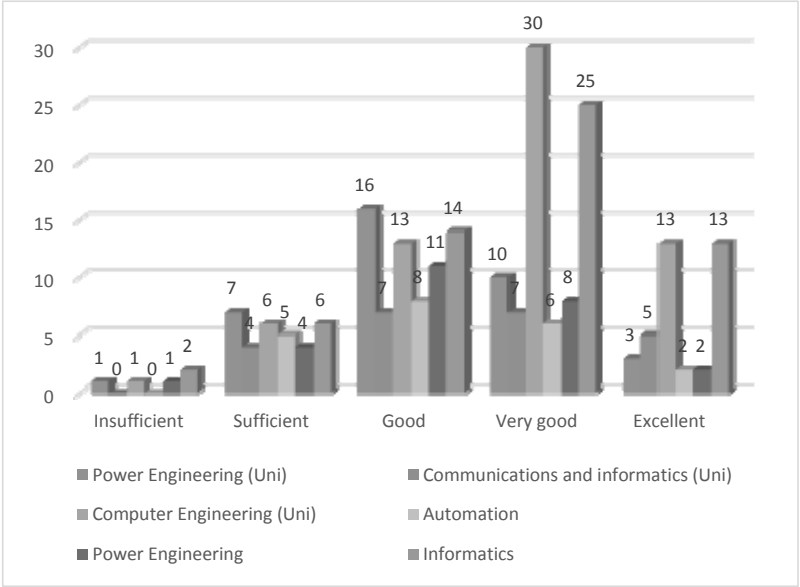

Figure 2 Self-assessment of the English language

Namely, 68.2% of the Computer Engineering and 63.4% of the Informatics students believe they have a very good or excellent knowledge of English in comparison to only 35.1% of the Power Engineering (undergraduate) students. This inspired us to study group differences in more detail by running a one-way ANOVA test and post hoc Tukey tests. As stated, English language self-assessment of the Computer Engineering students is quite high and it significantly differs from the self-assessment done by the Power Engineering (undergraduate), Automation and Power Engineering (professional) students ($p = .003$, $p = .022$, $p = .013$, respectively). Similarly, the Informatics students' self-assessment significantly differs from the one done by the Power Engineering (undergraduate) and Power Engineering (professional) students ($p = .013$, $p = .038$, respectively). To put it differently, the Computer Engineering and Informatics students self-assess their knowledge of English the highest. We will see later on whether their revision exam results confirm their high self-assessment.

Studying preferences

We were interested in the students' preferences, i.e., what they prefer to study in the ESP classes – grammar or technical vocabulary. After running the descriptive statistics test, the results revealed that 166 students (72%) said they preferred to study new vocabulary, 62 (27%) preferred grammar and 2 answers were missing. This view of vocabulary learning as a fundamental and perennial aspect of continuous language learning was recognized by Thornbury (2002), Zimmerman (2009) and Gifford (2013). Surprisingly, our results are not in accord with similar research done by Schultz (2001), Zhou (2009) and Loewen et al. (2009), who found that students believe grammar is an essential basis for mastering a language; a foundation that has to be firmly established to build a vocabulary upon.

Furthermore, the independent sample t-test showed that there is a statistically significant difference ($p = .032$) between the male and the female students' preferences. A closer analysis done by the Chi-square test pointed to intragroup differences. Precisely 75% of the male students prefer studying vocabulary while 25% prefer grammar, which is a statistically significant difference ($p = .000$). In comparison, 57% of the female students prefer vocabulary while 43% prefer grammar, i.e., the difference is not significant ($p = .465$). There are a couple of possible explanations for this. When enrolling in the faculty, all students have studied English for at least four years, with the majority having eight years of experience. However, even after studying English for four years, students have probably gained confidence in their language skills and feel that they have acquired a sufficient level of grammar skills, which is probably why they prefer to acquire new technical vocabulary. It seems possible that the male students believe they had acquired enough grammatical knowledge with which to engage in a conversation so turning their attention to enriching their vocabulary seems like a reasonable choice. The female students, on the other hand, did not think in the same way, believing that both grammar and vocabulary are equally important to study. The female students do not give preference to widening their vocabulary at the expense of mastering their grammatical knowledge. The phenomenon of women's hypercorrectness was recorded in the 1970s by Labov (1972), Trudgill (1974) and Lakoff (1975). The researchers proposed that women show a preference for more prestigious standard speech forms in order to gain greater mobility in male-dominated communities. This phenomenon was confirmed in numerous recent research studies (Eckert, 1998; James, 1996; Holmes, 2001; Nevalainen, 2002; Coates, 2015; Božić Lenard, 2016) to name a few. Society sets higher standards for female behaviour so their insecurity of social position

is associated with their sensitivity to using standardized speech more than men, which might be why the female students from our study felt the need to master their grammatical skills as well as broaden their vocabulary in comparison to the male students who are less reluctant to use non-standardized forms.

Furthermore, using the Chi-square test, we also analysed whether there are some significant differences in studying preferences according to the branch the students study at. Interestingly, yet rather anticipated, the students studying at all six branches prefer to study vocabulary in their ESP classes. More precisely, 67% of Power Engineering (undergraduate, $p = .033$), 78% of Communications and Informatics ($p = .007$), 70% of Computer Engineering ($p = .000$), 71% of Automation ($p = .050$), 77% of Power Engineering (professional, $p = .006$), and 73% of Informatics ($p = .000$) students prefer vocabulary over grammar, and according to the p values, all the preferences are statistically significant. It is possible to hypothesize that the students believe that at this point of education, given the fact that they have not studied technical vocabulary in their primary and secondary education, vocabulary is more useful. It is reasonable to expect a strong positive correlation between studying preferences and future usefulness, which will be elaborated on in the following subsection. Furthermore, this result might point to a positive correlation with vocabulary-related exercises on the revision exams, which will be dealt with in subsection 4.8.

Future usefulness

In addition to preferences in ESP classes, the students were asked to determine whether studying grammar or vocabulary is more useful for their future profession. A total of 198 students (86.1%) believe technical vocabulary is more useful, 31 students (13.5%) see grammar as more profitable and 1 answer is missing according to the descriptive statistics test. This result is rather expected since students often instinctively recognize the importance and benefit of acquiring new vocabulary. Also, the result is consistent with similar research and corroborates the ideas of Schmitt (2000), Cameron (2001) and Harmon et al. (2009) that learners' development depends on the acquisition of new vocabulary.

As opposed to the studying preferences, where we recorded intragroup gender differences, when it comes to the future usefulness, both the male and female students agree that enriching vocabulary is more useful for their future profession, with 171 male students (86%) and 27 female students (90%) choosing vocabulary over grammar. To put it differently,

both groups of students voted for vocabulary over grammar, with their choice being statistically significant (p = .000 in both cases) as recorded by the Chi-square test. Furthermore, intragroup branch differences were examined. As the results given in table 1 show, all students, regardless of the branch they study at, agree that widening their vocabulary is more useful for their future professions than grammar.

Table 1 Chi-square results on studying preferences with respect to the branches

Course	Type	Observed	Expected	Chi-square	
Power Engineering (Uni)	Grammar	**N** 3	**N** 18.5	Chi-square df Asymp.Sig.	25,973 3 **.000**
	Vocabulary	34	18.5		
	Total	37			
Communications and Informatics (Uni)	Grammar	4	11.5	Chi-square df Asymp.Sig.	9,783 1 **.002**
	Vocabulary	19	11.5		
	Total	23			
Computer Engineering (Uni)	Grammar	11	31.5	Chi-square df Asymp.Sig.	26,683 1 **.000**
	Vocabulary	52	31.5		
	Total	63			
Automation	Grammar	1	10.5	Chi-square df Asymp.Sig.	17,190 1 **.000**
	Vocabulary	20	10.5		
	Total	21			
Power Engineering	Grammar	5	13.0	Chi-square df Asymp.Sig.	9,846 1 **.002**
	Vocabulary	21	13.0		
	Total	26			
Informatics	Grammar	7	20.0	Chi-square df Asymp.Sig.	77,700 2 **.000**
	Vocabulary	52	20.0		
	Total	59			

Additionally, we checked whether there are some significant differences between the male and female students regarding the branches they study at. While all other male and female students opted for vocabulary as more useful, the female students studying Communications and Informatics (p = .102) and Computer Engineering (p = .059) were not that certain. This result further supports our idea that female students are pressured to use prestigious standard language forms and perceive both vocabulary and grammar as equally useful in their future professions.

Given the results reported in subsection 4.2. on the students' preferences for studying vocabulary, we were inspired to examine whether a correlation between the students' vocabulary studying preferences and opinion that vocabulary is more useful exists. Contrary to expectations, using the Pearson Chi-square correlation test, this study did not find a statistically significant correlation ($p = .750$) between studying preferences and usefulness. A possible explanation may be that when deciding what they like to do in their ESP classes, the students do not think in terms of its usefulness; rather, their studying preferences might be related to the method and quality of teaching, types and diversity of exercises or quality of teaching materials. However, a more detailed analysis including the variables of gender and branches pointed to a statistically significant positive correlation, i.e., the male students studying at the undergraduate Power Engineering ($p = .029$) and professional Power Engineering ($p = .044$) branch probably prefer studying vocabulary due to its pragmatic nature.

Importance of studying grammar

Disregarding one's preferences, grammar is a necessity because it plays an essential role in establishing formal communication. Studying grammar is undeniably important in the process of language learning; however, students' attitudes on this issue cannot be ignored. The students from our study were asked to evaluate the importance of studying grammar using a five-level Likert scale – 1.3% of the students evaluated it as not important at all, 6.5% as low importance, 20.9% as neutral, 60.4% as moderately and 10.9% as very important, i.e., 71.3% of the students do recognize the importance of studying grammar. This result is consistent with several recent studies (Schultz, 2001; Zhou, 2009; Loewen et al., 2009; Incecay & Dollar, 2011) that reported on students' attitudes towards learning grammar as the cornerstone of language learning. Students' attitudes cannot be ignored because attitudes play an important role in motivation and the effectiveness of class activities and learning itself.

The analysis of the students' attitudes on the importance of studying grammar was extended to potential gender and branch differences. The independent sample t-test recorded that 138 male students (69%) believe that studying grammar is moderately or very important in comparison to 26 female students (87%), i.e., the gender difference in the students' attitudes on the importance of studying grammar is statistically significant ($p = .022$). This finding again supports our claim that female students

recognize the importance of studying grammar due to the societal pressure women are put under.

The issue of the importance of studying grammar was examined with respect to the branches the students study at. The descriptive statistics test results are given in figure 3.

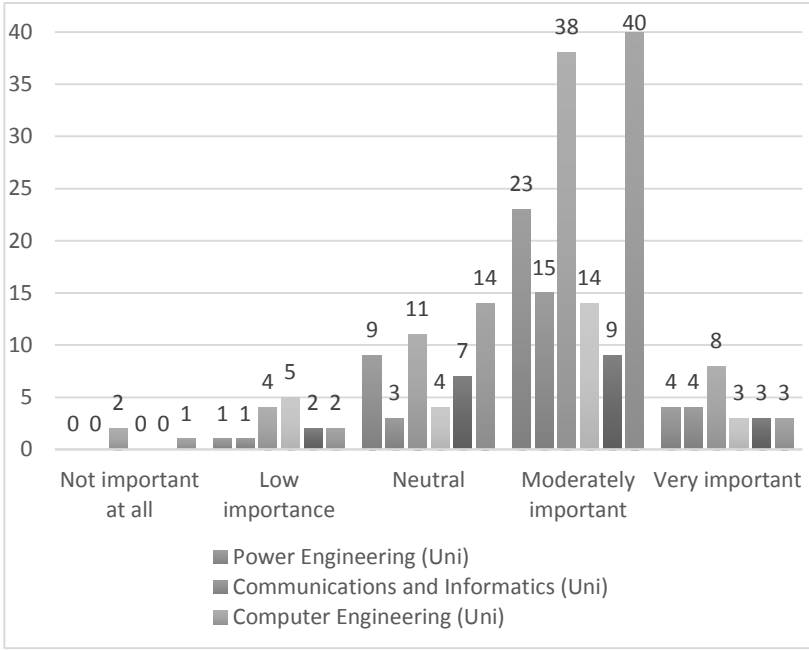

Figure 3 Opinion on the importance of studying grammar

We were also interested in finding out if these differences were statistically significant so we ran the one-way ANOVA test, which was unable to record any significant differences ($p = .591$) among the branches.

Using the independent sample t-test, we wanted to analyse whether there were any significant differences between the students' studying preferences and their opinion on the importance of studying grammar. As reported in subsection 4.2., the female students almost equally prefer to study grammar and vocabulary in the ESP classes so no significant difference ($p = .086$) was expected. However, we did find a statistically significant difference ($p = .011$) in the subset of the male students, i.e.,

even though the male students prefer to do vocabulary-related exercises in the ESP classes, they do recognize the importance of studying grammar. The difference was even more significant in the subset of the Computer Engineering students who, despite preferring to study vocabulary in the ESP classes, are well aware of the importance of studying grammar ($p = .002$).

Importance of studying vocabulary

Vocabulary acquisition is a long-term process that requires a lot of effort and work. Similar to the question on the importance of studying grammar, the students were asked to evaluate the importance of studying vocabulary by choosing one option in a five-level Likert scale. The descriptive statistics test results showed that there were no students believing that vocabulary is not important; 1 student (0.4%) thinks studying vocabulary is of low importance, 17 students (7.4%) believe it is neutrally, 138 (60%) moderately and 74 (32.2%) very important. According to these results, 92.2% of the students recognize the importance of studying specialized vocabulary; hence, our results support the idea of Laufer and Nation (1999), Read (2000), Maximo and Sadowki (2000) and Gu (2003) that acquiring vocabulary is crucial. Furthermore, our results are in line with similar, more recent, findings of Walters (2004), Liermann-Zeljak and Ferčec (2015) and Alqahtani (2015), whose participants recognized the acquisition of vocabulary as the central factor in language learning.

In comparison to gender differences on the importance of studying grammar, the independent sample t-test could not record statistically significant gender differences on the importance of studying vocabulary ($p = .759$), i.e. the male ($M = 4.21$) and the female ($M = 4.47$) students equally believe that acquiring vocabulary is extremely important for their language development. This is a rather expected finding since students naturally feel the need to acquire specialized vocabulary. Also, we only expected to find gender differences with respect to grammar, which several of our previous findings corroborated.

As in the previous subsection, we were interested in the response distribution regarding the branches the students study at. Unlike the results on the importance of studying grammar, the results provided in figure 4 point to a less widespread distribution of the students' responses.

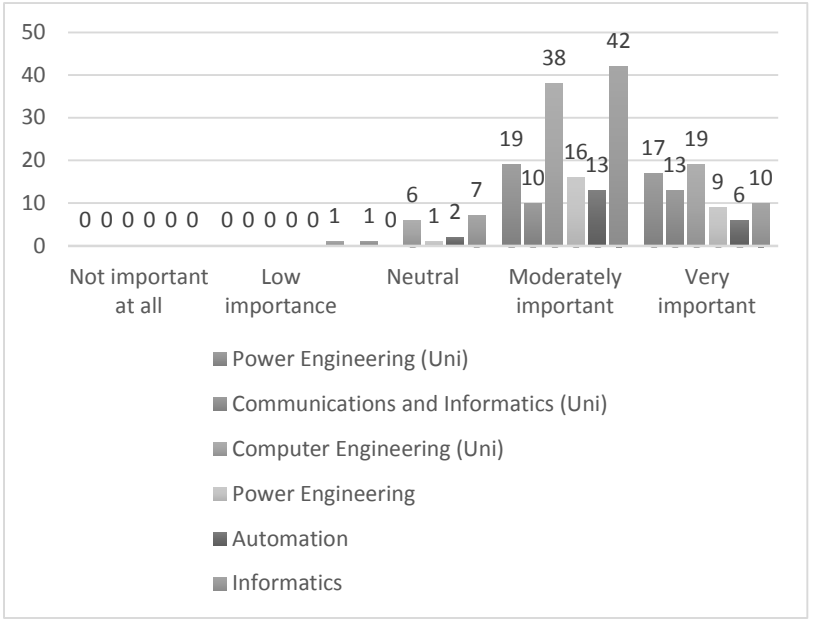

Figure 4 Opinion on the importance of studying vocabulary

However, despite generally agreeing on the importance of studying vocabulary, there are some statistically significant differences recorded by the one-way ANOVA test. Namely, 70% of the students of Informatics believe studying vocabulary is moderately and only 16% think it is very important compared to 51% of the undergraduate Power Engineering students, who think it is moderately and 46% who believe it is very important. Furthermore, 43% of the Communications and Informatics students think it is moderately and 56% it is very important. To put it differently, the students of Informatics are not as convinced as the students of Power Engineering ($p = .009$) or Communications and Informatics ($p = .002$) that acquiring new vocabulary is vital for language learning.

Additionally, the variables of gender and branch were combined and the potential differences examined by the one- way ANOVA test. Only 17% of the male students of Informatics perceive studying vocabulary as very important as opposed to 75% of the female students of undergraduate Power Engineering ($p = .030$) and 83.3% of the female students of Communications and Informatics ($p = .037$). So, our finding that the students of Informatics are not strongly convinced that studying

vocabulary is an absolute necessity should be further subdivided into the group of the male students of Informatics.

We wanted to examine whether a correlation between the importance of studying grammar and vocabulary existed and what type the correlation was. The Pearson correlation test pointed to a strong positive correlation [r_p (230) = .229, p = .000], which means that those students who highly evaluate studying grammar have the same opinion on studying vocabulary. The analysis was further extended to potential gender and branch differences. Since our previous findings pointed to the female students putting more emphasis on grammar, the absence of any statistically significant difference [r_p (30) = .106, p = .578] between the importance of studying grammar and vocabulary by the female students did not come as a surprise and supports our previous findings. The significant correlation [r_p (200) = .225, p = .001] was recorded for the male students, i.e., those male students who believe studying grammar is very important think the same about studying vocabulary. Two significant differences with respect to branches were recorded. Namely, the opinion of the undergraduate Power Engineering and Informatics students on the importance of studying grammar and vocabulary has a strong positive correlation [r_p (37) = .457, p = .004; r_p (60) = .257, p = .047, respectively].

The independent sample t-test did not find a statistical significance between the students' preferences in the ESP classes and their opinion on the importance of studying vocabulary (p = .885). It seems possible that the students are aware of the importance of studying vocabulary in general but their preferences in the ESP classes are related to factors such as the quality of teaching and/or variety of materials and exercises. One anticipated finding is the association between the importance of studying vocabulary and its future usefulness (p = .036).

Studying for the revision exams

The significance of thorough preparation for revision exams need not be specially stressed because everybody knows it is a key to ensuring success. However, preparation does not include only studying immediately prior to revision exams; rather, it includes acquiring knowledge during classes and writing homework assignments. Since the students from our research recognized the importance and usefulness of studying vocabulary, we expect that they study it for their revision exams more than they study grammar. The descriptive statistics test showed that 102 students (44.3%) study grammar more than vocabulary, 121 students (52.6%) devote more attention to studying vocabulary and 7 students (3%) did not respond to

this question, which might mean that they do not study for their revision exams at all. The Chi-square test showed that this difference is statistically significant (p = .000) from the expected frequencies. Interestingly, all 7 students who did not respond to this question are men, which points to the female students being more responsible and mature in completing their tasks or, in this case, the survey.

Naturally, we were interested in potential gender and branch differences. Both the male and the female students spend more time studying vocabulary for the revision exams, which is expected given the fact that specialized vocabulary is something the majority of them have never dealt with. As provided in table 2, the Chi-square test revealed that the difference in the female's choice of studying grammar or vocabulary for the revision exams is not statistically significant (p = .068), while the male students' habit of focusing on studying vocabulary significantly differs (p = .000) from the expected frequencies.

Table 2 Chi-square results on gender differences in studying for the revision exams

Sex	Type	Observed N	Expected N	Chi-square	
Male	Missing	7	66.7	Chi-square	80,710
	Grammar	92	66.7	df	2
	Vocabulary	101	66.7	Asymp. Sig.	**.000**
	Total	**200**			
Female	Missing	0	15.0	Chi-square	3,333
	Grammar	10	15.0	df	2
	Vocabulary	20	15.0	Asymp. Sig.	**.068**
	Total	**30**			

Further, we did a descriptive statistics analysis, the results of which are given in figure 5.

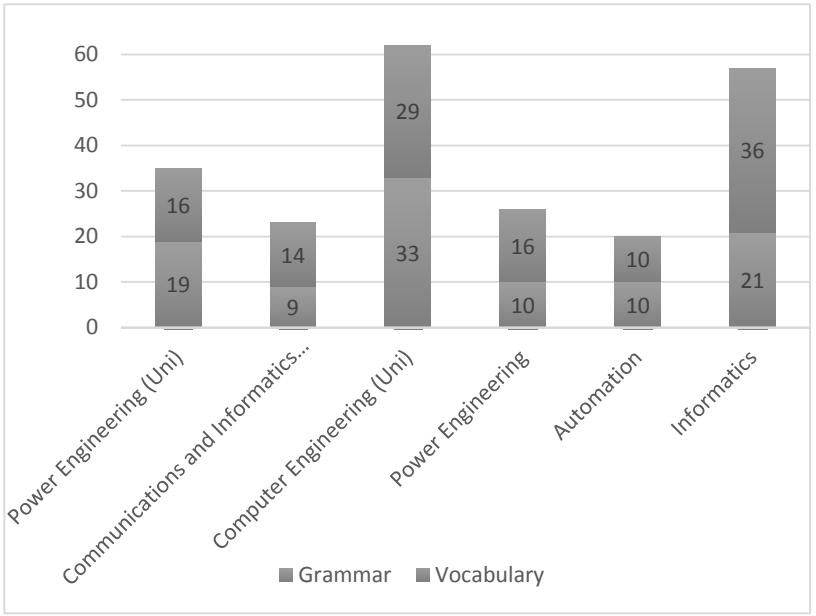

Figure 5 Studying preferences for the revision exams with respect to the branches

As illustrated, several undergraduate Power Engineering and Computer Engineering students study grammar more than vocabulary for the revision exams. A possible explanation for this might be that they have poorer background grammatical knowledge. Another possible explanation might be that there are more grammar-related exercises in the revision exams so studying grammar is more beneficial.

Furthermore, using the Chi-square test, it was examined whether the expected frequencies of the students' studying choice differed from the observed frequencies. There were no significant differences of the Communications and Informatics ($p = .297$), Automation ($p = .210$) and professional Power Engineering students ($p = .297$), which implies that they equally study grammar and vocabulary for the revision exams. In comparison, statistically significant differences were found for the undergraduate Power Engineering ($p = .001$), Computer Engineering ($p = .000$) and Informatics ($p = .000$) students. However, the undergraduate Power Engineering and Computer Engineering students study grammar while Informatics students study vocabulary more for the revision exams.

To be more precise, the Computer Engineering male students study grammar significantly more than vocabulary ($p = .000$), while their male

Informatics colleagues study vocabulary significantly more than grammar ($p = .000$). This finding is somewhat surprising because the Computer Engineering and Informatics study programmes are very similar and the number of unknown vocabulary items is pretty much the same. This inconsistency has a couple of possible explanations. The Computer Engineering male students might have broader previous knowledge so they can compensate for it and focus on grammar. Another explanation is that the grammar-related exercises the Computer Engineering male students take are more difficult and/or outnumber vocabulary-related exercises, hence directing their attention to studying grammar is a reasonable choice.

Possible correlations of studying preferences in the ESP classes, the students' opinion on future usefulness and studying for the revision exams seem logical so we ran the Pearson Chi-square correlation test to examine them. The test showed that there is no statistically significant correlation ($p = .952$) between the students' preferences in the ESP classes and studying for the revision exams, which might suggest that their preferences in the ESP classes are based on the quality of teaching resources and types of exercises. Also, no gender ($p = .193$) or branch differences ($p = .530$) were recorded. Furthermore, we were unable to find significant correlations between the students' opinion on future usefulness and their revision exam studying habits ($p = .376$). Similarly, no gender ($p = .123$) or branch differences ($p = .376$) were found. This discrepancy might be attributed to the students' perception of the learning process – even though they recognize the importance and usefulness of acquiring new vocabulary, they study to pass their revision exams and not to actually learn something that will be beneficial to them in the long run.

Achieving results on the revision exams

The final survey question was for the students to self-evaluate whether they master grammar or vocabulary better in the revision exams. Since all students are invited to check and discuss their score on the revision exams during the teachers' office hours, this was not a difficult inquiry for the students. The descriptive statistics test showed that 120 students (52.2%) think they get better results on vocabulary-related exercises and 108 (47%) on grammar-related exercises; 2 answers (0.9%) were missing.

Breaking the descriptive statistics results down to gender, presented in table 3, the male students think they achieve better results in vocabulary-related and the female in grammar-related exercises. The Chi-square test pointed to a significant difference – the female students think they achieve

better results in grammar-related exercises significantly more than in vocabulary-related exercises (p = .000), while the male students' results did not indicate such a significance (p = .144).

Table 3 The students' self-evaluation of the revision exam

Gender	Type	Frequency	Valid percent
Male	Grammar	89	44.5
	Vocabulary	109	54.5
	Missing	2	1.0
	Total	200	100.0
Female	Grammar	19	63.3
	Vocabulary	11	36.7
	Missing	0	0
	Total	30	100.0

When it comes to breaking down the descriptive statistics results to the branch the students study at, illustrated in figure 6, we see that the Communications and Informatics, Computer Engineering and Informatics students believe they achieve better results in grammar-related exercises.

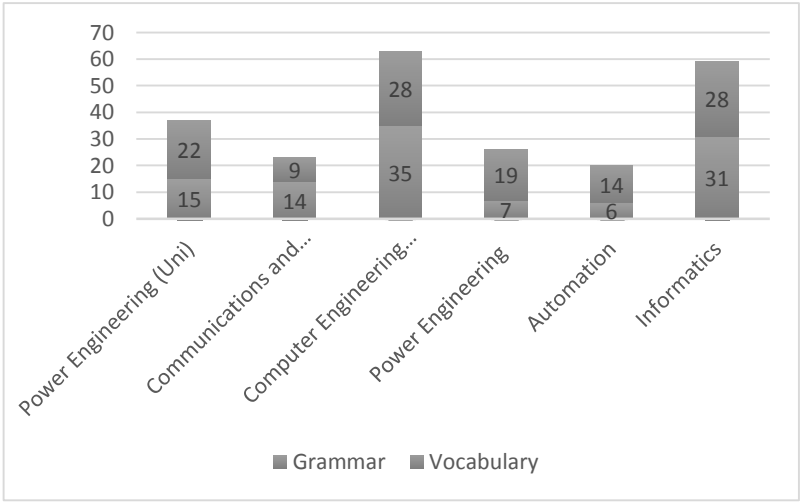

Figure 6 The students' self-assessment of the revision exams with respect to branches

Carrying out the Chi-square test, it was recorded that the male Computer Engineering ($p = .041$) and Informatics ($p = .017$) students think they achieve significantly better results in grammar-related exercises ($p = .041$) whereas male Automation students believe they achieve significantly better results in vocabulary-related exercises ($p = .020$). It will be interesting to check whether their self-assessment is in line with their actual results in the revision exams, which we will elaborate on in the following subsection. If the results on students' studying habits, reported in the previous subsection, are compared to these results, one discrepancy stands out. The male Computer Engineering students answered that they study grammar significantly more than vocabulary for the revision exams so their self-assessment of achieving better results in grammar-related exercises in the revision exams is rather expected and logical. However, the finding that was unexpected is the one including the male Informatics students. They opted for vocabulary as something they study significantly more for the revision exams; yet, they believe they achieve significantly better results in grammar-related exercises. There are several possible explanations for this discrepancy. Firstly, the students do not spend enough time studying for the revision exams and/or they start studying too late, which results in poor acquisition of the studying content. Secondly, if they do spend enough time studying, the studying methods and techniques of the male Informatics students are inadequate, resulting in a waste of time and poor acquisition of the studying content. Finally, the students are not honest when completing the survey; rather, they complete it to be in line with possible teachers' expectations or to complete their task of doing the survey regardless of its content.

Furthermore, interesting findings were recorded with the Spearman Chi-square correlation test with respect to the ESP classes' preferences and revision exam results. Those students who prefer to study grammar in the ESP classes achieve significantly better results in grammar-related exercises in the revision exams, i.e., the students who prefer to study vocabulary in the ESP classes achieve significantly better results in vocabulary-related exercises ($p = .000$). This result speaks in favour of the quality of teaching and use of high quality teaching resources and class materials. The same test was conducted after breaking the file down to gender and the results were identical – both the male ($p = .003$) and female students ($p = .034$) who prefer to study grammar or vocabulary in the ESP classes achieve significantly better results in activities they prefer to do in class.

Similar results were recorded for some branches. Namely, the undergraduate Power Engineering ($p = .003$) and Computer Engineering

(p = .010) students' preferences in the ESP classes are in accord with their self-assessment revision exam results while no such correlations were found for the Communications and Informatics (p = .280), professional Power Engineering (p = .146), Automation (p = .072) Informatics students (p = .274). This might mean that the undergraduate Power Engineering and Computer Engineering students are more motivated, engaged and interested to learn in the ESP classes. We also wanted to analyse any gender differences on this issue and found that the male undergraduate Power Engineering (p = .014), male Computer Engineering (p = .013) and female Informatics (p = .008) students are the ones whose class preferences are in line with their revision exam results.

When it comes to the students' opinion on future usefulness and their self-assessment in the revision exams, only one significant difference was recorded – those female Computer Engineering students who believe grammar is more useful for their future profession achieve better results in grammar-related exercises and those who perceive vocabulary as more beneficial achieve better results in vocabulary-related exercises (p =.008). It seems possible that the female Computer Engineering students spend more time studying and achieve better results in what they consider more beneficial for their future, i.e., they do not study only to pass their revision exams but to acquire knowledge.

Finally, several significant negative correlations were found between the students' self-assessment in the revision exams and their opinion on the importance of studying grammar. Believing that studying grammar is of low importance, the undergraduate Power Engineering (p = .050), male Computer Engineering (p = .041) and male professional Power Engineering (p = .030) students probably spend more time studying vocabulary, which results in high scores in vocabulary-related exercises (p = .050), at least in the students' opinion. How each gender and branch actually scored in two revision exams will be presented in the following subsection.

The revision exam results

The other part of our research was a detailed analysis of the two revision exams the students took during the winter semester of the 2016/2017 academic year. After the exams had been graded, we calculated the points of grammar and vocabulary-related exercises for each student and summed up the results. The results were compared to the maximum number of grammar and vocabulary-related exercises and the percentage was calculated. The percentage of the correct grammar-related exercises was

66.27 compared to 59.08 for the correct vocabulary-related exercises. Even though the difference was not statistically significant ($p = .191$), it is clear that the students scored better in the grammar-related exercises. This is not in line with the results on the students' studying habits, reported in subsection 4.6, which showed that 44.3% of the students study grammar and 52.6% vocabulary for their revision exams. It is likely that the students' studying habits and methods are inadequate or inappropriate.

Since we broke down all the previous results to gender and branches, we will do the same with the exam scores for the purpose of comparison. As presented in figure 7, the students from all six branches scored better in grammar than vocabulary-related exercises.

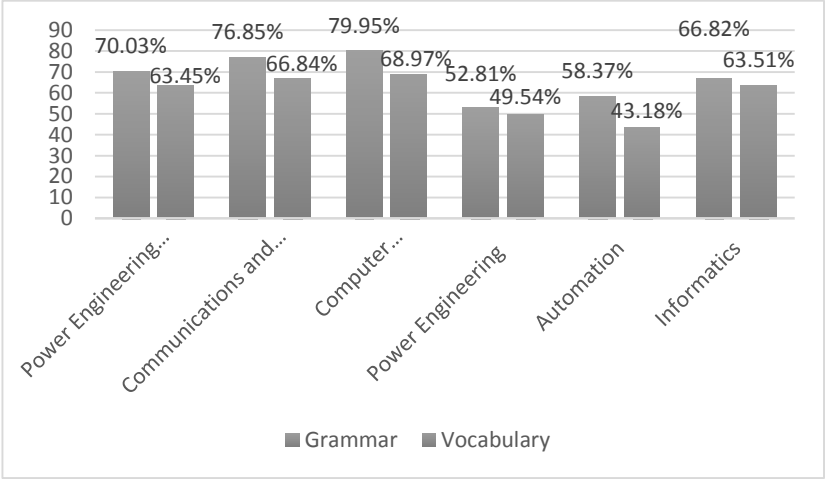

Figure 7 The revision exams with respect to branches

In spite of the fact that the differences are relatively small and insignificant, the fact is that the students obviously acquire grammatical rules better than vocabulary items. A possible explanation is in the nature of the two contents. Grammar has fixed rules students can go by. Moreover, engineering students, who think in a logical way, may perceive grammar rules as mathematical formulas, which they are frequently exposed to, thus finding them very easy to acquire. On the other hand, the open-endedness of a vocabulary system may demotivate students, make their studying less efficient and result in poorer acquisition. When the revision exam results are compared to the students' studying habits

presented in figure 5, we can see some discrepancies. The undergraduate Power and Computer Engineering students said that they studied grammar more than vocabulary for the revision exams and their exam results do confirm that. In comparison, in spite of focusing more on vocabulary than grammar, the Communications and Informatics, professional Power Engineering and Informatics students scored better in grammar-related exercises.

Better exam results in grammar than vocabulary-related exercises were recorded for both the male and female students; however, the differences were more obvious with the female students. More precisely, the female students studying Computer Engineering scored 89.06% in grammar and 66.62% in vocabulary-related exercises. Their female colleagues enrolled in the undergraduate Power Engineering study programme scored 78.26% in grammar and 55.96% in vocabulary-related exercises. It seems possible that the fixed rules and closed-ended nature of grammar makes it more appealing to female students. Also, societal pressure on women to use more prestigious language forms might subconsciously encourage them to spend more time studying grammar. On the other hand, female students might not be reading specialized technical readings in their free time, making their vocabulary less rich than that of their male colleagues.

Conclusion

The nature of this research was two-fold. Firstly, an anonymous survey, involving 230 students studying at the Faculty of Electrical Engineering, Computer Science and Information Technology Osijek, was conducted. The survey aimed to examine the students' studying habits and preferences in learning grammatical and vocabulary units as well as their views on the usefulness of the two contents. The second part of the research was a comparison of the survey and revision exam results. Generally, the students prefer to do vocabulary in the ESP classes possibly because it is closer to their field. However, we found gender differences, i.e., the female students prefer grammar while the male students give preference to acquiring new technical vocabulary at the expense of mastering grammar. The most obvious finding from this study was that the students believe acquiring vocabulary is more useful for their future profession regardless of their gender or the branch they study at. Interestingly, no statistically significant correlations were found between the students' studying preferences and views on future usefulness, which suggests that the students' studying preferences depend on the quality of teaching and diversity of exercises rather than pragmatics.