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A RESEARCH INTO THE MOST FREQUENT ERRORS IN TECHNICAL TEXT TRANSLATIONS AT THE UNIVERSITY OF ZENICA

Abstract

The paper identifies certain problem areas related to some of the most common error commitments in translating technical texts. The aim of the author is to raise translators' awareness in this respect and thus help them reduce such errors as much as possible. On the backdrop of the identified problem areas, translators are paid attention to the fact that the same type of error may be negligible in one register and completely unacceptable in another. In technical translation, small incorrectness, or ambiguity, may lead to a vast material (financial) damage with legal implications. Therefore, it is important to detect and highlight the weakest spots of this type of translation and thus help predict and minimise such errors.

Key Words*: Translation, Error, Polysemy, Synonyms, Collocations*

Introduction

Technical translation belongs to a group of specialized translations produced by technical writers. Such documents include: manuals, user guides, texts relating to technological subject areas or the practical application of scientific information. Although the presence of specialized terminology is a feature of technical texts, specialized terminology alone is not sufficient for classifying a text as technical (Byrne, *2006).* Thus, it is more precise to say that technical translation covers translation related to different kinds of specialized texts, requiring a high level of subject knowledge, mastery of the relevant terminology and writing conventions. (Williams and Chesterman, 2002:12).

Even though the process of translating technical texts is quite demanding, such translations are not always provided by professional translators. In our country, it is often the case that people who speak little English set out easily to translate different texts, including the

technical ones. They are not aware of the traps that such texts pose before them. Neither are they aware of the fact that the information being translated should be processed rather than merely transmitted. However, the processing requires some effort on behalf of the translator in terms of his/her gaining some technical knowledge and/or consulting people with relevant expertise. Unfortunately, very few people do that. As a result, we are often faced with poor translations, full of reiterated errors.

Obviously, such occurrences affect the translation quality. In order to assure the quality of translations some scholars such as House (1977) and Lauscher (2000) offered methods for determining what makes a good, adequate or appropriate translation. Nevertheless, the problem of translation errors remains the issue dealt with only at philological institutions and far from professional practice.

For the abovementioned reasons, the Faculty of Mechanical Engineering undertook a leading role in Bosnia and Herzegovina in introducing Technical English to the students of its technical faculties. The aim of such an initiative was to enable the students *to be their own translators* and thus to facilitate their studying the content of the subject matter from the growing number of textbooks written in English.

In addition, the course was designed to help future engineers in their endeavours at work, while dealing with different texts such as: manuals, instructions etc. In other words, the primary aim is the prevention of potentially serious problems occurring as a consequence of poor quality translation (e.g. a significant material damage to machines and plants).

The awareness of the management of the Faculty of Mechanical Engineering, in terms of significance of English, goes even further by their introducing CLIL (Content and Language Integrated Learning) in the language classroom. Not only was the approach designed to attract foreign students, but to encourage and help our students' and our engineering professors' mobility within the EHEA (European Higher Education Area).

The idea behind this paper is to examine and identify the most common errors that students and academic staff at these faculties make in their translations. The research is intended to help the teaching process at the said Faculties, which can now be more focused on eradication of the most frequent errors, rather than on

some less relevant issues. At the same time, it provides important guidelines to both the academic staff at the technical faculties, who are an interested party in the process of CLIL, and to professional translators.[1]

Theoretical grounds and a review of the most common errors

The paper is grounded in the work of Byrne (2006), Newmark (1995) and Bell (1991) who were dealing with this particular type of translation – technical translation. A part of the paper related to the most common *grammatical* errors in technical translations relies heavily on the work of Šestić and her findings in terms of non-finite forms in technical discourse (Šestić, 2013). The research also relates to the results of earlier projects in content and language integrated learning implemented at the technical faculties of the University of Zenica (Tarabar, 2013.).

Lexical errors

In terms of lexis, most authors identify four main types of errors.[2] According to Ivir (1985), those are the errors typical of translations committed by professional translators. As indicated in the Introduction, the paper does not consider this type of translation. It focuses on the translations done by sort of ''language laymen'' i.e. by engineering students and their teaching staff. Therefore, the intention of the paper is to test the presence of these particular errors in the student/teaching staff translations and to foresee possibilities of their overcoming them.[3]

The research, intended to identify the most frequent errors, has indeed proved a prevalent presence of the said errors in its corpus, but it also brought some other types of errors to the surface.

The errors which are usually designated as the most frequent ones are related to the following phenomena:

1. Polysemy
2. False friends

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[1] Initially, the paper was imagined to include mistakes made by future professional translators, i.e. students from the Faculty of Phylosophy who enrolled on the Technical English Register course. The aim was to compare their mistakes to the ones made by students at the technical faculties. However, the number of translations available was insufficient and was not relevant for the reasearch.

[2] This means that they are the most frequent ones.

[3] The issue of overcoming errors may well be a part of another paper as it requires a wider elaboration.

3. Synonyms

4. Redundancy

In the following lines, while using the examples from the research, a brief review of these errors will be given.

Polysemy

It is a well-known fact that many words have a number of meanings. The research proved that participants quite often failed to notice that a word (which seems familiar to them) has a meaning different from that which it has in other contexts, or they are simply unable to choose the best meaning from those listed in a dictionary.

A good example is the word *'spring'*. The first meaning that can be found in a dictionary is '*proljeće*' (in a case of noun), or '*skočiti*' (in a case of verb). In a technical discourse it appears in several different meanings: '*opruga*' (in machine elements), '*gibanj*' (in transport - trucks), '*izvor vode*' (in texts dealing with water supply). Unfortunately, students usually do not check any other meaning but the first ones listed, thus producing serious errors in their translations.

In the sentence:

If the driver releases the brake, the brake shoe spring restores the shoe to its original position.

the expected translation was :

Ako vozač otpusti kočnicu, opruga kočione papučice vraća papučicu u početni položaj.

Nevertheless, some students made errors such as:

Ako šofer otpusti kočnicu, kočiona papučica skoči i vrati cipelu u originalni položaj etc.

Another 'spring', now in a water supply context: *'There is a spring in that area*' , instead of ' *U tom kraju se nalazi izvor vode*', was translated as *'U tom kraju je proljeće*.'

There were many other errors of the sort, to list but a few: *'cables in the port'* were translated as *'užad u luci'* instead of *'kablovi na ulazu'*. Also, a good example can be an expression *'permanent set'* which normally occurs in a context of stress and strain. It can by no means be translated as *'trajna garnitura'* , which was a common student error. The proper translation (the one being linked to the context) is *'trajna deformacija'*.

Such errors are easy to be detected because the translation does not make sense. However, it is interesting that many students

never read their translations, once they have finished with them. At the core of the problem is the fear which, according to their claims, prevents them from thinking properly, and they often proceed with making even more errors[4] . They usually forget the determining role of the context in delimiting the meaning of poly-semantic lexeme.

Synonyms

As opposed to polysemy errors which were more frequent among the students than among the teaching staff [5] the presence of this type of error was noticed equally on both sides. The participants in the research hardly realized that synonymous expressions cannot always replace each other in any context.

Thus, instead of *'gubitak usljed vrtložnih struja'* , the expression *'eddy current loss'* was often translated as *'eddy stream loss'*, which is not possible. The words '*current'* and '*stream'* are synonyms but '*stream'* cannot be used in this instance as it does not collocate with the word *'eddy'*. There were many other examples such as: *'minimizer valve'* instead of *'reducer valve'*, *'transmit capacity'* instead of *'transmit power'*, *'blow load'* instead of *'shock load'* and many others.

Students of the technical faculties are definitely not expected to know collocations and how to use dictionaries dealing with these issues. The key of the problem is to advise both the students and the teaching staff to use their professional knowledge and common sense as much as possible because technical discourse reduces many collocational relations in accordance with technological phenomena.

For instance: *'vrtložna struja'* means that type of *'struja'* that appears in a conducting material as a result from induction by varying magnetic field and, as such, it shows completely different quality of movement (forward-backward) than *'stream'*. That is something that anybody dealing with technology should know.

[4] Students are advised not to translate a word they are not sure about, because the experience proved that once they write an incorrect word they try, by all means, to harmonize the meaning of the surrounding words with the meaning of the incorrect word, producing, thus, completely inadequate translation of the sentence.

[5] This occurrence can be explained by the fact that students are often not that familiar with the content of the subject matter treated by translation as their teaching staff are. At the same time, teachers are supposed to assume bigger responsibility for their translations because the translations mirror not only their English proficiency but their expertise as well.

Therefore, engineering students and professors are advised to capitalize on their technological knowledge while translating their technical texts.

False friends (*Faux amis*)

In addition to the difficulties arising from the fact that particular synonyms participate in collocations which other synonyms cannot enter, the research proved presence of many 'false friendships' between the English and Bosnian/Croatian/Serbian words (hereinafter BCS).

For instance - the word *'container'* in English means 'a box or jar for holding goods as well as a portable compartment in which freight is placed (as on a train or ship)'[6] , whereas '*kontejner*' in BCS is understood mainly as '*a rubbish bin*' ('*smetljarnik*'). A difficulty in distinguishing 'false friendship' between these words that look so much alike result in poor translations (see sentence bellow):

> *Potential energy may be stored in an elastic body, such as a spring or a container of compressed gas*.

Instead of the following translation:

> *Potencijalna energija se može pohraniti u elastičnom tijelu poput opruge ili u posudi sa komprimiranim zrakom.*

the sentence was translated:

> *Potencijalna energija se može pohraniti u elastičnom tijelu poput opruge ili u kontejneru sa komprimiranim zrakom.*

Also, the English term '*regulation*' and the BCS term '*regulacija*' are rarely the equivalents of each other. Regulation means a '*rule*' (rules and regulations often appears as one phrase). On the other hand, the BCS term '*regulacija*' can be used in the meaning of English term '*control*', which in turn looks like '*kontrola*' but hardly ever serves as an equivalent to its BCS look-alike.

Both students and teaching staff made many other errors of the sort. As in the instances of other errors we will give just a brief review, not an exhaustive list: *evidence* (dokaz) was translated *evidencija*; *prospects* (izgledi) as *prospekti* (used for commercial purposes); *fabric* (tkanina) as *fabrika*; *concrete* (beton) kao *konkretan*; *hydrogen* (vodonik) *kao hidrogen* (H_2O_2); *machinability* (obradivost) kao *mašinabilnost; solid* (čvrsto) kao *solidno; rate* (brzina) kao *rata* etc.

[6] https://www.merriam-webster.com/dictionary/container

Redundancy

Redundant expressions are the groups of words in which at least one word is unnecessary because it just repeats the meaning that is already contained in other word or words. It can give the impression that one does not really understand the meaning of the words used, as shown in the following example:

The data are given in the following table below.

The word '*following*' means '*coming after*', therefore there is no need to use '*below* 'as well.

The most striking examples of redundancy were found in places where adjectives were repeating the meaning already contained in the word they describe (noun):

They worked on new innovations.

An '*innovation*' is, by definition, *'a new idea, method or device: a novelty'*.[7] So, there is no need to use '*new*' to describe it.

Another quite frequent type of redundancy error found in the corpus is when an adverb repeats the meaning contained in a verb, especially in a verb with a prefix such as re- (meaning again or back) or pro- (meaning out, forward etc).

The car was returned back to the mechanic.

If we look up the word '*return*' we will find that the dictionary gives the meaning *'to go back or to pass back)'*[8] Since the idea of 'passing back' is already contained in the verb, there is no need to include the adverb '*back*'. So, the sentence is better when the adverb is just left out:

The car was returned to the mechanic.

The same works for the part protruded (out) and many other errors of the sort.

Grammatical errors

Sometimes we make errors by failing to notice that a particular grammatical form may change the meaning, e.g. some nouns used in the plural acquire a meaning which the same noun lacks in the singular. Thus, the plural form of the noun *'work*' means *'fabrika, postrojenje'* whereas the singular form means *'rad*', as in the following example:

Works have developed modified processes.

Work on the new tunnel will begin soon.

The same holds for *content* and *contents*. In the singular, *content*

[7] *https://www.merriam-webster.com/dictionary/innovation*

[8] https://www.merriam-webster.com/dictionary/return

usually refers to the amount of a substance contained in something else.

e.g. *The high nitrogen content*

In the plural, *contents* refer to: a) the things contained in something, or b) pieces of information contained in a written document:

The contents of the book

In technical English there are many similar examples of these phenomena. However, such examples can be treated as 'translation subtleties'. Therefore, they are not the ones we were looking for in our research. Our focus was on the grammatical errors with the highest rate of occurrence in our corpus, that posed a significant challenge to students and professors in their dealing with technical translations. Most of them were the errors that occurred due to the lack of knowledge in the forms of Reduced Relative Clauses (especially N+Ving, or N+Ved forms).

Namely, while translating texts from English into BCS the students/teaching staff often mixed up the *–ing* and *–ed* non-finite forms with finite forms and that resulted in very poor translations as in the following examples:

The factory producing steel is going to be sold.

! Fabrika proizvodi čelik koji će se prodati.

The parts produced in the process are expensive.

! Ovi dijelovi su proizveli skup proces.

Apart from these errors there were many other grammatical errors found in the corpus. Thus, the students and their teachers did not always recognize the form of a passive predicate or even the form of certain English tenses. Many of them failed in translating properly some deverbal adjectives. E.g. deverbal adjective *controlled* in *controlled variable* was translated as *kontrolna* (*varijabla*), instead of *kontrolirana* (*varijabla*), which creates a huge difference in meaning.

The subject of the research, aims and contributions

The research was carried out at three technical Faculties of the University of Zenica:

1. Faculty of Mechanical Engineering,
2. Faculty of Metallurgy and Materials and
3. Faculty of Polytechnics.

The corpus included:

- 100 pages of the fourth-year student translations, which were part of their exam papers (*English Language 7; English Language 8*), covering the period of 4 academic years,
- 100 pages of translations done by their teaching staff. Out of this number 50 pages were translations from English to BCS which those engineering teachers did for the purpose of their lecturing and publishing (as technical translators). Another 50 pages were translations from BCS to English that the staff did as their contribution to the following Conference Proceedings:

  1. *Trends in the Development of Machinery and Associated Technology - TMT 2014, TMT 2016.*
  2. *Maintenance 2014, Maintenance 2016,*
  3. *Environmental and Material Flow Management - EMFM 2015, EMFM 2016*

Both types of translations, i.e. from English into BCS and from BCS to English, were under the scrutiny.

The aims and expected contributions of this research were:

- equipping students and academic staff with enough linguistic knowledge that would aid their comprehension of professional books/texts written in English as well as minimise translation errors when translating their own texts.
- contributing to the implementation of content and language integrated learning (CLIL) at our technical faculties
- the assurance of quality regarding translations of technical texts written in English.

Methodology and results

The research followed the basic principles and research methods as defined by Dornyei (2007). In selecting students' translations random sampling was applied. While selecting translations done by the teaching staff the author bore in mind that many of them usually engage professional translators when publishing their papers. Therefore, the author selected only those papers written and translated by the engineering teachers who gave their papers to the author for proofreading.

The basic assumption was that students would make more errors related to lexis whereas engineering teachers would make more grammatical mistakes because most of them would not have attended any ESP (*English for Specific Purposes*) courses. After a thorough insight into the body of work, errors with the highest occurrence were identified, analysed and grouped under two main headings: grammar and lexis. After that, the main groups were broken down into subgroups, according to the frequency of error occurrences.

Results are presented in Tables 1 and 2. At this stage, it is important to highlight that out of the total number of errors found (i.e. both grammatical and lexical errors, T = G+L), there were 1774 errors in 100 pages of students' translations (exam papers) and 911 errors in 100 pages of the translations done by the teaching staff (TS).

Table 1. The breakdown of grammatical errors

	Grammatical Errors				Total (G+L)
	N+Ving	N+Ved	Other	Subtotal	
Students	155	133	265	553	1774
Teaching Staff	77	61	59	197	911

Table 1 shows that 553 student errors (or 31% of the total number of their errors) as well as 197 teacher errors (or 21% of their total number of errors), are related to grammar. The Table also shows that the biggest number of errors occurred when sentences containing non-finite forms were translated incorrectly. In the case of students' translations, there were 155 errors related to N+Ving forms and 133 errors to N+Ved forms. In the case of the teaching staff, 77 errors related to N+Ving forms and 61 errors to N+Ved. The results presented in percentages are given in the Fig. 1.

Fig.1. Distribution of grammatical errors out of total

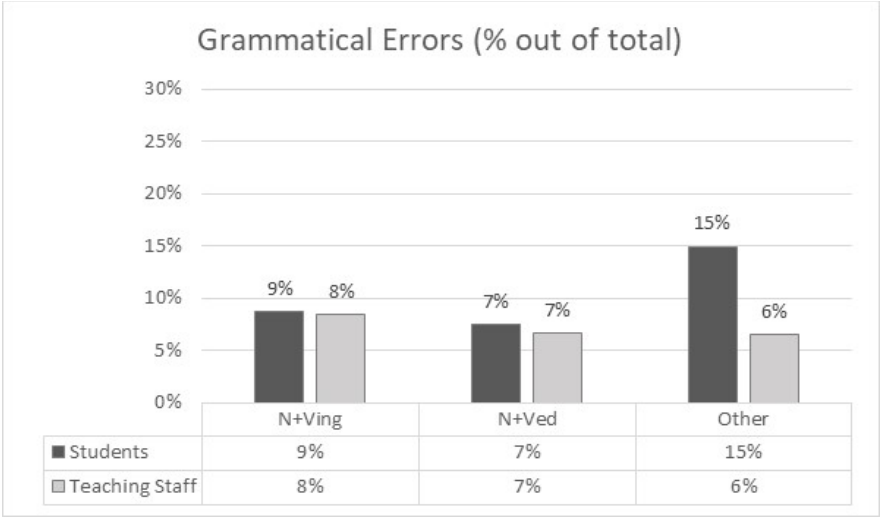


Table 2. The breakdown of lexical errors

	Lexical Errors						Total (G+L)
	Polysemy	Synonyms	False Friends	Redundancy	Other	Subtotal	
Students	256	183	208	171	403	1221	1774
Teaching Staff	86	228	150	107	143	714	911

Table 2 shows the distribution of lexical errors in the corpus. It is evident that out of the total number of such errors 1221 were found in the students' translations, whilst 714 errors were found the teachers' translations. Table 2 also shows that the biggest number of errors on the students' part was committed in terms polysemy (256) and false friends (208), followed by errors in synonymy (183) and redundancy (171).

When the teaching staff is concerned the biggest number of errors was committed in terms of synonyms (228) and false friends

(150), followed by errors in redundancy (107) and polysemy (86).

The results presented in percentages are given in the Fig. 2.

Fig 2. Distribution of lexical errors - out of total

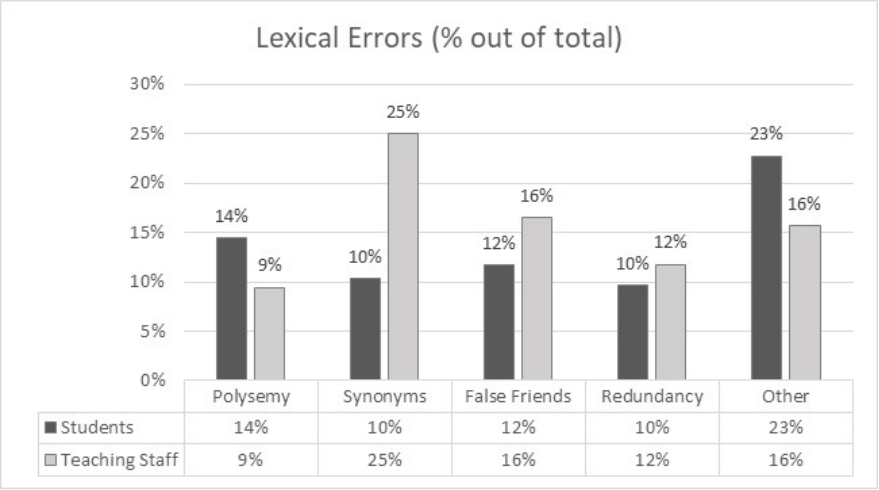


Fig. 3 Distribution of grammatical errors – out of subtotal

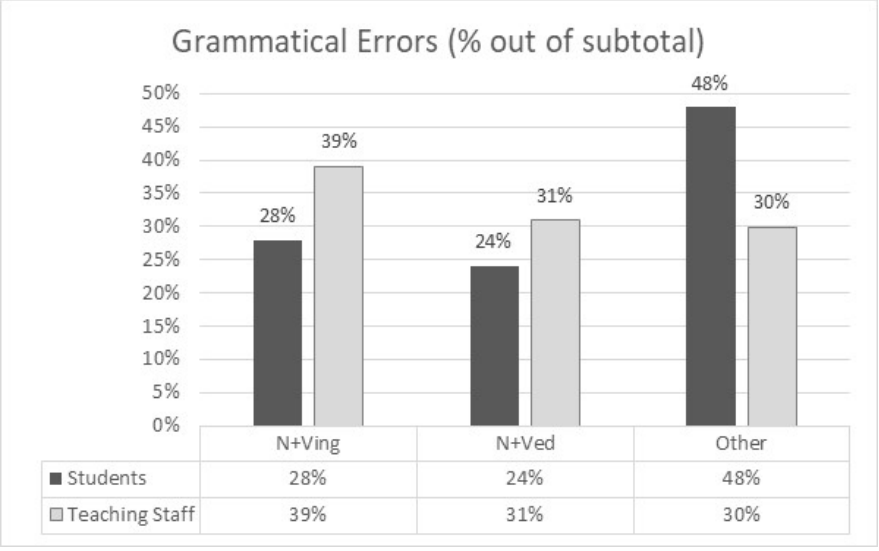
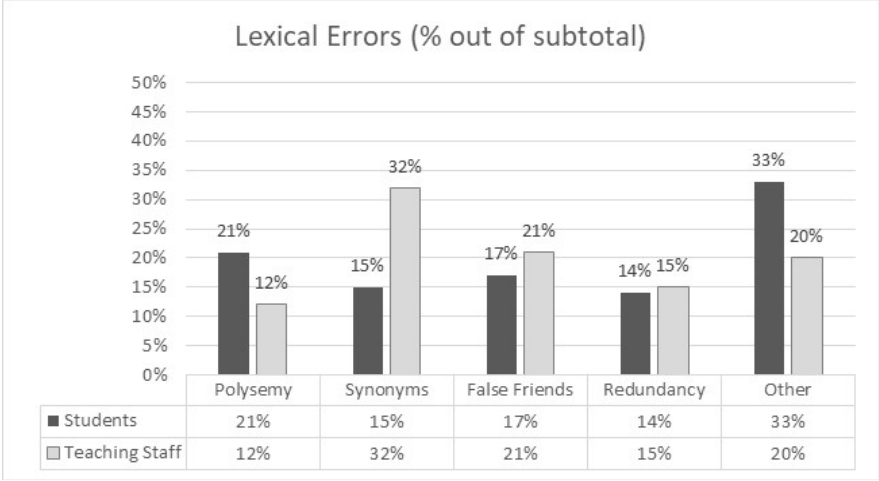


Fig. 3. shows the breakdown of students' and teachers' grammatical errors in relation to the number of all grammatical errors committed by either group. It clearly shows the relationships and differences between the two. It is interesting to note that in some instances students committed fewer errors than their engineering teachers.

The following figure (Fig 4) presents students' and teachers' lexical errors in relation to the number of all lexical errors that each group committed. This figure also shows significant differences and relations between students' and teachers' errors.

Fig. 4 Distribution of lexical errors – out of subtotal



The biggest number of errors in the students' translations fall under polysemy (21%) and false friends (17%), and followed by errors in synonymy (15%) and redundancy (14%). As far as the teaching staff is concerned, the most frequent errors relate to an incorrect use of synonyms (32%) and false friends (21%). These errors are followed by the ones committed in the area of redundancy (15) and polysemy (12%).

Discussion

The corpus consisting of the translations done by fourth year students and some of the teaching staff from three technical faculties has shown that both sides have certain knowledge in terms of translating technical texts. However, both sides committed a big number of errors. They are partially in accordance with the assumption set prior to the research that students would make more errors in vocabulary whereas engineering professors would make more grammatical mistakes.

The assumption is true in terms of the most frequent grammatical errors (wrong translation of non-finite forms) but in the case of other grammatical phenomena students committed by 18 %

more errors (tenses: form and use, voices, articles, word order etc.) than their teaching staff.

This leads to the conclusion that practicing non-finite forms within ESP classes helps students a lot in their translating technical texts which are full of non-finite forms, particularly in post-modifying position to the noun in a noun phrase (NP). Namely, engineers, in their wish to be more precise, use post-modification very much, thus producing very long sentences which may be confusing to many who are not aware of these phenomena. Nevertheless, students at these faculties are indeed well acquainted with them as they are a part of their syllabi.

This is not the case with their teachers who probably did have good training in grammar but have probably never practiced translating non-finite forms, as they are not a part of ordinary curricula in our secondary schools. Thus, they (but also many students with lower grades in ESP) mix them with finite forms ending in incorrect translations.

There is also an interesting observation in terms of a portion of grammatical errors in the whole body of errors committed on both sides. Out of the total number of errors committed: 1774 (S) and 911 (TS) the figures relating to grammatical errors are not that high as expected. Students committed 511 grammatical error (31% of the total) and teachers 117 (21%). This leads to a conclusion that grammar, as the most important focus of foreign language training in our education, is not as big problem as it is usually meant. Much bigger problem is often related to lexis.

In Fig 4 related to the distribution of lexical errors (out of the subtotal, i.e. number of lexical errors that each group committed), the difference between lexical errors committed by students and those made by teaching staff is significant. Students make more errors relating to polysemy, whereas the teachers make more errors in the use of incorrect synonyms, false friends and redundancy. Possible reasons may be that students may be less aware of the different meanings a word carries or less prone to looking up the unknown words.

At the same time, engineering teachers, being experts in their subject matter, deduce the correct meaning from the context, resulting in better translations than those by their the students. They are also aware of more synonymous terms, albeit not of their correct collocational relations with the neighbouring words. In addition, they

take more responsibility for their translations, motivated by personal reputation and a drive to be as precise as possible. This desire for precision sometimes results in grammatical redundancies and, unfortunately, clumsy sentence constructions.

We do hope that the problem of lexical errors in the translations of technical texts by engineers can partially be solved by raising their awareness on this issue, on pinpointing the main problems in this respect as well as by introducing more English for Specific Purposes classes at the technical faculties.

Last but not least: it is important to mention that the analysis of the less frequently occurring errors highlighted another problematic issue relating binomials. Outside the scope of this paper, this issue will be presented in a future paper.

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ISTRAŽIVANJE NAJČEŠĆIH GREŠAKA U PREVOĐENJU TEHNIČKIH TEKSTOVA NA UNIVERZITETU U ZENICI

Sažetak

Rad identificira određene probleme koji se odnose na najčešće greške prilikom prevođenja tehničkih tekstova. Cilj autora je da podigne svijest prevoditelja tehničkih tekstova u tom smislu, te im na taj način pomogne da smanje greške što je više moguće. Na pozadini identificiranih problema prevoditeljima se skreće pažnja na činjenicu da ista vrsta greške može u jednom registru biti zanemariva, a u drugom potpuno neprihvatljiva. Kada su u pitanju tehnički prijevodi, mala nepreciznost, ili dvosmislenost, može dovesti do ogromne materijalne (finansijske) štete sa pravnim posljedicama. Zbog toga je važno otkriti i naglasiti najslabija mjesta ove vrste prijevoda te tako pomoći predviđanju grešaka i njihovom mogućem smanjenju.

Ključne riječi*: prijevod, greška, višeznačnost, sinonimi, kolokacije*