

# The Efficiency of the Use of Medical Bilingual Dictionary in English Language Teaching in Vocational College

Zorana Z. Jurinjak<sup>1\*</sup>, Christos G. Alexopoulos<sup>1</sup>

<sup>1</sup>*Academy of Applied Preschool Teaching and Health Studies - Ćuprija Department, Serbia*

## Abstract

The aim of this paper is to examine the effectiveness of using a medical bilingual dictionary in teaching English in a vocational college. More precisely, to what extent the use of bilingual medical dictionary in relation to the use of Standard English bilingual dictionaries influences the results on tests, and thus the acquisition of better competence of students mastering the subject terminology. The need to examine this thesis arose from the fact that a rather rare use of professional dictionaries was observed, mostly due to the way the teachers work and due to the fact that foreign terms are often similar in form to their equivalents in the Serbian language, and students easily deduce their meaning. Secondary interest in this paper would be to raise awareness among students and teachers about the advantages of dictionary use. The experiment was conducted at the Academy of Applied Preschool Teaching and Health Studies - Ćuprija Department on a sample of 90 students. The respondents translated three medical texts with 42 target terms from their course literature. Statistical analyzes of the data obtained show that the differences in average time and correct answers favor the students who used the medical dictionary. The obtained results indicate the need for both students and teachers to be trained in the use of professional dictionary and that they should become a mandatory teaching tool.

**Keywords:** EOS; ESP; medical terminology; Standard English; vocabulary

## 1. Introduction

The English language of the profession has become the standard of foreign language teaching at the university level, and in some cases also at the secondary school level. In other words, students of different educational profiles during higher education no longer acquire only general language knowledge and foreign language competences, but narrowly professional ones, which gives them the opportunity to master professional vocabulary and all accompanying narrowly professional skills, and thus achieve a successful business career. communication and good business results. One of the essential elements of mastering the

language of the profession is professional terminology, and the basic resource for mastering it is a dictionary. Wanting to examine the students' ability to use different types of dictionaries in order to learn the vocabulary of the foreign language of the profession, the authors designed and conducted the research, during 2019. The aim of this research is to examine the effectiveness of the professional dictionary in relation to the standard one, to what extent the use of the professional dictionary in relation to the standard one affects the test results, and thus the acquisition of better competence of students in terms of mastering the subject terminology. As a secondary interest, they would single out raising awareness among students and teachers about the advantages of using terminological dictionaries.

### **Dictionary function**

A dictionary is one of the most important sources of learning words. It can be used for different purposes, because unfamiliar words may be needed for decoding (comprehension or reception) in reading or listening as receptive skills or for encoding (production) in writing or speaking as productive skills. Decoding takes place when a dictionary is used to look up unknown words encountered while listening, reading or translating, confirming the meaning of partially known words or guessing from the context. (Nation, 2013, p. 414)

In terms of purpose, dictionaries are divided into general and special, and professional dictionaries belong to the group of special or special dictionaries. According to the number of languages, there are monolingual (monolingual), bilingual (bilingual) and multilingual (multilingual) dictionaries, while bilingual dictionaries are a special "hybrid" type that represents a combination of bilingual and monolingual dictionaries and compensates for the shortcomings of both. Vidić points out that there are divisions of dictionaries according to the sphere of interest (into linguistic in the narrower sense and non-linguistic, which we call lexicons and encyclopedias), according to independence (into independent and annexed dictionaries like as integral parts of monographs or textbooks) and according to the medium of publication (on printed and electronic dictionaries). (Vidic, 2013, p. 104)

Professional dictionaries containing specialized terminology from various fields are provided for the English language of the profession. Kostic Tomovic (Kostic Tomovic, 2011, pp. 554–555) underlines that professional dictionaries have a clearly defined purpose and, in accordance with it, a clearly defined focus, which is represented by a specific lexicon, that is, the terminology of the chosen profession and professional jargon. The selection of an appropriate dictionary should be made according to criteria related to how many words students know, where they will use it and what the dictionary should contain. (Nation, 2008, p. 115)

Kostic Tomovic emphasizes that, regardless of who are the users of professional dictionaries (eg students or translators), users should possess four competencies that contribute to the successful use of dictionaries. These are: language competence in the mother tongue, language competence in a foreign language, professional competence in the relevant



field and lexicographic user competence. The latter competence, however, may not be particularly helpful with dictionaries that offer no information other than equivalents. (Kostic Tomovic, 2011, p. 555)

### **Using a dictionary as a language learning strategy**

Teaching students the correct use of vocabulary is consistent with the idea that teaching language learning strategies can be multi-useful in order to facilitate and improve the process of learning a foreign language. Accordingly, the teacher directs and encourages the development of students' awareness of the use of dictionaries, as well as the making of correct decisions about the situations in which the dictionary should be consulted. Namely, in order to achieve reading comprehension, it is not necessary to understand the meaning of all the words in the text. Looking up too many words in the dictionary slows down the reading process and interrupts the flow of thought, and can make reading tedious and less interesting, and even deter foreign language learners from developing and improving this language skill. Apart from consulting a dictionary and asking the teacher or others for meaning within social language learning strategies, an unknown word can be skipped (if it is not essential for understanding the message of the text) and its meaning can be guessed based on contextual or other available information. In this regard, encountering new vocabulary implies analyzing an unknown word or its parts, using context, consulting reference sources or establishing parallels with other words. As a rule, consulting a dictionary is reserved for words that are essential for understanding the text. (Nation, 2013, pp. 330–331)

Since the dictionary is rarely used in class, it is the tool most often used by students when learning vocabulary independently. In addition, the strategy of using the dictionary is seen as a form of intentional learning whereby the difference between intentional and unintentional lexical learning (which takes place by chance, by guessing the meaning of unknown words) is underlined during a language activity, such as listening to a story or reading for comprehension). Therefore, the strategy of using a dictionary is usually compared and combined with the strategy of guessing the meaning of unknown words, especially in terms of their influence on the comprehension of the read text. (Fan, 2003, p. 224)

Using the strategy of guessing the meaning immediately before using the dictionary would mean that the dictionary is consulted with an approximate idea of the possible meaning of the word in mind. Then there are greater chances of finding the meaning that corresponds to the context in which the word appears, which is a prerequisite for a good receptive use of the dictionary. In this regard, teaching the student the strategy of using a dictionary involves getting to know the characteristics of individual dictionaries, their advantages and disadvantages, the most effective ways of searching for terms in the dictionary, as well as combining the dictionary with the strategy of guessing the meaning of unknown words. One can also insist on the development of students' awareness of the potential of dictionaries as a basic resource for language learning. Therefore, students of a foreign language should know

the characteristics and content of monolingual and bilingual dictionaries, both general and special, in order to know which of them to consult at a given moment. (Nation, 2008, p.115)

The advantages of bilingual dictionaries include the fact that they provide meaning in an accessible way, that they can be bidirectional (eg English-Serbian and Serbian-English) and that they are suitable for students of the initial and intermediate level of knowledge. They do not provide data on the conceptual meaning of the word, necessary for understanding its concept, examples of appropriate collocations and word usage. Using bilingual dictionaries, students learn the meaning of words through translation, which can be counterproductive, as it does not contribute to the development of speaking skills, including paraphrasing skills. On the other hand, since they enable students to quickly understand the meaning of words, students use bilingual dictionaries extensively.

Monolingual dictionaries, provide information about the meaning, grammar, frequency and use of words. Definitions from monolingual dictionaries are accompanied by representative examples, as a rule taken from certain corpora, in which the function of the word in the context can be seen. Although reliable, these dictionaries require a certain level of language competence, including grammatical and lexical competence, which implies a vocabulary of at least 2000 words (Nation, 2008, pp. 114–115). Therefore, Gardner (Gardner, 2013, pp. 129–130) believes that the simplification of definitions in monolingual dictionaries, as well as sentences that serve as examples of the contextual use of words, is of key importance for their easier use. Although some studies show that students use both monolingual and bilingual dictionaries to the same extent (Huang, Eslami, 2013, p.89), Qian (Qian, 2004, p. 123) found that the majority of middle-level students use bilingual dictionaries more often than monolingual dictionaries, but also that students guess the meanings more often words rather than consulting a dictionary when they encounter unfamiliar words in a text.

Other research also confirms that students guess the meanings of words more often than they consult a dictionary (Fan, 2003, p.226). Students of a foreign language who use a dictionary while reading, as a rule, learn more words than those who use only guessing. In this sense, Lupescu and Day produced an influential study in which the group using the dictionary took almost twice as long to read the text, but did significantly better on the immediate vocabulary test than the group of subjects to whom the dictionary was not available, thus suggesting that the use of a dictionary improved the acquisition of lexis. (Lupescu & Day, 1993, p. 217)

## **2. Methods**

The research was conducted at the Academy of Applied Preschool Teaching and Health Studies in Čuprija as part of English language classes in May 2019 on a total of 96 first-year students majoring in Vocational Nurse-Midwife, Vocational Pharmacist and Vocational Physiotherapist. Before the start of the experiment, the students were randomly divided into two groups. The respondents translated a professional text from English to Serbian, with one

group using a standard English-Serbian (Croatian) dictionary, and the other a professional medical dictionary. The experiment was carried out as part of a colloquium and the subjects were not informed about the test so as not to consciously or unconsciously influence the results. Also, the respondents were not told that they would use different dictionaries. The students were motivated to cooperate because the colloquium was part of the pre-exam requirements. Data on the frequency of dictionary use by students of the English language profession during the examination were obtained on the basis of observation. The translation of the terms marked in the text (bold words) was specially analyzed using error analysis methods. The time spent by the students on the translation was recorded. The total translation time was 45 minutes. Three passages from the textbook English for Medical Academic Purposes (Micic, 2009, p. 3) were used, which contains basic medical terms and dictionaries, the Medical Dictionary (Markovic, 2008. p. 4) and the Large English-Croatian Dictionary (Bujas, 2001, p. 3) The error analysis method was applied to lexical errors with the aim of pointing out the incorrect translation equivalents of certain terms, since the lexicon represents a key segment of the professional English language and deserves special attention within the teaching.

Three texts (Function of the skin, The cardiovascular system and Basic features of the muscular system) contain a total of 329 words. The translation of 55 words was tested, consisting of 42 terms, of which 29 are univocal, and 13 are ambiguous syntagms. 97.6% of the tested terminology consists of nouns and noun phrases. There is one verb (excrete) and an adjective derived from it as an attribute in the noun phrase (excretory organ). Of the 13 ambiguous terms, they all formed noun phrases, of which 6 were NP (Adj +N), 5 were NP (N+N), and there is also one example of the present participle in the function of an attribute (underlying) in a noun phrase NP (V+ N).

### **3. Results**

A total of 96 respondents participated in the research, six of whom did not complete the translation and did not have a single meaningful sentence in their work, and due to the impossibility of calculating the time and the total number of lexical errors, as well as the fact that it was not possible to determine to what extent any of the dictionaries and whether the withdrawal resulted from their insufficient prior knowledge of the English language, we processed the data on a sample of 90 students. Of them, there were 28 male and 62 female respondents aged 19 to 22. The average number of years of learning English is 8.5 (from 0 to 17 years).

*Table 1 Presentation of descriptive research data on the entire sample*

	Theoretical min.	Theoretical max	Theoretical AS	Empirical min	Empirical max	AS	SD	p Sharpie Wilki test value
Time	0	45	22.5	22.00	45.00	34.7667	6.53951	<b>0.000</b>
Errors	0	42	21	.00	12.00	3.0778	2.61898	<b>0.000</b>

p – level of statistical significance

Table 1 shows the structure of respondents' responses to the sample included in this i guarding questioned. As can be seen in the theoretical range columns, the time students could complete the translation ranged from 0 to 45 minutes. At a minimum, they could score no points, and a maximum of 42, if they correctly translate all 42 terms.

Therefore, the theoretical arithmetic mean (average value of all respondents' comments) on the time dimension is 22.5 minutes and 21 correct answers. The students in this sample completed their work in 22 minutes at most (Empirical minimum), until the entire time was used (45 min, Empirical maximum). On average, they completed their test in 34.7667 minutes.

The score on the mistakes made test ranged from 0 mistakes made, so there is at least one respondent who correctly translated all given terms, to a maximum of 12 mistakes made. The average score of errors was only 3.0778 points.

The standard deviation of the sample on the time dimension is high as well, which indicates a high variability in the time it took them to solve. On the achieved error dimension, the deviation is not high, which indicates a low response variability.

As the empirical arithmetic mean is significantly lower than the theoretical one and as even the empirical maximum is significantly lower, not only than the theoretical one, but also than the theoretical arithmetic mean on the dimension of the achieved error (10 units less), it can be concluded that the students showed an exceptional level of success solving the task.

The last column in the table represents the statistical significance of the Sharpie fork test. Both in the case of the dimension of time and in the case of the dimension of the achieved error distribution of responses, they differ statistically significantly, so the procedures applied in the following steps will be non-parametric.

In order to determine the difference in the success of solving the task in relation to whether they used a general or an expert dictionary, first the structures of the students' answers on

each sub-sample will be shown, and then the Mann Whitney test will be used to check the statistical significance of the difference in the average of the answers (Table 5).

*Table 2 Presentation of descriptive research data on subsamples of students who used general vocabulary*

	Theoretical min.	Theoretical max	Theoretical AS	Empirical Min	Empirical Max	Empirical AS	Empirical SD
Time	0	45	22.5	22.00	45.00	35.6136	7.16327
Errors	0	42	21	.00	12.00	4.5455	2.75727

In the sub-sample of students who use a general dictionary, the range of solving time ranged from 22 to 45 minutes. On average, students solved the test in 35.6136 minutes.

The errors achieved in the translation of the respondents' terms ranged from 0 to 12 errors made, and on average they made mistakes on 4.5455 terms, which again represents an extremely good success score. The standard deviation indicates a low level of variability in the answers of the students of this subsample, that is, the similarity of the answers.

*Table 3 Presentation of descriptive research data on subsamples of students who used a professional dictionary*

	Theoretical min.	Theoretical max	Theoretical AS	Empirical Minimum	Empirical Maximum	Empirical AS	Empirical SD
Time	0	45	22.5	26.00	45.00	33.9565	5.84601
Errors	0	42	21	.00	7.00	1.6739	1.47655

In the sub-sample of students who use a professional dictionary, the range of solving time ranged from 22.5 to 26 minutes. On average, students solved the test in 33.9565 minutes.

The range of errors made is from 0 wrong to 7 wrong answers, and on average they were wrong on 1.6739 terms, which again represents an extremely good success score. The standard deviation indicates a low level of variability in the answers of the students of this subsample, that is, the similarity of the answers.

*Table 4 Presentation of the relationship between the time for which the students completed the translation and the success in the test*

			Errors
Spearman's rho	Time	Correlation coefficient	-.012
		p	.913

p – statistical significance

There is no statistically significant relationship between the time and the mistakes made by the students' answers. Therefore, the time it takes for the student to finish his translation does not affect the success of giving an answer.

*Table 5 Presentation of the difference in time and success on the test in relation to the type of vocabulary used by the group*

	Time	Errors
Mann-Whitney U	859.000	379.500
p	.215	.000

P – statistical significance

There is no statistically significant difference between students who used a general dictionary during translation and those who used a professional dictionary on the dimension of time ( $p > 0.05$ ; 859,000), while the difference was noted on the dimension of mistakes made, at the level of ( $p < 0.01$ ; 379,500) and that difference is in favour of those students who used a general dictionary (AS of the success of these students' answers is higher), which can be seen in Table 4. Therefore, students who used a general dictionary made more mistakes when solving the task.

#### 4. Discussion

In relation to the volume of dictionaries they used and the time constraints with the existing language competence of the students and insufficient lexicographic experience, the data obtained from the testing, which show that the students who used professional



dictionaries, although with minimal differences, completed the translation faster, fall within the expected range. This is supported by the fact that students who used standard dictionary of the English language, they also looked for general vocabulary words in it.

Due to the presence of internationalisms of Latin origin as well as overlooking some forms of polysemy in some terms (e.g. *joint*), students failed to look for certain words in the dictionary under the assumption that they already know them when, for example, translated *mucosa* as *mucosa* instead of the Serbian word *mucous membrane*.

The students were most familiar with those terms that are part of the general lexicon of the English language, such as, for example, parts of the body: *skin*, *heart*, *brain*, which is proven by the fact that no student got those terms wrong, while the terms *underlying tissue*, *excretory organ* and *insertion* recorded the largest number of errors and thus represented the greatest challenge to the respondents. It is assumed that the reason for this is the lack of vocabulary in the mother tongue and that the students could not find appropriate equivalents in their own language.

Statistical processing of the data revealed that both groups of students showed a high level of success in solving the task, which as an important empirical data complements the theories presented in this paper about the importance of using a dictionary as the primary written lexical fund of the language being learned. The low level of variability, that is, the similarity of answers among respondents, is related to the very properties of professional terminology, such as precision, equivocalness and resistance to context. For example *arteries*, *veins* and *capillaries* are types of *blood vessels* and in this case they cannot be translated differently.

The difference in the success of solving tasks in relation to the use of different dictionaries confirms the basic hypothesis of examining the effectiveness of the medical bilingual dictionary in teaching English in the medical profession. Since the professional dictionary is devoid of colloquial phrases and expressions, and derivatives are limited to subject terminology, students found appropriate equivalents faster and easier. As we have established that not all given terms are found in the general dictionary, we conclude that this auxiliary tool should be indispensable when learning and translating.

#### **4.1 Indications in class**

Although the choice and way of using professional dictionaries should be in accordance with the needs of the students, the purpose of learning and the requirements of the task, searching for the meaning of professional words for speed and efficiency should first be done in professional dictionaries and then checked in a standard dictionary. Students should also look for an explanation of the term from a monolingual professional dictionary, in order to make sure that they have found the correct solution and to determine the concept of that term.



At the same time, dictionaries are used both for searching and for acquiring new information, and when it comes to professional language, different glossaries or encyclopaedias can be used to explain professional terms (Vidic, 2014, p. 134).

The reading strategy known as scanning, which is a form of quickly glancing over the text in order to search for relevant information, is not seen as a desirable or effective strategy for reading dictionary definitions, but is considered to be a careful reading of dictionary definitions in order to select the appropriate meaning, a more adequate approach that can prevent possible mistakes in terms of fitting the meaning into the given context. In this regard, for lifelong independent learning, the strategy of using a dictionary is not only limited to the ability to locate a word, identify which type of word it belongs to, and randomly select a meaning, but also implies delimiting meanings and grammatical patterns, resolving the ambiguity of terms and their meaning, and to ultimately extract meaning that fits the immediate context (Chan, 2014, p. 36). Therefore, a quick, cursory or selective review of the definitions in the dictionary does not always contribute to the selection of the appropriate meaning.

The teacher's role can be reflected in recommending certain dictionaries, helping students to choose and properly use dictionaries that meet their needs and educational goals, where market availability and quality are important factors. It is up to the professional language teacher to encourage the motivation to use the dictionary, as well as the student's ambitions for further improvement and expansion of lexical knowledge in the process of lifelong learning. In this sense, guidelines for using dictionaries would be reflected, among other things, in raising awareness of what dictionaries offer (so that students do not neglect or overlook certain meanings), eradicating wrong assumptions and rejecting inadequate strategies for using dictionaries (such as quickly reading the definition or preconceived notions of word meaning), as well as developing advanced vocabulary skills. (Chan, 2014, pp. 34–35)

## **5. Conclusion**

In the teaching of a foreign language, in our case English, in higher education institutions in Serbia, the importance of general and specific academic English, as a subcategory of professional English, should first of all be seen, and then emphasized. School administrations should enable students to attend language classes unhindered, with the aim of students acquiring basic knowledge of the academic language, which provides them with active learning in discussions, seminars, scientific gatherings and the possibility of independent reading of professional literature. At the same time, one of the tasks of English language teachers is to train students in the basic skills of a specific academic language, necessary for following the teaching of certain scientific disciplines and subjects that they later plan to pursue professionally.



Professional language teaching, organized in accordance with students' needs, aims at understanding and using professional vocabulary developed to a level that would enable students to read fluently with understanding. The results of the research on the receptive use of the dictionary indicate the fact that the teacher should guide the students in the correct use of the dictionary according to their needs. Since dictionaries, by definition, do not represent basic, but auxiliary or supplementary teaching materials, their use during the teaching itself, i.e. in class, is rarely practiced. However, when students leave the classrooms, what they will rely on in the further learning of lexical units are precisely dictionaries, which become for them the basic source of searching for information about words, acquiring and establishing lexical knowledge. The lack of correlation between the results of the translation test and the use of strategies, among other things, should be found in insufficient lexicographic competence of students, insufficiently developed awareness of what certain dictionaries offer, neglect of the potential of the dictionary, information about the words contained in it, as well as inadequate handling of the offered information, especially when it comes to ambiguous terms.

The teacher's role is to ensure that students' use of vocabulary is as effective as possible, and explicit teaching of vocabulary use strategies integrated into professional language teaching would contribute to that goal. Given the prevailing belief among students that they possess sufficient knowledge and skills to search dictionary definitions, and that developing lexicographic competence is not important for language learning, guidelines for using dictionaries would be of multiple use to students. They primarily serve to prevent inadequate use of the dictionary, i.e. pointless searching, and guide students to the appropriate combination of strategies and sub-strategies to reach a specific goal as quickly, easily and simply as possible. In addition, the use of a dictionary should be careful in the sense that students should not look up the meaning of every unknown word in the text in order to develop reading skills and read with fluency and comprehension, but the use of a dictionary should be combined with other strategies for discovering meaning, especially with an inference strategy, which is also useful for reading comprehension. Since the use of a dictionary in an appropriate and consistent way contributes to the improvement of vocabulary and the development of reading skills, teaching the student the correct use of the dictionary by the teacher is extremely important for a thorough and systematic search for meaning that is appropriate to the context, taking into account all the information within the individual definition in the dictionary and this work provides confirmation of the justification of this type of teaching.

## References

- Bujas, Z. (2001). *Veliki hrvatsko-engleski rečnik [Croatian-English Dictionary]*. Zagreb: Nakladni zavod Globus.
- Chan, A.Y. (2014). How ESL students make the best use of learners' dictionaries? *English Today* 30/3.
- Fan, M. Y. (2003). Frequency of Use, Perceived Usefulness, and Actual Usefulness of Second Language Vocabulary Strategies: A Study of Hong Kong Learners, *The Modern Language Journal* 87/2.
- Gardner, D. (2013). *Exploring Vocabulary*, Routledge.
- Huang, S. Eslami, Z.R. (2013). The Use of Dictionary and Contextual Guessing Strategies for Vocabulary Learning by Advanced English-Language Learners, *English Language and Literature Studies* 3.
- Kostić Tomović, J. (2011). Nemačko-srpska stručna leksikografija kao izazov za prevodilačku i nastavnu praksu, u: A. Ignjačević, D. Đorović, N. Janković, M. Belanov (ur.), *Jezik struke: izazovi i perspective [German-Serbian professional lexicography as a challenge for translation and teaching practice, in: A. Ignjačević, D. Đorović, N. Janković, M. Belanov (eds.), Professional language: challenges and perspectives ]*. Beograd: Društvo za strane jezike i kniževnosti Srbije.
- Lupescu, S. Day, R.R. (1993). Reading, dictionaries, and vocabulary learning, *Language Learning* 43.
- Marković, J. (2008). *Medicinski rečnik (englesko-srpski), četvrto izmenjeno i dopunjeno izdanje [Medical dictionary (English-Serbian), fourth amended and supplemented edition]*. Beograd: Građevinska knjiga d.o.o.
- Mićić, S. (2009). *English for Medical Academic Purposes*, treće izdanje, Beograd: Zavod za udzbenike.
- Nation, I.S.P. (2008). *Teaching Vocabulary: Strategies and Techniques*, Heinle: Cengage Learning.
- Nation, I.S.P. (2013). *Learning Vocabulary in Another Language*, Cambridge: CUP.
- Qian, D.D. (2004). Second language lexical inferencing: preferences, perceptions, and practices, in: P.Bogaards B. Laufer (eds.), *Vocabulary in a second language: selection, acquisition, and testing*, Philadelphia: John Benjamins Publishing Company.
- Vidic, J. (2004). Rečnik u nastavi francuskog jezika za akademske potrebe, *Komunikacija i kultura online* V/5 [Vocabulary in French language teaching for academic purposes, *Communication and culture online* V/5].