

UDC 378.147:811.111'276.6'373:61-051
DOI <https://doi.org/10.32782/eddiscourses/2024-4-15>

INVESTIGATING ENGLISH VOCABULARY LEARNING STRATEGIES BY MEDICAL STUDENTS

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The paper aims at investigating the variety and frequency of vocabulary learning strategies employed by undergraduates of the medical faculty of Bogomolets National Medical University. It also explores whether the learners' choice of strategies correlates with their understanding of the "knowing a word" concept. In addition, the study addresses whether students do prefer different strategies for general and specific English vocabulary learning.

To this aim, 86 first and second-year students, who are engaged in studying "English for Specific Purposes", participated in the research. A 34-item questionnaire, based on Schmitt's taxonomy of vocabulary learning strategies with some modifications, was used for data collecting. This tool also included spaces for learners to note any strategies not listed.

The findings reveal that undergraduates mostly prefer strategies (some of the determination and cognitive types) to assist them in discovering word meanings, but these are less effective for long-term retention. Interestingly, participants usually use similar strategies either for general or medical English vocabulary learning. Some respondents specified the use of apps like Quizlet, Duolingo to improve memorizing new words. This reflects the growing role of modern technology in learning and the ongoing search for more effective ways to achieve goals. Nevertheless, there is a noticeable lack of interest in employing social and metacognitive strategies. It suggests that learners avoid taking full control over their learning, namely its process and progress.

Positive evidence indicates that students understand the necessity to acquire multidimensional nature of a word. However, satisfactory perception of the concept "knowing a word" does not correlate with methods that students choose for grasping new vocabulary. This disconnect may explain why undergraduates struggle with mastering specific words.

The pedagogical implications of the study highlight the importance of providing students with training in vocabulary learning strategies to enhance their awareness of strategy use and promote their autonomy. Based on the findings, this paper offers some recommendations for teachers of English for Specific purposes to support students and facilitate their learning.

Key words: vocabulary learning strategies (VLS), medical English vocabulary learning strategies, English for Specific Purposes, Schmitt's taxonomy.

Науменко Олександр, Мусянко Людмила. Дослідження стратегій вивчення англійської лексики студентами-медиками

Метою статті є дослідження різноманітності та частоти використання стратегій вивчення лексики студентами медичного факультету Національного медичного університету імені О.О. Богомольця. Також, стаття розглядає, чи відповідає вибір стратегій розумінню студентами поняття «знання слова». Крім того, в дослідженні з'ясовується, чи існує відмінність у виборі студентами стратегій для вивчення загальної та спеціальної англійської лексики.

У дослідженні взяли участь 86 студентів першого та другого курсів, які вивчають «Англійську мову (за професійним спрямуванням)». Для збору даних використовувалася анкета, що розроблена на основі таксономії Шмітта з певними змінами та вміщувала 34 стратегії вивчення іншомовної лексики. Для забезпечення об'єктивності даних учасники мали можливість додати власні варіанти відповідей, якщо запропоновані в переліку стратегії не повністю відображали їхні підходи до вивчення нових слів.

Результати дослідження продемонстрували, що студенти переважно використовують стратегії (здебільшого із категорій детермінації та когнітивні), які допомагають визначити значення слів. Проте такі види стратегій не сприяють довготривалому запам'ятовуванню. Цікаво, що студенти застосовують однакові прийоми для вивчення як загальної англійської, так і для медичної лексики. Деякі респонденти зазначили, що користуються додатками, а саме: *Quizlet* та *Duolingo*, для кращого запам'ятовування нових слів. Це свідчить про зростання ролі сучасних технологій у навчанні та постійний пошук ефективніших методів досягнення цілей. Варто звернути увагу на недостатній інтерес учасників опитування до використання стратегій, які входять до соціальних та метакогнітивних

категорій. Причиною цього може бути неготовність студентів першого та другого курсу брати відповідальність та повний контроль над власним навчанням.

Результати дослідження підкреслюють важливість навчання здобувачів вищої освіти стратегіям вивчення лексики, щоб підвищити їхню обізнаність про наявність різноманітних підходів, допомогти знайти найбільш ефективні з них та, безумовно, сприяти розвитку автономності студентів у навчанні. На основі отриманих результатів у статті надаються рекомендації для викладачів дисципліни «Англійська мова (за професійним спрямуванням)».

Ключові слова: стратегії вивчення лексики, стратегії вивчення медичної англомовної лексики, Англійська мова (за професійним спрямуванням), таксономія Шмітта.

Introduction. English has officially gained the status of the language of international communication in Ukraine. For our country's membership in the European and global community English plays the role of a key to new trends and scientific discoveries, personal and career growth, competitiveness in the global market and income increase. The change in status results in an increased focus on English teaching at all levels of education. Higher medical education, in particular, is constantly searching for new techniques that boost English language learning for specific purposes by future healthcare professionals and contribute to the improvement of their communicative competence.

Extensive lexicon, deep vocabulary knowledge, and fluency in applying them in communicative situations are predictors of successful foreign language learning across various proficiency levels. Harmer [1] stated that if language structures make up the skeleton of language, then it is vocabulary that provides the vital organs and the flesh. However, vocabulary learning is a time and endeavor-consuming process which poses a big challenge to students. Quite common, learners working hard on specific lexical item memorization for conversational purposes or comprehension in listening and reading feel frustrated by rather weak results. And it is not only language aptitude and other personal factors that explain why some students under the same conditions succeed in learning more than their peers. It is also the students' own active and creative participation in the learning process through the application of individualized learner strategies [2]. Knowing a variety of vocabulary learning strategies (*further* – VLS) and being able to employ them in context can simplify the process of learning new words. Therefore, strategy instruction can empower individuals by providing them with powerful tools they need to grasp special lexical knowledge from various resources as well as assist students in taking control of their learning.

Review of related literature. In academic circles, an interest in the study of VLSs has grown significantly over the last two decades. Given the real explosion of research on general language learning strategies at the end of the last century, the need for a thorough study of the role and benefits of vocabulary

acquisition strategies for English language mastering has been apparent. A lot of the learning language strategies constantly used by students appeared to be VLSs or might be employed for lexical items acquisition. In supporting this, numerous studies have emerged focusing on a comprehensive set of VLS and their taxonomies [3], the relationship between this phenomenon, vocabulary size, and foreign language learning [4], the impact of numerous personal factors (motivation, proficiency level, learning style, self-esteem, self-regulation etc.) on the choice of VLS [5; 6; 7], and their contribution to enhancing English foreign language learners' writing, reading, and speaking skills [8].

Acknowledging the fact that discipline-specific vocabulary in English is in demand to assist university learners in engaging within academic and professional environments, strategic studying can be beneficial for language proficiency. Nevertheless, VLS investigation is still evolving within the framework of learning and teaching English for Specific Purposes, namely in agricultural [9], technical [6], pharmaceutical [10] areas. Thus far, no empirical studies have examined learners' VLS use in medical English learning contexts.

Objectives of the paper. This study aims at exploring the frequency of strategies used by the first and second-year students of the medical faculty of Bogomolets National Medical University (Ukraine) to acquire specific vocabulary. Also, the paper investigates learners' perception of the concept "to know a word" and whether this perception correlates with the undergraduates' choice of VLSs (identifying the most and least preferable strategies) as effective ways to learn new words in English for Specific Purposes university context. Finally, the work addresses whether there is a difference in learners' strategy usage between general and specific English vocabulary learning.

Word knowledge & Vocabulary learning strategies: key points. Before diving into the peculiarities of VLSs, it is important to identify what "knowing a word" involves. In search of an answer to this issue, Nation [11] discovered a multidimensional nature of the phenomenon. Specifically, mastering a word comprises knowledge of its diverse forms (written

and spoken form, affixation etc.), different aspects of meaning (the core meaning of a word, along with the concepts, references, and connections it can evoke), and how a word is used in context (grammatical functions, collocations etc.). Moreover, each point encompasses both receptive and productive knowledge. Schmitt [3] argued, that the more aspects of a word we know, the more likely we are to use the word correctly and appropriately in context. However, learning vocabulary with its all aspects is a complicated and step-by-step process. With a clear understanding of what it means “to know a word”, learners may opt for strategies that best suit their goals and effectively expand their active and passive vocabulary.

The term “learner strategy” in the sense of students’ efforts to acquire knowledge gained widespread recognition in the area of foreign language learning when the research works of Oxford and Chamot and O’Malley [12; 13] were presented to the scientific world. Strategies are viewed as a resource that learners can intentionally turn to in solving language tasks and making learning more effective [6] with the ability to influence their motivational and affective state, or the way they select, acquire, organize or integrate new knowledge [6]. Focusing directly on word learning there has been identified a specialized subgroup of general learning strategies, vocabulary learning strategies. Consequently, this phenomenon is centered around the concept of language learning strategies and is defined as “those conscious and unconscious, planned and unplanned steps and actions that foreign language learners take to discover and consolidate the form, meaning and usage of words” [14]. Nation [11] highlighted four core features of the VLS, namely: 1) they involve choice; 2) they are complex since imply taking several steps to acquire knowledge; 3) they require knowledge and benefit from training, and 4) boost learning efficiency. These features emphasize the importance of strategic thinking when learning vocabulary, as well as the value of practice and guidance to achieve maximum results.

The variety of opinions on how to define this term as well as numerous approaches to distinguish it from related concepts have led to the emergence of diverse classifications of VLSs. For instance, Gu & Johnson [15] identified the following categories: meta-cognitive regulation; guessing, dictionary, note-taking, rehearsal, encoding, activation strategies, and beliefs about vocabulary learning. Nation’s taxonomy [11] included three main divisions: strategies for (1) planning vocabulary acquisition (planning), (2) searching for information about lexical items (sources), and (3) establishing knowledge (processes). Accordingly, the first group of strategies involves deciding where to

focus attention, how to focus attention, and how often to give attention to the item [11]. Information about the word (sources) can come from the word itself, context, dictionaries, Internet resources, and parallels with native or other languages. Finally, the third category (processes) is oriented toward memorizing new words and making them available for application.

Intaraprasert [16] classified VLSs into three main groups such as 1) strategies to discover the meaning of unknown vocabulary, 2) strategies to retain the knowledge of recently studied words, and 3) strategies to expand vocabulary. The author claims that there is no clear distinction between categories since strategies used for discovering the meaning of the word may also assist in its retaining, and vice versa.

Schmitt [3] separated VLSs into two main branches: discovery and consolidation strategies. The first covers strategies used to interpret unknown lexical items. This group is subdivided into determination and social strategy categories. The former intensifies obtaining knowledge of a new word by analyzing the item’s part of speech, affixes and root, checking for native language cognates, and using dictionaries, images etc. Social strategies, in contrast, foster learning by engaging students in social interactions, namely asking peers or the teacher for explanations.

Consolidation strategies, the second type of strategy in Schmitt’s classification, focus on learners’ efforts to retain a new word after encountering it. This group was compiled based on Oxford’s taxonomy of general learning strategies with certain modifications. Specifically, this branch is subcategorized into four vocabulary learning strategy types such as: a) social (involves cooperation with peers for vocabulary practicing, out-of-class teacher’s assistance and review students’ works, interaction with native speakers); b) memory (connection the targeted lexical units with prior knowledge, using semantic maps, association with known synonyms and antonyms etc.); c) cognitive (verbal and written repetitions, keeping a vocabulary notebook); d) metacognitive (involves self-control and assessment of learning process such as using different sources for extensive reading and watching, testing oneself etc.) [3]. Note that Schmitt’s taxonomy needs some clarifications. First, social strategies belong to both groups: discovery and consolidation. However, the discovery social strategies are prerequisite for consolidating social strategies in terms of achieving greater communicative competence [6]. Second, both memory and cognitive strategies are used for vocabulary recalling. For distinguishing between two subgroups Schmitt recommended to be guided by Purpura’s [3] six classifications of storing and memory strategies,

namely: repeating, using mechanical means, associating, linking with prior knowledge, utilizing imagery, summarizing. Consequently, cognitive strategies are those that aren't clearly associated with mental data processing. They concentrate on repetition and mechanical means. On the other hand, memory are the ones that involve organizing mental information or altering it to enhance memorability. Finally, some strategies can fall into both the discovery and the consolidation categories as well as nearly all discovery strategies can also serve as consolidation strategies. Thus, such a distinction between categories is rather arbitrary, since only the objectives that guide the learner in mastering target vocabulary determine categorization.

Despite the pitfalls of Schmitt's taxonomy, it is currently recognized as the most comprehensive one and is still widely used as an initial stage in elaborating a research questionnaire to study VLSs.

In tertiary education, specifically in English for Specific Purpose learning contexts, only a handful of studies have explored VLS use in an ESP university context. For instance, Lessard-Clouston's [17] study was focused on the VLS types applied by first-year students learning the technical vocabulary of theology in Canada. Key results indicated that participants preferred consolidation strategies.

Rabadi [18] applied Schmitt's VLS classification for the development of a questionnaire in order to reveal the types of strategies employed by Jordanian students majoring in English Language and Literature. The findings of the study showed that memory strategies were favored, whereas metacognitive were the least frequently used among the participants.

Investigating the use of VLSs by Greek ESP learners in aiding technical vocabulary learning, Katsarou [6] found out that the most frequently undergraduates opted for guessing and dictionary-use strategies. In contrast, consolidation VLSs were the least utilized group.

Aforementioned empirical studies in the field of foreign language general and specific vocabulary acquisition have served as the methodological basis for our survey, particularly in choosing and tailoring appropriate research tools for data collection.

Research Methodology. This research has been conducted within 2024. 26 first-year and 60 second-year Master students of the medical faculty at Bogomolets National Medical University studying English for Specific Purposes participated in it. The respondents with an age range from 17 to 23 were native speakers of Ukrainian and had experience of learning English as a foreign language of about 10–16 years. Undergraduates were chosen for the research as they

have almost the same experience of studying general English and English proficiency level. Furthermore, according to the curriculum, the discipline "English for Specific Purposes" is studied during the first and second academic years. Consequently, both freshman and sophomores are currently on their way to command specific English, in particular, engaged in learning medical vocabulary, and can share their thoughts on the effectiveness of the process.

Participants self-assessed their English proficiency level as A1 (beginner) (13), A2 (pre-intermediate) (22), B1 (intermediate) (41), B2 (post-intermediate) (7), and C1 (advanced) (3) in alignment with the internationally recognized standard description, the Common European Framework of Reference (CEFR). It's worth mentioning that none of the learners certified their English proficiency. The students' scores for the General English course at secondary school ranged between 5 and 11 on a 12-point grading system applied in Ukraine. Also, only 4 respondents had experience (from six months to 1 year) of studying English abroad.

The instrument employed in this study to collect data is a questionnaire which has been adopted from Schmitt's questionnaire [3]. It consists of three sections, namely: 1) collecting respondents' background information (age, course, English proficiency level etc.), 2) gathering participants' opinions on their understanding of the concept of "to know a word" and the perceived difficulty of the learning process, 3) identification of general English VLS, the most and least employed VLSs for medical vocabulary learning, and frequency of strategy use to acquire specific words in English. To elicit information about VLSs utilized in general English acquisition and the most/least effective ones in medical University context, the students had to choose from 34 items those strategies which correspond to their views. It is worth noting, that Schmitt's 58-item questionnaire was adopted to Ukrainian students. For instance, some points were combined such as "application of English-Ukrainian dictionaries, both printed and online" without separating printed or online (apps or Internet) resources. Moreover, not to restrict the choice, the participants had an opportunity to indicate the strategies that were not included in the survey. Concerning pinpointing the frequency of strategies opted for medical English vocabulary acquisition, the rating scale was presented, where: 1 corresponds to "often", 2 – "sometimes", 3 – "rarely", 4 – "never", and 5 – "not familiar".

Results and Discussions. Based on the survey, the following results have been obtained. As for the interpretation of the concept "to know a word",

the most common students' opinions are presented in Figure 1. This information underlines that almost all respondents recognize the need to know various aspects of the word, namely its meaning, form and ability to use it fluently and consciously in appropriate communicative situations.

Regarding medical English vocabulary learning challenges (Figure 2), undergraduates rated them as extremely difficult (7%), difficult (65%), neutral (24%), and easy (4%). The significant difficulty in mastering specific knowledge can be attributed to the nature of medical terms, their low frequency of usage, learners' English proficiency, individual characteristics, and the selection of less effective methods for vocabulary acquisition.

In terms of the strategies learners reported to have used for general English vocabulary acquisition (Figure 3), the five most common ones out of 34 are: (1) translating into the native language, (2) application of English-Ukrainian dictionaries, both printed and online, (3) guessing the meaning of a new word from context while reading or listening, (4) taking notes whenever learners encounter a new lexical item, and (5) repeating orally a new word (mechanical repeating). These are traditional methods of learning which are defined by Schmitt's taxonomy of VLS [3] as determination (1, 2, 3) and cognitive strategies

(4, 5). The latter is more about rote rather than meaningful memorizing.

Additionally, some students highlighted extra strategies that were not mentioned in the questionnaire, namely: employing apps like *Quizlet*, *Duolingo* to assist in remembering new words. Even though only a few students noted these, their responses reflect the growing role of modern technology in learning and the ongoing search for more effective ways to achieve goals.

Figure 4 presents the strategies used by the undergraduates of Bogomolets National Medical University to master specific English vocabulary. The data shows a clear preference (*often*) for definite determination and cognitive strategies. Other strategies, in particular some from determination, memory, social, and meta-cognitive categories, are employed *sometimes*. Interestingly, certain types of determination and memory strategies are *rarely* applied, while several memory ones fall into the "never-utilized" group. It is necessary to note that a few undergraduates admitted they were "not familiar" with the "categorization" strategy.

The findings (Figures 3, 4) reveal that learners tend to use similar strategies for both general and specific English vocabulary learning. Besides, Figure 5 shows the results of the students' survey on

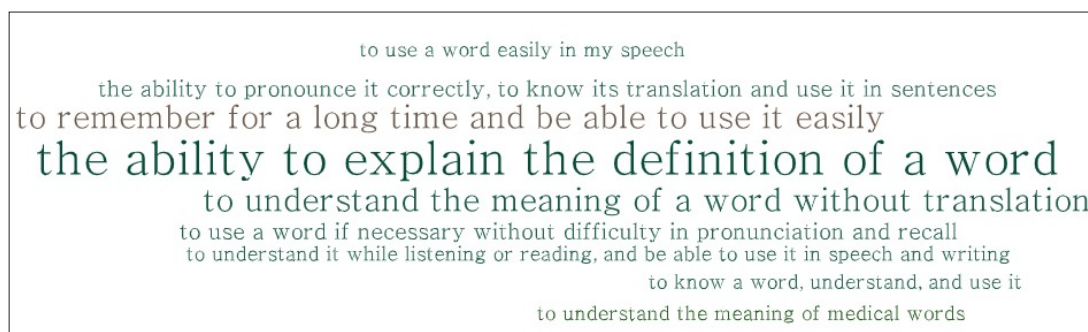


Fig. 1. Participants' perceptions of the concept "to know a word"

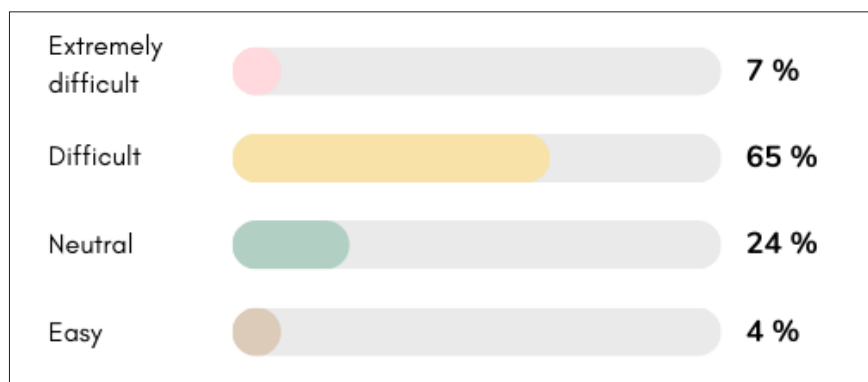


Fig. 2. Students' self-assessment of difficulty level in medical English vocabulary acquisition



Fig. 3. Frequently used strategies for learning general English vocabulary by students

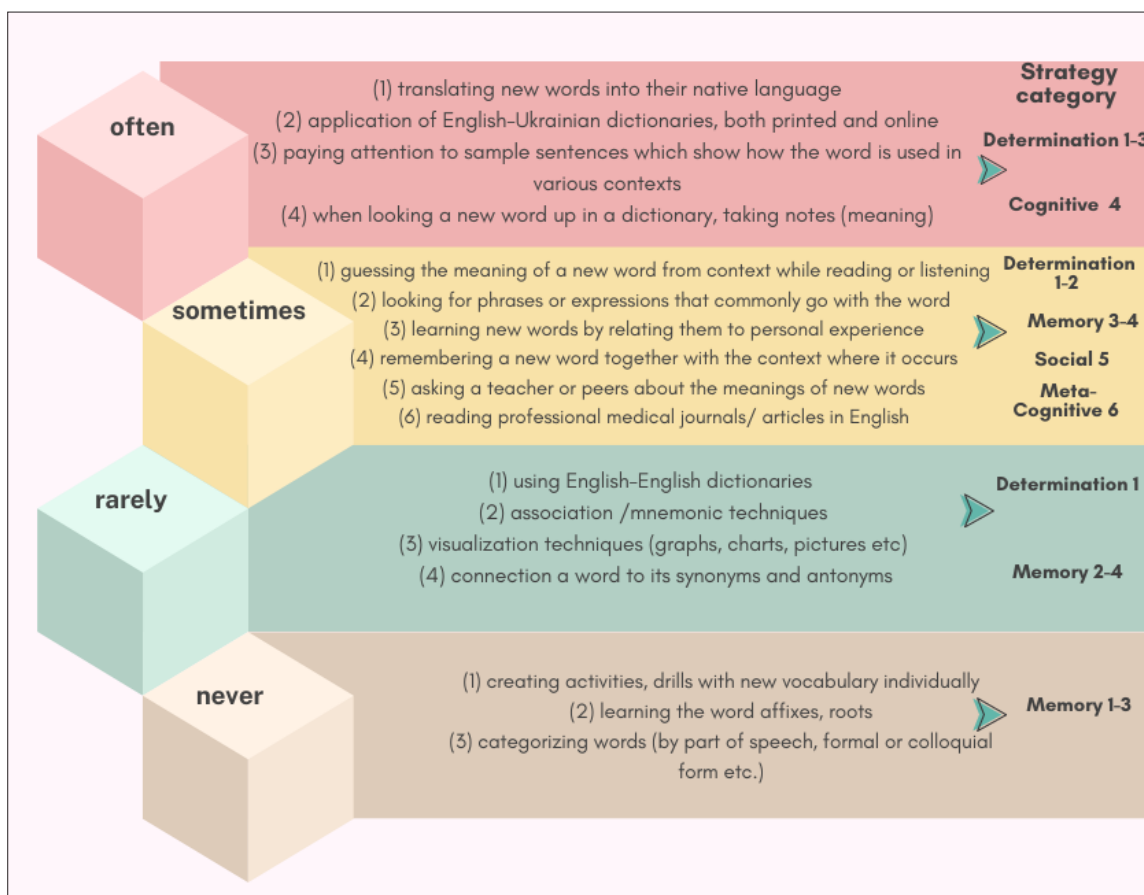


Fig. 4. Frequency of strategies used by students to master medical English vocabulary

identifying the most and least effective strategies for medical word acquisition.

An analysis of the collected data reveals that respondents use all categories of VLSs to some extent in order to discover and reinforce the meanings of new words. However, learners' preference for determination and social-discovery strategies reflects a choice of learning methods that result in shallow and passive word knowledge. Rote memorizing, the fifth most preferred strategy, provides little assistance to consolidate new words in learners' working memory, as well as to convert passive vocabulary into active

for desirable language fluency. In contrast, employing a wide range of cognitive and memory strategies, such as learning affixes and roots, applying association, categorizing, mnemonic techniques, linking to prior experience, and others, promotes deeper memorizing. These VLSs involve more complex mental data processing leading to holistic comprehensive knowledge. As such kinds of methods are time and effort-consuming, this may explain why participants employ them with low frequency or not at all.

Furthermore, the unpopularity of social strategies for the consolidation of word meanings can origi-

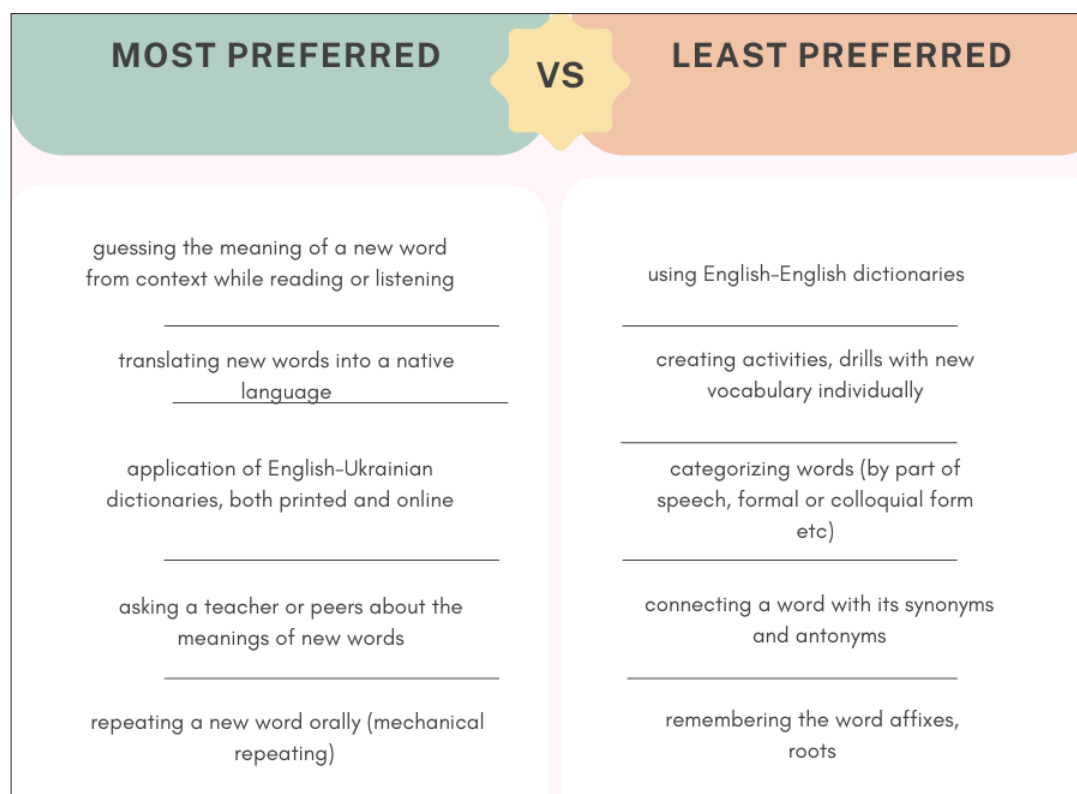


Fig. 5. Students` identification of most& least effective VLSs

nate from poor vocabulary knowledge, resulting in insufficient speaking performance and a language barrier. Most respondents self-assessed their English proficiency level as A1–B1, indicating difficulties in expressing their thoughts. Additional factors that may contribute to the insufficient choice of strategies include the learner’s characteristics (learning style, age etc.) and, importantly, a lack of awareness of some strategies in general and their effectiveness in particular. Given the nature of medical terminology, students prefer asking a teacher or peers about the meaning of a term as an easy way to discover it. Moreover, they avoid using a monolingual dictionary as it requires linking with prior vocabulary knowledge and may result in misinterpretation. However, it is the social strategies that encourage students to put knowledge into practice by interacting with people inside and outside the classroom.

Meta-cognitive strategies play a vital role in successful language learning since they help learners not to lose focus of their learning, and to control their own learning process and progress [5]. This category of strategies involves setting goals, planning, monitoring performance, and evaluating results. Besides, it provides the learner with the maximum exposure to the target vocabulary. Within this group of strategies, reading professional journals, articles, watching movies and podcasts on the topic are used by master

students, but not with a high frequency. The reasons for the relative neglect of these strategies are quite similar to those for the other categories, namely: time-consuming procedure, low level of English, overdependence on the teacher, lack of awareness of the effectiveness of the strategy, unwillingness to take charge of personal learning by undergraduates as opposed to postgraduate students who prefer meta-cognitive strategies.

Conclusion. On the whole, in the light of a learner-centric approach that aim is learning through experience, autonomous strategic learning is the natural outcome of such an approach [19]. In turn, the learner’s specific vocabulary learning efficiency is determined by a range of factors, such as course duration, curriculum complexity, teaching approach, practice opportunities, the composition of the student group, and personal learner peculiarities (gender, learning style, language aptitude, motivation etc.). It is worth noting that the motivational factor of undergraduates of medical faculty at Bogomolets National Medical University was studied earlier [20]. Based on the research results and the principles of the student-centered approach, this paper presents how strategic first and second-year students of University are in terms of medical English vocabulary acquisition.

The findings reveal that the participants have a positive perception of the concept of “know-

ing a word". Nevertheless, there is a mismatch between their understanding of this concept and the ways to achieve this goal. Difficulties in specific vocabulary acquisition that students face indicate, among other factors, the wrong choice or use of strategies. In acknowledging the fact that strategies may be culture-specific, and the same findings may not be observed with people from different backgrounds [3], we find the teacher's role to be influential.

Based on the findings, this study provides some recommendations for teachers of English for Specific purposes. First, it is necessary to implement VLS instruction in the curriculum and integrate it into different kinds of activities. Second, teachers are advised to provide strategy teaching regularly. Students engaged in this process not only get familiar with new methods but also have an opportunity to assess the effectiveness of each strategy on their own and choose the most productive ones.

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