







## Enhancing the Assimilation of Foreign Language Vocabulary when Working with Students of the Digital Generation

Elena I. Chirkova , Elena G. Chernovets  and Elena M. Zorina ()   
Saint Petersburg State University of Architecture and Civil Engineering, Vtoraya Krasnoarmeiskaya, 4,  
190005, Saint Petersburg, Russia  
[zorinaem@bk.ru](mailto:zorinaem@bk.ru)

### Abstract

The article is devoted to the analysis of modern methods for the assimilation of foreign language vocabulary by students belonging to the so-called digital generation. The aim of the study is to show the promising possibilities of non-traditional approaches to memorization. Generation Z students have peculiarities of perception, processing and assimilation of information, so conventional methods do not show good results. The article presents the digitalization of Leitner's technique related to spaced repetition. Special cards serve as a kind of data bank for a foreign language vocabulary. In special applications for mobile phones, you can independently enter data that need to be memorized. This technique shows good results, because a digital device and small amounts of information are used that do not exceed the RAM capabilities of modern students. The division into separate small fragments for better assimilation is also used in the CLIL (Content and Language Integrated Learning) methodology. The results of introducing the method of spaced repetitions into the educational process exhibit a positive dynamics. In addition, the successful introduction of methods related to sound accents and semantic associations is shown. The humorous component is also important because it helps increase learning motivation and remove psychological barriers that interfere with learning. For example, "barking" when performing memorization actions in the helps to remember the process itself and the desired object – one has only to reproduce this funny sound. The psychological characteristics of students of the digital generation require new teaching and memorization methods, so they need a different amount of time to develop a stable lexical skill.

**Keywords:** Digital generation; Lexical unit; Leitner's system; Lexical skill; Basic skills

### Аннотация

Статья посвящена анализу современных методик работы по усвоению иноязычной лексики студентами цифрового поколения. Цель исследования – показать перспективные возможности нетрадиционных подходов к запоминанию. У студентов поколения Z существуют особенности восприятия, переработки и усвоения информации, поэтому обычные методы не приносят хороших результатов. В статье показаны цифровизация методики Лейтнера, связанной с интервальным повторением. Специальные карточки служат своеобразным банком данных для одноязычной лексики. В специальных приложениях для мобильных телефонов можно самостоятельно вносить данные, которые требуют запоминания. Такая методика дает хорошие результаты, потому что используется цифровое устройство и небольшие объемы информации, не превышающие возможности оперативной памяти современных студентов. Деление на отдельные маленькие фрагменты для лучшего усвоения используется и в методике CLIL (Content and Language Integrated Learning). Результаты внедрения в образовательный процесс метода интервальных повторений показали положительную динамику. Кроме того показано успешное внедрение методик, связанных со звуковыми ассоциациями. Юмористическая составляющая также важна, потому что помогает повышать учебную мотивацию и снимать психологические барьеры, мешающие учиться. Например, «гавканье» при совершении действий по запоминанию, помогает в дальнейшем вспомнить сам процесс и нужный объект, стоит только воспроизвести этот смешной звук. Психологические особенности студентов цифрового поколения требуют новых методик обучения и запоминания, им требуется разное время на формирование устойчивого лексического навыка.



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## **Enhancing the Assimilation of Foreign Language Vocabulary when Working with Students of the Digital Generation**

### **INTRODUCTION**

Improving the methods for students to master foreign language vocabulary is constantly under review by foreign language teachers, especially in connection with the limited time allotted to the study of a professional sublanguage in non-linguistic technical universities. The systematic accumulation and expansion of vocabulary is the keystone for all types of speech activity of skills formation (Pirogova, 2019). Learning new vocabulary is an essential part of any lesson (Mokhova et al., 2019).

The peculiarities of working with students of the “digital generation” or generation Z (Prensky, 2001) are associated with their perception of information. Having the ability of mosaic thinking, they knit the ideas with hyperlinks and use intuition while working. “Digital” students participate actively in social networks, and yet they do not like team-project activities, preferring an individual approach by way of images, video and audio information. Digital Natives believe that learning should be of immediate interest, usable and fascinating. J. Coates, the author of the book “Generational learning styles” (Coates, 2007), proposes to make psychological changes in the teacher's communication style with representatives of generation Z. These include a fast pace of learning, switching from one learning task to another, work in groups and pairs, they need mandatory quick feedback, precise requirements and assessment criteria, oral interaction and visibility. All these features also affect the mastery of foreign language vocabulary.

### **FORMULATION OF THE PROBLEM**

The question of the need for purposeful vocabulary memorization has been and remains a subject of debate. Some methodologists believe that there is no need to memorize lexical items at all, the acquisition of vocabulary should take place in the context by means of incidental memorization (see the works of E. I. Passov). The only question is how often one or another lexical item can be actively used with respect to a limited number of classroom activities, the student's desire and ability to independently study vocabulary, using the technique of repeating new material at regular intervals to preserve new units of information in long-term memory (see e.g. the spaced repetition method).

The lack of foreign language communication with native speakers further calls into question the method of voluntary memorization. The techniques for memorizing words offered by various methodologists are designed for regular work with lexical material. Students of technical subjects do not always have time and desire to continually improve their memorization of new words. Consider, for example, the six-point system presented by Kevin Avery (n. d.), British council teacher “1. Read. 2. Keep a dictionary and thesaurus handy. 3. Build your own dictionary. 4. Learn a word a day. 5. Play some games. 6. Engage in conversations.” In principle, this is a good working method, but it is not suitable for those who need a foreign language only for use during their studies at the university (often students believe that a foreign language



will not be useful to them in their future career, memorizing new words is considered a waste of time).

The problem is to determine the amount of necessary lexical minimum required to master a professional topic. According to research by psychologists, for a single presentation of new vocabulary  $7 \pm 2$  units of information are recommended because the size of a student's RAM is 160 bits. But in practice, when organizing purposeful work with vocabulary – performing from 5 to 10 exercises with new educational material – it is possible to master from 20 to 30 lexical units (LU). Using new vocabulary does not take place in a large text passage, but within the sentence context. During one lesson, it is advisable to introduce no more than 8 new terms, though most textbooks do not adhere to this.

### METHODS CREATING

Most of the methodological research is aimed at methods for mastering vocabulary as one of the elements of multidimensional teaching of a foreign language (Liu & Chen, 2020). The criteria and principles for the selection of lexical units (LU) differ (Dmitrusenko, 2015), they may include the frequency of terms, the criterion for taking into account the professional sphere of communication; and according to Okamoto (Okamoto, 2015), the principles of compatibility and word ambiguity. The scientist thinks that frequency is the main principle and criterion for the selection of LU.

Different authors distinguish different stages of lexical skill formation in teaching students, offering different ways of memorizing LU:

- “to write the words in a notebook or on small cards or to write them in a file for using with a computer program;
- to say the words several times; to put the words into different groups using a graphic organizer;
- to make associations” (Umarov, 2018).

At the first stage, the presentation of new lexical units takes place. For example, the comparison of lexical units in a foreign and Russian languages. Such work is aimed at understanding lexical units, memorizing and combining them with each other, and then to use the LU for the realization of communicative goals. Memorizing foreign language vocabulary assumes a well-organized structure, including various types of exercises (Bartel, 2016): exercises for the selection of epithets, comparisons, definitions, characteristics of an object, for describing pictures of objects and objects with certain characteristics, compilation of synonymous or antonymic pairs. There is also a huge variety of types of contextual exercise (Gureeva & Kozmina, 2013).

In the foreign methodological literature, there are studies that could have an impact on the scientific process in Russian higher educational establishments. Thus, Baumann et al. (2003) reveal the morphemic and contextual analysis of the new vocabulary, comparing the effects of morphemic and contextual analysis instruction with those of textbook vocabulary instruction. The results were interpreted as support for teaching vocabulary for specific purposes as well as morphemic analysis. Some evidence for the effectiveness of teaching contextual analysis was also discussed. The main emphasis is on the contextual study of new material, which corresponds to CLIL (Context and Language Integrated Learning).



The works of American scholars (Beck et al., 2013; McKeown & Beck, 2014) highlight the problem of the correlation between vocabulary and writing practice.

An article (Stahl & Fairbanks, 1986) presents a meta-analysis of research on the impact of vocabulary learning on word acquisition and comprehension. This analysis focuses on two main problems: Does vocabulary instruction have a real impact on students' comprehension of the text? What types of vocabulary instruction are most effective? The response to the first question is that an average effect size of .97 could be referred to vocabulary instruction for the comprehension of passages containing the words under study, with an effect of .30 for the criterion of integral comprehension. They both differ significantly from zero. The answer to the second question is that the most effective vocabulary teaching methods should include both definitional and contextual information in their programs; these methods should also involve students in deeper work with new words, involving them in more than one or two mind-manipulations with the words to-be-learned. In addition, the mnemonic keyword method turned out to have reliable effects on memorizing definitions and sentence comprehension.

For the present study, it is particularly interesting to analyze recent publications (Mak et al., 2021) and experimental data obtained and described in 1999 (Swanborn & de Glopper, 1999). Exploratory tiered variability analysis suggests that several factors influence the likelihood of learning an unknown word while reading: pre-sensitization, student level, student reading skill level, and partial word sensitivity of assessment methods, knowledge and amount of text surrounding target words. A model that contains student grading and the assessment test-sensitivity to partitive word knowledge predicts 66% systematic variance in effect size. The implications of this for research and learning need to be discussed.

A meta-analysis of 20 experiments examining incidental word learning during normal reading shows that students memorize around 15% of the unknown words they come across. A homogeneity test indicates that research results differ, although their heterogeneity is relatively small (19%). A research multi-level analysis of the results variability assumes that several factors affect the probability of learning an unknown word while reading: prior sensitization, students' grade level, students' level of reading skills, the sensitivity of assessment methods to partial word knowledge, and the amount of target words text surrounding. A model that contains students' grade level and assessment methods' sensitivity to partial word knowledge predicts 66% of the systematic variability in the effect sizes. Research and instruction consequences are also discussed.

Due to the limited number of hours allocated for the study of the "Foreign Language" discipline, it is impossible to use all the methods mentioned earlier. They are aimed, first of all, at regular memorization of LU in foreign language classes. It is difficult to ensure the repeated use of the studied portion of the vocabulary in the classroom at a technical university, with the regularity of classes once a week for one or two semesters.

Learning in class can be one of the solutions, which, of course, is only a tool for the formation of speech skills. In addition, it is necessary to organize the use of new vocabulary in exercises, written and spoken texts (Chen, 2021). For the modern generation of students who use gadgets even during classes, it is better to memorize new



words in a digital form. As mentioned above, there is the so-called spaced repetition method or the Leitner system, which is aimed at repeating the memorized educational material at certain, constantly increasing intervals. LUs are entered on special flashcards (Nikoopour & Kazemi, 2014) and then the teacher determines how well the student knows them. The better the LU is memorized, the longer the interval of its repetition. There are applications for computers and mobile devices for digital flashcards. For example, Quizlet (quizlet.com), where cards can also be voiced, or StudyStack (studystack.com), which contains elements of gamification.

The assimilation of lexical material means the ability to operate it in the written and oral communication process within the framework of the student's profession. The experience of learning lexical material involves going through several stages, such as perception, comprehension, memorization and assimilation. Before we dwell on each stage, it should be mentioned that teachers are dealing with the so-called generation Z, the young people born in the early 2000s.

Psychologists (Praslov, 2016) analyze the psychological characteristics of this generation. One of the important conditions for working with them is to stimulate their motivation for educational work in the classroom. Everything they work on requires a negative or positive reaction from the teacher or other students. The main thing for them is attention to their personality (Seibert, 2021).

The creation of a positive emotional mood is the main task of the teacher when semantizing LU. This requires a clear statement of the assignment; positive assessment of work results; using teamwork; performing creative tasks that arouse interest among students. One of the important aspects of working to stimulate positive motivation of students is the opportunity to obtain new emotions. Emotions are a special type of human states that can manifest themselves during various situations (including situations of educational activity, since emotions arise in the process of any student's activity).

The methodologists have developed several ways to create an emotional attitude to the material being studied. Generation Z will not experience positive emotions (except perhaps annoyance, boredom and rejection) if you present them with new words simply in the form of a list. Due to their psychological characteristics, it is desirable to present words written in a font of different colors, presented on a colored background, in the form of diagrams, mental maps, accompanied by drawings, comics, small presentations, videos created by other students, i.e., use all possible types of visualization of educational material when perceived by students.

Further comprehension of the studied LUs occurs in the context of written and spoken texts. The psychological peculiarity of Generation Z is the fact that they do not like textual information, but prefer to watch or listen. In this regard, it is necessary to use several small texts in the classroom, instead of one long one.

Unlike the older generations, who are accustomed to obtaining information on their own in books, reference books, etc., which were brought up on the idea that without some effort the necessary information will not be assimilated, generation Z is confident that, if necessary, the necessary information can always be found on the World Wide Web.



At the final part of the lesson, it is necessary to check the strength of mastering the lexical minimum of the lesson. Practice shows that from 2 to 5 LUs are still not remembered. Therefore, it is necessary to use other methods of memorizing these LUs.

As the British psychologist and humorist Jez Rose points out, any action (in our case, memorizing a word), accompanied by an unusual sound, fixes this action or word in memory. An unusual sound, combined with a visualized word, forms its lasting mental imprint in the brain. This is what contributes to the strong memorization of this LU.

In his works, Jez Rose suggests barking when a person tries to remember an action. We propose to accompany the written words with an unusual sound, which is different for each word or group of words. Having identified the words that students have not learned during the lesson, the teacher turns on the recording of unusual sounds (whistling, horse whinnying, bird singing, drumming, locomotive whistle, etc.)

Generation Z is not good at reading textual information, especially if it is large. This is due to the huge information flows in which a modern person lives. Modern students have adapted not to focus on something specific for a long period of time as they understand that the information you need to work can always be found on the Internet.

## CONCLUSION AND DISCUSSION

It must be said that the study of any foreign language, the learning of its lexical side is impossible without memorizing LU. The basis of memorization is repetition, which is a complex, by no means mechanical process. Some words are not particularly difficult to memorize, but sometimes you have to make efforts to learn other ones. The organization of material memorized is most critical in the learning experience. As was previously mentioned, various methods of working with LUs, types of tasks corresponding to the learning goals, mental conditioning help to concentrate attention during the memorization process. G.R. Lomakina argues that the correct organization of the revision process should take into consideration action according to the law of association which says that the more often ideas, events, words, meanings or other items co-occur, the stronger is the connections between them. All connections and associations in the memorizing process assume a greater importance when they are long-lasting: the longer the association, the greater is their significance in memorizing (Lomakina, 2012). In addition, it helps in the formation of communicative competence (Ho, 2020).

In a technical university, with its lack of the required number of lessons for teaching a foreign language, it is impossible to fully implement the comprehensive preparation of memorizing new LU. It is necessary to find other ways to intensify the process of memorizing vocabulary. In addition to the techniques described in foreign and domestic literature, one of the comparatively new methods of memorization is proposed, based on the formation of a persistent mental imprint of this action in the brain. The more unusual the sound, the deeper the imprint that allows you to get to the memories of the meaning of the word(s), phrases, or new word collocations.

Apart from the harsh sound, it would be highly advisable to include sounds that remotely resemble the concepts that make up the educational material. For example, 2-5



words on the topic “money”, which are difficult to memorize, may be accompanied by the sharp metallic sounds, such as “sounds of coins: falling, ringing, sounding, etc.”, “sound of coins being thrown into a piggy bank”, “sound of a slot machine into which coins are thrown”, “sound of a win in a slot machine that dispenses coins”, etc. On the topic of construction specialties one can choose the sounds of a grinder, hammer, knocking on metal, a sledgehammer. Words on the topic “internal combustion engines” can be accompanied by the sounds of a car engine, diesel engine, or engine roar. And so one can create a sound library with a variety of different sharp, loud, unexpected sounds.

It is advisable to have a program for checking LUs on specific topics. Each word is accompanied by a picture or a short video to create associations. If the student has incorrectly named the word, a bright blinking light turns on and a sharp associative sound is played. Thus, meaningful memorization of the linguistic material in a technical university is a badly needed type of work, since it stimulates the thinking process of students, it also develops their memory, and contributes to the accumulation of the necessary images, ideas, and reflections. However, it should be remembered that the memorization process should be considered only as a means of accumulating “linguistic baggage”, which students should learn to draw on when communicating in a foreign language, and it is one of the types of work preceding the speaking activity.

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