

# THE DEVELOPMENT OF COGNITIVE PROCESS AMONG MEDICAL STUDENTS MASTERING THE COURSE "LATIN LANGUAGE AND THE BASICS OF MEDICAL TERMINOLOGY"

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## Abstract

The main goal of modern education is to prepare a competitive personality is on demand side of labor market. Systematic work with medical students, aimed at the development of cognitive processes, mnemonic abilities, to overcome the difficulties associated with memorization, contributes to the achievement of optimal learning outcomes, ensuring a lasting assimilation of knowledge. The continuous development of the intellectual potential of medical students is an integral part of the successful mastering of professional core competencies of higher education of the future doctor today.

**Keywords:** memory, mnemonic techniques, memorization productivity, assimilation of information, translation skills, Latin language.

## INTRODUCTION

The relevance of the idea of continuous education, education not “for life”, but “throughout life” and, accordingly, updating information that makes up the content of education, as well as pedagogical technologies for its transfer to children and adults, is emphasized in modern research (6) . The problem of developing the intellect of medical students is a priority area of modern education in the space of a medical university. Increased requirements for the moral and intellectual qualities of specialists working in the field of healthcare, the high rate of development of high-tech areas in medicine, the constantly growing amount of information are the realities in which the future doctor will have to carry out professional activities. Cognitive competencies

belong to the group of competencies related to human activities.

Thus, the regulatory documents of the Federal State Educational Standard 3++ reflect the requirements for the results of mastering the specialist's program in the direction of "Medicine". As a result of mastering the program, a graduate of a medical university should form universal, general professional physical and professional competencies, including:

“UK-1 - is able to search, critically analyze and synthesize information, apply a systematic approach to solve assigned tasks; UK-7. - is able to manage his time, build and implement the trajectory of self-development based on the principles of education throughout life; GPC-5 is able to solve standard tasks of

professional activity using information, bibliographic resources, biomedical terminology” (1).

Therefore, productive and reproductive cognition and related cognitive processes, intellectual activity associated with the reception, processing, and issuance of information are of great importance.

### Methods and discussion

The object of our study are first-year students studying at a medical university. The experience of working with first-year students at PIMU shows that students, especially primary students, adapt differently to the university system, having different degrees of development of cognitive processes, level

In this connection, in the conditions of an intensive flow of information, a number of students face various difficulties associated with not mastering the acquired knowledge. Thus, setting goals aimed at the effectiveness of the educational process, at intellectual self-development, training, which is based on a conscious approach to obtaining knowledge, possession of methodological techniques and techniques that facilitate the educational process, are the defining guidelines in the organization of educational activities of a modern medical student.

The course “Latin and Fundamentals of Medical Terminology”, studied by first-year students, occupies a special place in the system of language disciplines. Laying the foundations of terminological literacy is impossible without mastering the lexical and grammatical material, which includes about 500-700 terms.

Without the skill of translating terms, it is impossible to accumulate and differentiate system-forming lexical units, which in the future will allow students to use them in professional discourse. All knowledge of the highest order is the result of the integration of knowledge obtained with the help of cognitive mental processes of different levels of complexity. The systemic type of thinking, high indicators of the volume and selectivity of

attention are mandatory components of the subject of medical professional activity.

Their presence for a doctor is significant and important, and the initial stage of professionalization, coinciding with the beginning of education at a university, is a highly sensitive period for the development of cognitive processes. At the same time, memory is especially in demand in medical practice. So, B.A. Yasko notes the importance of mnemonic abilities in the structure of a doctor’s professional competence: “Developed working memory, its large volume, speed and accuracy of reproduction, noise immunity are the main characteristics of memory and significant conditions for the success of a doctor’s professional activity”.

(8, p. 201 ).

Both domestic and foreign scientists (S.P. Bocharova, L.S. Vygotsky, P.I. Zinchenko, R. Katsky, L.K. Latysheva, A.N. Leontiev, J. Miller, R.K. Minyar-Beloruicheva, V.I. Provorotova, T.I. Skorobogatova, T.I. Tivyaeeva, etc.) fix memory in their works as one of the important components of the process of personality formation, correlated with the organization of learning , professional activity, which is a complex of processes by which a person perceives, remembers, stores and reproduces information.

Memory is a process that ensures the construction of a comprehensive image of the world, linking like cement all the building elements of the mental mosaic into a single picture full of life. (3, p.302)

Depending on the aspect of functioning, there are various classifications of types of memory. So, based on the classification of A.V. Suntsova, S.V. Kurdyukova, representing a neuropsychological approach to the development of memory, provides a typology of memory according to various criteria. So, from the point of view of the duration of information storage, it stands out:

short-term memory (primary, active), which tends to store data for a relatively short period of time. Short-term memory is one of the

mental processes, which is characterized by a limited storage time of information and a limited number of retained elements. The selection of material is carried out through the focus of attention on certain objects.

Regardless of the purpose of memorization, information is primarily stored in short-term memory. In the future, the data is transferred to long-term storage, or lose their relevance and are forced out. With the help of short-term information, a large amount of information is processed: unused information is filtered out and potentially useful information remains;

-random access memory - designed to store information for a certain, predetermined period necessary to perform a certain action or operation. The storage period of information can vary from a few seconds to several days. Information is stored in RAM if it is currently being used or may be needed in the near future. This type of memory is transitional from short-term to long-term, as it includes elements of both types;

-long-term memory - is able to store information for an unlimited period of time, accommodating a huge amount of knowledge, skills and abilities. Long-term memory is the most reliable storage of information and is very important for learning foreign languages.

By the nature of the memorized material, we can distinguish:

- motor memory - memorization, reproduction of various movements;

- emotional memory – memory for experiences, feelings, emotions. The strength of memorizing material is based on emotional memory - what causes emotions in a person is remembered more easily and for a longer period.

-figurative memory associated with the memorization and reproduction of sensory images of objects and phenomena, their properties, relationships between them. Figurative memory can be divided according to the type of analyzers involved in memorization: auditory, visual, olfactory, tactile.

Verbal or verbal-logical - the memorization of information is preceded by the understanding of information, the establishment of logical connections. Of great importance is the word, thought, logic. The assimilation of knowledge in the learning process is based on the use of verbal-logical memory.

Depending on which analyzer takes the greatest part in the memorization process, the following types of memory are distinguished: visual, auditory, tactile, etc. Visual and auditory memory are leading. Parallel use of memory of various modalities creates optimal conditions for memorizing material.

According to the nature of the goals of mnemonic activity, arbitrary and involuntary memory are distinguished. With involuntary memorization, objects are fixed in memory without any effort on the part of the memorizer. Involuntarily, material that is of interest, is of great importance, or is emotionally charged can be remembered. Arbitrary memory implies the presence of a specific goal of memorization, applying certain volitional efforts. (7, p.13)

Thus, we can conclude that systematic knowledge arises as a result of special activities in which the task is to memorize and retain the relevant material. Carrying out directed work with medical students using special methods for developing the memory capacity of future doctors, the proposed modern pedagogical, psychological and developmental methods in the classroom on “Latin language and the basics of medical terminology” included several stages.

Stage 1 - orientation, the main goal of which is to form an orientation, readiness for self-development, as a new level of functioning, for intensification and increase in the efficiency of one's own intellectual activity, meaningful use of certain techniques, mnemonic techniques that ensure a solid assimilation of knowledge for optimal small achievement of the result of training on the material of the course “Latin language and the basics of medical terminology”. The main tasks of this stage:

- the formation of beliefs in the need for development of one's own intellectual potential

in the structure of future professional activity related to medicine;

- to give a semantic setting of significance, role, place of memory development in the structure of formation professionally important qualities necessary for professional development;

- deepening of ideas and systematization of own intellectual resources and opportunities for their development

Stage 2 - transformative, at which students were offered to study the theoretical foundations related to the problem of memory, familiarization and mastery of various techniques that make it possible to qualitatively improve the learning process. The main tasks of this stage were:

- formation of a system of knowledge about the general organization of brain memory mechanisms, about the possibility of influencing one's own brain through memory training;

- familiarization with the features associated with the psychophysiological processes of memory functioning;

- mastery of various techniques aimed at more productive memorization and reproduction of information.

For mastering any foreign language, such processes as memorization, reproduction, storage of information are important for the purpose of further recognition of grammatical and lexical units. From a practical point of view, it is memorization that determines the completeness and accuracy of the preservation and subsequent reproduction of the material, the strength and duration of its preservation. In this regard, a special place was given to the use of mnemonic techniques - methods of storing information in memory and providing it with traces of memory, clues that speed up access to it, adapted to the course of the Latin language.

Mnemonics is based on arbitrary (purposefully organized) memory, therefore, mental ordering of memorized information and linking it together using various techniques is used for

memorization. For arrangement and binding, the possibilities of thinking (especially figurative), imagination, attention are used. In teaching Latin, it is advisable to use the following methods of language mnemonics:

the method of sound associations: an example is the word Tympanum – a drum, which is remembered if you imagine how a person plays the rhythm with his hands on a drum: tum pa – num pa. Ala (wing) is remembered in the phrase "a bird flew".

The method of visual associations: you can remember the word carpus (wrist) by imagining a picture that a carp was caught, but it pulled out of your hands and bit your wrist. The word carpus is consonant with the word "carp".

The method of acronyms (abbreviations, letter coding) is focused on creating semantic phrases with an emphasis on initial letters, can be used to memorize such terms as anterior (front), posterior (back), superior (upper), inferior (lower). The first letters of each word form the acronym APSI. We fix that the words go in a logical order in the directions: front, back, top, bottom (for better memorization, we pronounce the directions and point them with a finger). We memorize the acronym by consonance with the sound of sneezing "apchhi".

Also, using this method, you can remember the endings of nouns of the 3rd declension of the masculine gender in the nominative case, arranging them in such an order that they make up a tongue twister

– ex – er - es – os – or - o.

the rhyme method is one of the most common ways of memorizing words, in which words of the native and studied language can be used. For example, you can come up with a small poem to memorize the word genus: "The boy Gena is crying bitterly, he hit his knee."

- the method of similarities in the spelling of words and its meaning allows us to compare Russian and Latin spellings and identify patterns. In the words Farfara - Mother and Stepmother, three letters a can be found. To make it easier to memorize the word Jugum - elevation, you can pay attention to how the first

letter of the word is written - j, the dot seems to rise above it and be a sign for remembering the term elevation.

- the method of studying the etymology of a word contributes to the memorization of terms. So, the literal translation of the word *Hippophae* (sea buckthorn) from ancient Greek is "brilliant horse". The ancient Greeks fattened weakened, sick horses with sea buckthorn leaves. Horses on such a diet got better, gaining roundness, their coat became smooth, glossy, shiny. *Helianthus* - sunflower comes from the Greek words "helios" ("sun"; we associate with Helios - the ancient Greek god of the sun) and "anthemon" ("flower").

The method of dividing a word into components is especially effective when memorizing the names of medicinal plants, for example, in the composition of the word *Millefolium* - we single out yarrow "mille" is a thousand and "folium" is a leaf. As part of the word *manubrium* - the handle is "manu" - part of the word

"manus" - hand.

Thus, the correct systematization of information, understanding, establishing connections, structures, principles, patterns of construction associations, non-trivial, vivid images - all this increases the productivity of memorization and assimilation of information and, as a result, leads to a more effective learning process.

Also, for more productive memorization of the lexical material of the Latin language course, first-year students were offered to study the Quizlet application. This service is a flexible tool that makes it easy to remember any information that can be presented in the form of cards. The service includes three types of subscriptions — student, teacher and free.

To work, you need to create a list of words to memorize. Words can be sorted alphabetically or by adding to a set. The application allows you to listen to words in Latin and Russian, which makes it possible not only to pay attention to the spelling, but also to hear the pronunciation with the correct stress. The

following sections are available in the study block:

Flashcards, Learn, Speller and Test, Write. The functionality of the service can upload images and record your own voice, as well as train the correct spelling of words. Thus, the use of auditory and visual methods of information representation will be effective for students with different leading representational systems.

The use of this service allows you to control the acquired knowledge. For example, in the "Test" mode, a student can check himself, see the result of his work. The system allows you to select different types and volume of questions, the language in which testing will be conducted. The functionality of the service also offers various types of games. So, the game "Select"

- offers to connect the cards with the correct answers in pairs. The game "Gravity" requires the correct spelling of the word to move to the next level. In this block, you can compete with your friends, which makes learning even more interesting and exciting.

Thus, resembling an intellectual game, the Quizlet learning service increases students' learning productivity, motivation to study the subject, and, due to its accessibility, significantly saves time on studying the discipline.

Stage 3 - practical, the main purpose of which was to consolidate, implement the knowledge gained in practice. This stage is characterized by the formation of an attitude towards self-development, an orientation towards self-perfection.

### **Formation**

For a more complete and active work with lexical and grammatical material, to work out the function of fixing connections, it was carried out with the help of specially organized material, in which the central place belongs to the organization of the subject's actions. Such actions as grouping, correlation leads to the selection and formation of certain connections,

repetition is only a condition for the implementation of such actions.

The function of fixing links is performed not by repetition, but by the act of correct reproduction of the object, the correspondence of the reproduced image to the object of memorization. For more active and complex work with the material, various types of exercises were developed. So, in the section "clinical terminology", students were offered such tasks that contribute to the memorization of term elements: determine common term elements for each group of words, group and determine the meaning of a term with common term elements, distribute terms in accordance with final term elements, etc. .

Thus, the use of complex intellectual methods for transforming the material, intensive and independent work of students with it has shown its effectiveness. During the performance of tasks, medical students, on the one hand, observed the transformation of knowledge and skills into personal experience, and on the other hand, there was an understanding, knowledge of the significance of this experience in overcoming situationally conditioned difficulties associated with the study of the material.

Stage 4 - reflective-evaluative, the result of which was the understanding that the professionally important qualities of a doctor are of a systemic nature. Constant intellectual development is an objective requirement of the medical profession. The functional structure of professional activity is the basis for professionally important qualities, which, in turn, are closely related to cognitive competencies, namely, a large amount of operative and long-term memory.

At this stage, it was important to initiate the exit of medical students into a reflective position and introspection of their own intellectual activity, determine the directions for further development, generalize the experience gained from the point of view of its application in other areas of activity.

An analysis of the effectiveness of specially conducted work with first-year students allows

us to conclude that knowledge of the patterns of how memory organizes the information received, the application various mnemonic techniques in the learning process, suitable and effective for each student personally, allows you to properly structure the educational material, thus achieving a high quality of its assimilation with optimal time expenditure, contributes to the development of associative thinking, attentiveness, the ability to identify the structure and systematize the studied linguistic material, which ultimately leads to a higher level of memory development and facilitates the learning process and on other subjects.

Summing up, we note that the discipline "Latin language and the basics of medical terminology" has significant potential not only in terms of the formation of professional competence, but also contributes to the impact on the intellect and personality of students through the development of such significant for learning and personal growth cognitive processes such as memory, thinking, attention. The activity of a doctor belongs to the group of practical intellectual types of labor.

Therefore, it is very important to support and develop in students the need for self-development, self-change, interest in knowledge - transformations, knowledge - a tool that will later allow them to realize themselves in the professional field of their future profession. It is students that are the central period of the professional development of a person. This is the age of intensive and active socialization, professional development, the time when professional knowledge, skills and abilities are acquired.

Obtained by the researchers of the B.G. Ananiev's data indicate that "student age is the time of the most complex structuring of the intellect, which is very individual and variable." (2, p. 346) during the student period of professional development, the future doctor not only acquires professional knowledge, skills and abilities, but also chooses ways to form professionally important qualities necessary for the success of future professional activity.

## Conclusion

We consider it especially important to introduce students not only to the meanings, purposes, content of future professional activity, but also to show the features of its development, to give an orientation to the fact that personal and professional development today are mutually complementary processes, the professionalism of a doctor is correlated with a constant specialist self-development. To ensure the transformation of a medical student from an object of pedagogical influence into a subject of education interested in self-change, thereby providing a solid foundation for him as a professional capable of building, changing and developing his activities in the future.

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