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## **NEUROPHYSIOLOGY AND NEUROLINGUISTICS BACKGROUND OF THE STUDING UKRAINIAN AS FOREIGN LANGUAGE**

**Summary.** After adopting the new (2019) language law the learning of Ukrainian as the foreign is not only the matter of desire or taste but also it is necessary for getting citizenship. So it is set up new challenges for teachers. The *purpose* of the article is to show the interconnection of neurophysiology and neurolinguistics with methods of teaching. The *object* of this article is to describe the usage of neurolinguistics as a basis for the creation of modern foreign language teaching techniques. The *subject* of the article is to study the role of neurophysiology in the development of special techniques and the creation of a theoretical basis for the creation of modern methods of learning Ukrainian as a foreign language. There are used the descriptive and analytical *methods*. The *results* of this research are working-out the new way of teaching

the Ukrainian language for foreigners and working-out the ways of creating text books. The *actuality* of this research is the attempting of making new approach and effort to the general approach for studying foreign language according to the reality of students' brain work. The *practical value* of the research is the possibility of using this results for investigation and optimization the studying the linguistics phenomena, for optimization of studying process for linguists, for essential understanding of fundamental linguistics processes, to form new teaching plans according to the new reality of new ways of thinking and brain working.

**Key words:** brain work, neurophysiology, neurolinguistics, methods of teaching, Ukrainian as foreign language.

**Problem-setting.** Human interest to the work of the brain and desire of ways to optimize it is unstoppable: the interests to the studying of memory and thought processes features — is constantly growing, namely the question of improving teaching methods in this context. Scientific approaches to the study and definition of the brain work category are being developed actively in such modern fields as psychology (considers thinking as thought processes that underlie cognition, examines types of individual thinking of the individual and processes of perception and assimilation of new material), philosophy (defines understanding itself as thinking, makes an attempt to look at the process of thinking «from the outside»), logic (systematizes and classifies stages of thinking), sociology (explains the dependence of the level of thinking on the degree of development of society in general and social development of the individual in this society, the collective conscious, institutions and belonging to a particular cultural community), physiology (describes the basic physiological stages of the process of thinking occurring at the cellular level), cybernetics (considers thinking as an information process of receiving and processing information), neurophysiology of perception learning as a purely physical process at the level of our body [1, p. 14]. As we can notice the brain work categories are extremely important so it is impossible to reject the peculiarities of physiological perception in the process of teaching.

The relevance of the issue of studying the Ukrainian language as a foreign language consists of several aspects: objective aspect (in 2019 the new Language Law was introduced, which significantly expanded the boundaries of compulsory usage of the Ukrainian language that's why the necessity of its studying increased greatly), purely linguistic aspect (language is constantly updated, new rules are being developed, learning process — continuous and infinite), neurolinguistics aspect (under the influence of technological factors changes the way of perception of information, changes the brain work, which we can't ignore during the teaching process) [6].

The problem of neurolinguistics now arises much more broadly, because if earlier neurolinguistic approaches were understood only from the point of view of aphasia correction, at the beginning of the 21st century we can speak about the application of special knowledge in neurolinguistics, neurophysiology, psychology, suggestiology in work [2].

**Task-setting.** The object of this research is to investigate the usage of neurolinguistics as a basis for the creation of modern foreign language teaching techniques. And the subject is to study the role of neurophysiology in the development of special techniques and the creation of a theoretical basis for the creation of modern methods of learning Ukrainian as a foreign language. The purpose of our study is to identify the features of neurophysiological perception of information and linguistic expression of thinking processes. Therefore, it is necessary to consider the problem of brain work in the context of learning foreign languages in general and studying of the Ukrainian language as an integral part of this process. After all, this is a key issue when concluding a program that will maximize its impact [1, p. 7; 6].

**The basic material presentation.** With the development of science, more and more attention is paid to the issues that underlie philosophy and linguistics: the analysis of speech phrases, problems of meaning, the study of speech phenomena and related properties of different brain departments, which, in turn, can be characterized as thinking, which is part of the mental processes that carry consciousness [1, p. 17; 7, p. 9].

At the present stage of society's development, the old techniques of influence, presentation and studying in general are not effective under the influence of the development of modern information technologies. But the general stages of brain work have not remained unchanged, so a strategy to optimize the swim when learning a foreign language should be developed.

Thus, at the general level, the physiology of thinking is studied as a certain function of the brain, the mechanisms of which correspond to neurons of the cerebral cortex, whose various areas perform specific functions: the temporal lobe is responsible for memory processes, the frontal lobe — for making plans, choosing a goal, making a decision, associative fields of temporal lobe, frontal and occipital lobes — for language use [1, p. 18].

There is a special area of scientific knowledge — psychophysiology, which studies the physiological foundations of human mental activity, studies the behavior and inner world of the individual through the prism of physiological changes [6]. And the dissemination of knowledge beyond the narrow circle of neurophysiologists is extremely important: it allows to change the misconception of «folk» psychophysiology to the real knowledge that is in the arsenal of science, and pedagogy in particular, and especially the aspect of foreign language learning. This knowledge forms the necessary basis for the formation of conscious ideas about the healthy lifestyle of each person [6].

The term «physiological psychology» was introduced by W. Wundt in the late 19<sup>th</sup> century, and the term psychological physiology by A. Luria to highlight a systematic approach to the study of mental processes.

This science is based on Anokhin's theory of functional systems. The other science of neuropsychology was formed on the border of several disciplines (neurosurgeons, psychologists, physiologists) and was based on the analysis of the effects of local brain damage. A significant contribution to the development of its basic principles made A. Luria, who formed the theory of systematic dynamic localization of mental processes. The emergence of tomographic studies extends the possibility of non-invasive analysis of the human brain for norms and pathology, thereby bringing the task of psychophysiology and neuropsychology closer [6].

Therefore, if we approach the process of learning a foreign language, as a purely physiological and mental process, then you should rely on knowledge of the autonomic system and its sympathetic and parasympathetic departments. Thus, Walter Cannon emphasized that the sympathetic nervous system expands the range of endurance of the organism during extreme conditions, and the functioning of the organism at the base provides parasympathetic system. In other words, the sympathetic system ignites and activates, and the parasympathetic system inhibits and soothes [6]. The peculiarities of functioning of the autonomic nervous system are the reciprocal interaction of its components (parasympathetic and sympathetic systems), and the parallel existence of several ways of providing functions, that is, the absence of a single center of human character and character.

Therefore, based on basic knowledge of neurophysiology, basic criteria have been worked out that influence the brain's function in the perception of information, including the study of a foreign language [1; 6]:

- *materiality*— this principle is that the summary characteristics of any mental process can be described, measured only in terms and relations of external objects, the physical existence of which is its meaning;

- *subjectivity*— is that in the picture of the mental process there are hidden changes of the organ-carrier that implements this process, and the final, final parameters can't be formulated in their own physiological language of those quantities and phenomena that can be found in the human brain;

- *sensory inaccessibility*— is characterized by the fact that psychic processes are inaccessible to direct sensory observation: to its carrier-subject, a mental process (perception or thought) opens the properties of the object, leaving hidden changes in the brain or human;

- *spontaneous activity*— unlike the preceding characteristics, determines not the direct relation of an object or its direct-substrate to the brain, and its expression in a behavioral act, in an external action, an inducement directed by the mental process.

**Conclusions.** Thus, only the knowledge of the teacher of physiological features of the student can effectively build the process, and for the compiler of the textbooks should be different effects. Applying the terms of pedagogy, the sympathetic system is responsible for control work, tests, active emotional perception, and parasympathetic — allows you to focus on one issue and get into its essence, without paying attention to minor or external stimuli. In other words, we cannot disregard these facts when compiling programs and textbooks on the subject «Ukrainian as a Foreign Language». Namely, emotional tasks should alternate with monotonous grammar exercises. And in order to make the «imperceptible brain process» «noticeable,» you have to split the material, and after each small block there should be a test work with the number of points, so that everyone who studies can clearly see the result of their brain activity. And this will certainly raise the level of motivation.

The **practical value** of this study is that its results and conclusions can be used in the course of lecturing and conducting seminars on the methods of foreign languages and neurolinguistics, philosophy (in the context of communication and thinking and perception of native and foreign languages).

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## НЕЙРОФІЗІОЛОГІЯ ТА НЕЙРОЛІНГВІСТИКА ЯК ПІДґРУНТЯ ВИВЧЕННЯ УКРАЇНСЬКОЇ МОВИ ЯК ІНОЗЕМНОЇ

**Анотація.** Після прийняття нового (2019) закону про мову вивчення української мови як іноземної — це не лише питання бажання чи смаку, але й необхідність для отримання громадянства. Таким чином, це ставить перед викладачами нові виклики. **Метою** статті є показати взаємозв'язок нейрофізіології та нейролінгвістики з методами навчання. **Об'єктом** вивчення є опис використання нейролінгвістики як основи для створення сучасних методик навчання іноземної мови, а **предметом** є вивчення ролі нейрофізіології в розробці спеціальних методик і створенні теоретичних засад для використання сучасних методів вивчення української мови як іноземної. У процесі дослідження було використано описовий і аналітичний **методи**. **Результати** дослідження — це винахід нового способу навчання української мови та напрацювання процедури та способів творення підручників. **Актуальність** статті — це спроба розробити новий підхід і поновити загальновідомі підходи до вивчення іноземної мови відповідно до реальної роботи головного мозку в процесі навчання. **Практична цінність** дослідження полягає у можливості використання цих результатів для дослідження й оптимізації явищ вивчення лінгвістики, для оптимізації навчального процесу, істотного розуміння основних лінгвістичних процесів і формування нових навчальних планів відповідно до нової реальності, яка потребує нових способів мислення та роботи мозку.

**Ключові слова:** робота мозку, нейрофізіологія, нейролінгвістика, методи навчання, українська мова як іноземна.

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## НЕЙРОФИЗИОЛОГИЯ И НЕЙРОЛИНГВИСТИКА КАК ОБОСНОВАНИЕ ИЗУЧЕНИЯ УКРАИНСКОГО ЯЗЫКА КАК ИНОСТРАННОГО

**Аннотация.** После принятия нового (2019) закона о языке изучение украинского языка как иностранного — это не только желание или дело вкуса, но и необходимость при получении гражданства. Так что это ставит новые задачи перед учителями сейчас. **Целью** статьи является показать взаимосвязь нейрофизиологии и нейролингвистики с методами обучения и описание использования нейролингвистики в качестве основы для создания современных методик преподавания иностранного языка, а **предметом** — изучение роли нейрофизиологии в разработке специальных методик и создании теоретической основы для создания современных методов изучения украинского языка как иностранного. При исследовании этого вопроса использовались описательный и аналитические **методы**. **Результатом** исследования можно считать разработку нового способа обучения украинскому языку как иностранному и обновление процедуры создания учебников для обучения украинскому языку как иностранному. **Актуальность** работы заключается в попытке выработать новый подход, усилив общепринятый подход к изучению иностранного языка в соответствии с реальными особенностями работы головного мозга студентов. **Практическая ценность** исследования заключается в возможности использования этих результатов для исследования и оптимизации изучения лингвистических явлений, оптимизации процесса обучения украинскому языку как иностранному, для понимания основных процессов

лингвистики, для формирования новых учебных планов в соответствии с новой реальностью, которая требует новых способов мышления и работы головного мозга.

**Ключевые слова:** работа мозга, нейрофизиология, нейролингвистика, методика обучения, украинский язык как иностранный.

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