THE ROLE OF NEUROLINGUISTICS IN FOREIGN LANGUAGE LEARNING

Filimonova A.S.,
A first-year student of VSU named after P.M. Masherov, Vitebsk
Scientific supervisor – Kazhekina L.V., senior lecturer

Language is particularly broad and complex structure. It can affect ideas, perceptions, and concepts. We use language to communicate and connect with other human beings every day. Of course, language is an extremely complex behavior system, and it is not very easy to figure out exactly where it is formed. Early neuroscientists did not have special equipment such as fMRI (functional magnetic resonance imaging) or IEEG (electroencephalography) to look inside the brain like we do now. Understanding the brain helps us understand how language is formed and interpreted. Fortunately, over the years scientists have come up with a whole range of ways of looking and understanding where and how language happens; welcome to the field of neurolinguistics. The purpose of this research is to understand how learning foreign language affects the brain of a person.

Materials and methods. The research was based on numerous scientific articles on this topic. The main methods that were used in the research are the following: an analytical study of sources on this problem and descriptive method.

Results and their discussion. The first questions that comes to mind are: "What is neurolinguistics?", "How our brain connected to the language?", "How learning a new language can affect our brain?" and "Are there any cons in speaking two or more languages?". Neurolinguistics is the study of the relationship between language and the human brain. The study of neurolinguistics is broad; it includes language, speech disorders, reading disorders and aphasias – disorders from brain damage. The human brain is divided into two hemispheres the right and the left one. The left hemisphere is the analytical thinking, mathematics, logic and it is involved in decision making and in language itself. Right hemisphere is responsible for creative thinking such as music, art, daydreaming, imagination and even emotional intelligence. The relationship between the brain and the body is contralateral which means the left hemisphere controls the right side of the body while the right hemisphere controls the left side.

What learning new languages do to the brain is truly extraordinary. However, learning a new language is a little more than the working of a muscle. It can be really challenging especially later in life. There are few areas in the brain that typically associated with language acquisition and storage for entrance, we have Broca's area — region in the frontal lobe that involved in speech and language, specifically in producing coherent and fluid speech. Patients with an injury in Boca's area find it very difficult to find and say the right words, although they probably know exactly what they want to say. For example:

• *"Yes … ah … Monday … er … Dad and Peter … end Dad … er … hospital … and ah … Wednesday … Wednesday, none o'clock … and oh … Thursday … ten o'clock, ah doctors … two … doctors … and er … teeth … yeah."*

The second area that involved in language acquisition is Wernicke's area which was discovered and named after German neurologist. This area controls your ability to understand and select the right words to use when you talk. Patients who suffer from Wernicke's aphasia are unable to understand written and / or spoken words, their speech remains fluent but at the same time meaningless, for entrance:

• *"Mother is away here working her work to get her better, but when she's looking the two boys looking in the other part. She's working another time."*

Is there any difference in the brain between people who learn two or more languages and people who can speak only one? Multilingualism has been shown to have many social, psychological and lifestyle advantages, examples include:

1) people who speak more than one language tented to have a higher gray matter count which can improve prefrontal cortex functions and concentration.

2) people who learn more than one language usually develop dementia four to four-and-a-half years later than those who don't. The more complex a certain skill is the more likely it is to have a positive effect on cognitive reserve.

3) The brain of bilingual person can raise your language proficiency to learn more languages easily, because your brain is already primed for learning different languages by comparing one language to another.

4)With that you can learn about others cultures and broaden your views of the world. Understanding more than one language makes it easier to navigate the world and interact with other people but it's the cognitive effects of language acquisition.

Conclusions. Neurolinguistics plays crucial role in the process of learning, understanding and improving language. It is nearly impossible to do or think about anything without using language, whether this entails following a set of written instructions or an internal talk-through by an inner voice. Understanding the relationship between the brain and language not only offers insight into language acquisition but also provides guidance and strategies to enhance your learning experiences. It is impossible to fully understand the human brain without comprehending the impact of language, both in the immediate experience and as a formative force during earlier stages of learning and experience. Through language acquisition, we can observe the essence of human nature. Languages, these deeply structured cultural objects that we inherit from prior generations work in conjunction with our biological inheritance to form the structure of human brains.

Sources

1. Teresa, J. K. Language Learning and Its Impact on the Brain: Connecting Language Learning with the Mind / Teresa, J.K. // Foreign language annals. — 2006. — Vol. 39, №3. — P. 475-477.

2. Gray matter volume differences between early bilinguals and monolinguals [Electronic resource]. — Access mode: https://onlinelibrary.wiley.com/doi/10.1002/hbm.26008. — Date of access: 07.12.2022.

3. The amazing benefits of being bilingual [Electronic resource]. — Access mode: https://www.bbc.com/future/article/20160811. — Date of access: 10.12.2022.

4. Study shows exposure to multiple languages may make it easier to learn one [Electronic resource]. — Access mode: https://www.washingtonon.edu/news/2019/09/05. — Date of access: 10.12.2022.