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THE INFLUENCE OF FOREIGN LANGUAGES LEARNING ON BUILDING BRAIN NEURAL PATHWAYS

Islyamova Kristina Sedrakovna
Lecturer
Kharkiv National University of Economics
by Simon Kuznets
Ivaniga Oryna
Senior Lecturer
Kharkiv National University of Economics
by Simon Kuznets

Annotation: In this article we would search the process of foreign language learning considering the mechanism of neural pathways building. The ways of getting better results in interaction between teacher and students will be observed as well as methods to make this process more effective.

Key words: neural pathways, neural connections, brain, foreign languages learning, psychosomatics, educational process.

We would like to start this article with term neural pathway or connection. In brief, “a neural pathway is a series of connected neurons that send signals from one part of the brain to another. Neurons come in three main types: motor neurons that control muscles; sensory neurons that are stimulated by our senses; and inter-neurons that connect neurons together. These connected neurons process the information we receive. It is these that enable us to interact, as well as experience emotions and sensations. They create our memories and enable us to learn”. [1, p.3]. It means, from our birth neural are forming and developing. Foreign language learning is one of the ways to accelerate and raise these connections. Being teachers, we can add that there are some essential factors every teacher should understand to enhance and maintain

this formation during process of education. Further in this article we will underline and emphasize these factors for better teaching and learning processes.

“Every person is born with many neurons, but very few connections between them. These connections are built as we interact with the world around us and ultimately create us as we are. But sometimes you have a desire to slightly modify these formed connections. It would seem that this should be easy, because they developed with us without much effort on our part in our youth. However, the formation of new neural pathways in adulthood is surprisingly difficult. Old connections are so effective that letting go of them makes you feel as if your survival is at stake. Any new nerve chains are very fragile compared to old ones. When you can understand how difficult it is to create new neural pathways in the human brain, you will rejoice at your perseverance in this direction than berating yourself for the slow progress in their formation”, says Loretta Graziano Breuning in her book “Hormones of happiness”. [2. p.78].

We all are creating neural connections throughout life as we are mammals, unlike species with stable connections. These connections are created as the world around us affects our senses, which send appropriate electrical impulses to the brain. These impulses start neural pathways along which other impulses will run faster and easier in the future. Each individual's brain is tuned to an individual experience. Below are five ways that experience physically changes your brain. According to this we can assume that teacher’s individual approach and understanding of every student in foreign languages learning and teaching is essential and very important. To choose the pace, volume of material, emotional state are one of the main factors for teacher to notice and build the educational process.

A constantly working neuron over time becomes covered with a membrane of a special substance called myelin. This substance significantly increases the efficiency of the neuron as a conductor of electrical impulses. This can be compared to the fact that insulated wires can withstand significantly more stress than wires can bare. The neurons covered with myelin work without unnecessary effort, which can be characterized as slow, "open" neurons. Neurons with myelin look more white than

gray, so we divide our brain into “white” and “gray.”

Basically, the coverage of neurons with myelin is completed by the age of two years. Baby’s body learns to move, see and hear. When a mammal is born, a mental model of the world around it must be formed in brain, which will provide it with opportunities for survival. Therefore, the production of myelin in a child is maximum at birth, and by the age of seven it decreases slightly. By this time, you no longer need to re-learn the truth that fire burns, and gravity can make you fall. By the age of puberty, the formation of myelin in our bodies is again activated. This is due to the fact that as mammal we have to re-tune our brain to find so to say “the best mate”. [2, p.157].

Everything we do purposefully and consistently during our myelinic active growth period - it creates powerful and branched neural pathways in our brain. That is why so often the genius is manifested precisely in childhood. That is why it becomes so difficult to learn foreign languages at the end of adolescence. As an adult, we can memorize foreign words, but more often than not, we cannot quickly pick them up to express our thoughts. This is because our verbal memory is concentrated in thin neurons not covered with myelin. Powerful myelinated neural connections are busy with high mental activity, so new electrical impulses hardly find free neurons.

Foreign languages learning is one of many processes to build neural pathways. The process can be more effective if we know the mechanism of their formation and consider it in educational process.

As we all know - experience improves the efficiency of the information perception. It means the more pictures our brain knows, the more movements our body remembers from the early age, as psychosomatics science says – the better and faster the process of education is.

A synapse - the point of contact (a small gap) between two neurons – is the main helper in this process. The electrical impulse in our brain can move only if it reaches the end of the neuron with sufficient force to "jump" over this gap to the next neuron. These barriers help us to filter out really important incoming information from irrelevant so-called "noise". The passage of an electrical impulse through

synaptic gaps is a very complex natural mechanism between neurons. There are over 100 trillion synaptic connections in the human brain.

At a conscious level, you cannot decide which synaptic connections you should develop. They are formed in two main ways:

1) Gradually, by repeated repetition.

2) Simultaneously, under the influence of strong emotions.

That is why it is so important for teacher to explain all the material in structured way for giving repetitions and check if a student has already created all necessary neural connections. Emotional contact can add to this process a lot. Using games, jokes, life stories from both – teacher or student's life – can give those anchors to remember any information forever. [3, p.87] In psychosomatics there is a statement -body never lies. Movements of body in game process, gestures, manner can give body memory which is one of the most effective, non-verbal helpers in educational and teaching processes. According to our teachers' practice, we noticed the best results in foreign languages learning is when a student becomes relaxed and open during the lesson and communication starts to be "alive" in process of training speaking aspect especially. The information he or she gets during such so to say "relaxed" process of education is remembered for a long time as he remembers it due to emotional aspect through his body - eyes, ears, voice intonation, gestures.

As neurals have the ability to get older – we can try to repeat some topic learning in some other way - depending on student's age and interests. The main idea is to coincide in students' interests and feel the point of connection in educational process. This involvement of both sides gives the state of so to say "rapport" where the process of learning and teaching becomes a natural and harmonical process of interaction. The times of strict and disciplined lessons have gone and the world nowadays is changing to more sensitive and intellectual side in all the processes of communication. Our brain needs more information as well as more communication including sensitive factors - these aspects give great effect to building new neural pathways.

To sum up, we would like to underline the importance of mental growth of

teacher, to understand all the processes in forming neural connections, to be attentive to teacher's emotional state and to consider all these factors in process of teaching foreign languages. We hope it can make the educational process more effective and interesting for both sides of educational process.

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