

NEURO-PSYCHOLOGICAL APPROACH TO TEACHING GENERAL ENGLISH TO THE FIRST YEAR STUDENTS OF THE TRANSLATION DEPARTMENT

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Abstract. *The work deals with the problems of improving General English teaching materials for undergraduates in terms of the neuro-psychological trends in Foreign Language Teaching Methodology and developing a tutorial based on the knowledge of students' cognitive styles caused by the individual profile of the functional asymmetry of the brain, i.e. we aim at proposing the methods of neuropsychological approach implementation in the educational process. The topicality of the research is attributed to the lack of teaching materials applying neuro-psychological approach, though it is proved to be productive, as its implementation is known to help the process of mastering a foreign language. The primary methods used are as follows: observation, pedagogical experiment, statistical processing of data. Neuro-psychologically grounded teaching methodology forms the basis of the English language successful mastering, as it takes into account such extremely important features of the student as the profile of his inter-hemispheric asymmetry, which in its turn determines the specific cognitive style, and hence the type of mastering the foreign language.*

Keywords: *brain functional asymmetry, cognitive style, exercise, neuro-psychological approach, system of exercises.*

Introduction

The profound knowledge of the foreign language is the basis of the translator's/ interpreter's linguistic competence which measures the level of the translation success (Vysotskaya, 2016). Subsequently, it is extremely important to provide high-quality language training to the first year students of the translation department.

This paper is aimed at showing one of the possible ways of improving the existing methodology of the foreign language teaching. It deals with the neuropsychological approach to organizing the learning of General English on the undergraduate level of university education, as well as with the development of students' linguistic competence, taking into account their cognitive style caused by the individual profile of the functional asymmetry of the brain; it also proposes the methods of neuropsychological approach implementation in the educational

process.

The choice of this problem is attributed to the following fact: the Methodology of Foreign Language Teaching lacks knowledge on such individual characteristics of the individual as his profile of functional asymmetry of the brain and his cognitive style, which form the basis of the neuropsychological approach.

In our work neuropsychological approach implementation is considered as the allocation of cognitive styles and learning strategies that are specific to the activation of the left and right brain and, thus, the creation of neuropsychologically grounded learning programs and corresponding teaching materials organized in the manuals.

The research aim is to detect neuropsychological features of verbal information processing, to substantiate the neuro-psychological and methodological principles of teaching materials development, to draw cognitive styles and strategies of teaching, to create a system of neuro-linguistic exercises in mastering English for the left and right brain.

Research tasks: 1) to review home and foreign sources on the topic of the research; 2) to substantiate neuropsychological and methodological principles of the foreign language teaching materials developing; 3) to highlight cognitive styles and strategies for learning while activating the left brain; 4) to highlight cognitive styles and strategies for learning while activating the right brain; 5) to develop a system of exercises for mastering English, which activates, respectively, the work of the left and right brain.

Our hypothesis is as follows: neuro-psychologically grounded methods can form the basis of the English language successful learning, as they take into account such extremely important features of the individual as the profile of his inter-hemispheric asymmetry, which determines the specific cognitive style, and hence the type of mastering the foreign language.

Research methodology - observation, pedagogical experiment, statistical processing of data.

Literature review

Nowadays in domestic and foreign Language Pedagogy a lot of attention is paid to the problems of improving foreign language teaching tools in terms of the material structure and processing, as well as the process of its retention. The issues of the foreign language teaching psychology, the psychology of bilingualism, the neuropsychological approach, associated with the task of understanding the features and patterns of psychological human activity in the process of improving his knowledge of the foreign language take an important place.

Some studies (Верещагин, 1969; Деркач, 1993; Котик, 1986) deal with the problems of psychological mechanisms formation and functioning in the process

of the foreign language learning under bilingualism.

The problems of neuropsychology in teaching foreign languages are also studied:

- a) some studies (Якобсон, 1985; Корсакова & Миленьева, 1995) distinguish the differences in the cognitive strategies of the cerebral hemispheres, which determine the inter-hemispheric asymmetry, that is, the inequalities of the cerebral hemispheres;
- b) other studies (Котик, 1983; Котик, 1988; Хамская, 1996) determine the peculiarities of inter-hemispheric interaction during the information processing in general and in the process of mastering a foreign language, in particular.

A number of studies (Деркач, Коваленко, Ерохина, & Марченко 1999; Gerngross & Puchta, 1999) also investigate the problem of the possible implementation of the above-mentioned provisions in the educational process.

All studies aimed at the process of mastering a language can be divided into two groups: the research dealing with the analysis of the first language acquisition and the research dealing with the analysis of mastering the second one. However, there are no fundamental works dealing with the implementation of the neuropsychological approach to the process of the foreign languages learning. There are no comprehensive studies that would reveal the levels, stages, methods and ways of forming the foreign-language competence. Though some studies do provide some outlook of the neuropsychological approach to the process of foreign languages learning provisions implementation.

Thus, B. S. Kotik notes that the peculiarities of inter-hemispheric interaction in the processing of audio and speech information are important factors in determining the person's capacity to the foreign language mastering. The scientist distinguishes 2 types of mastering a foreign language: intuitive-sensitive (communicative) and rational-logical (non-communicative) associated with the different sign of the lateralization. Monolinguals with a high value of the right ear effect (left-sided) are more successful in the formal side of the language and experience communicative difficulties. Individuals with the leading left ear (right-sided) are good at listening, sociable, and succeed in learning a foreign language in an intuitively sensitive way (Котик, 1990, 126-134).

Based on the foregoing, we are able to draw conclusions about the nature of the differences between the cognitive styles of the left and right hemisphered bilinguals, which must be taken into account when organizing the process of foreign languages learning.

First of all, the left-hemisphered bilinguals are characterized by passive communication, while the right-hemisphered ones are characterized by emotional speech. The former experience difficulties with listening recognition caused by the high activity of the left hemisphere. In the latter case, the active right

hemisphere restrains the verbal activity of the left one and improves the understanding of the linguistic components.

In the process of memorizing the subjects with the dominance of the left hemisphere are guided by verbal symbols, whilst the process of memorizing for the subjects with the dominance of the right hemisphere is based on images.

In this regard, left-hemisphered learners will benefit from the methodology which establishes the connection between the sign system of the native language and the sign system of the foreign one. It will be more effective to use the intuitive approach, establishing the connection between the sign system of the foreign language and the nonverbal level of the subconscious, that is, from the image - to the word, for right-hemisphered learners.

Thus, it is possible to form the groups of students who are homogeneous according to their psychophysical features, which determine the foreign language learning strategies. Each of these groups may be offered techniques that are adequate to their cognitive style, memory peculiarities, and the type of the inter-hemispheric interaction.

Methodology

The neuropsychological approach, aimed at developing linguistic competence, should be reflected in doing various drills and exercises. Therefore, when developing the system of exercises in terms of the neuropsychological approach, we took into account the cognitive styles of those who are taught.

It is known that the linguistic competence is based on the following types of skills - grammatical, lexical, and verbal. All of them are inextricably linked, mutually conditioned and interdependent in the speech activity. The tightest relation exists between lexical and grammatical skills.

In this work, we pay attention to the problem of creating exercises focused on the formation of grammatical skills as the component of speech competence. Such a choice is attributed to the fact that it is the grammatical aspect which traditionally makes a difficulty when students study a foreign language, as in the process of assimilating new, strange for the learner's consciousness grammatical forms, the interference of previously developed skills of the native language is manifested most clearly.

When creating the system of exercises, we first of all took into account the peculiarities of information processing by the left and right brain.

Table 1 General characteristics of exercises

Exercises for the left hemisphere activation	Exercises for the right hemisphere activation
1. Based on the methodology that establishes the link from the verbal level of the native language to the verbal level of the foreign language.	1. Based on the methodology that establishes the connection between the verbal level of the foreign language with the nonverbal level of the subconscious (from image to word).
2. Memorizing is based on verbal symbols.	2. Memorizing is based on visual and ear-minded symbols.
3. Focused on solving logical linguistic problems.	3. Focused on developing deductive conceptual thinking.

Analysing the modern concepts of the psychological and methodological plan on the process of teaching English and the structure of teaching materials, we can outline the main provisions to base our developments on:

1. Taking into account the individual characteristics of students in terms of how they perceive and process verbal information.

In the developed tutorials the individualized approach is implemented with the help of variability of materials, techniques, and system of exercises which takes into account the peculiarities of cognitive activity of students of communicative and non-communicative types.

Teaching students of communicative type, we rely on the non-verbal component of their abilities, we offer figurative speech information, using pictures, photographs, activating mechanisms for involuntary memorization.

Students of non-communicative type study better when the linguistic material is presented in the systematic, generalized form, based on the keywords, abstracts, definitions, activating involuntary memorization.

2. Taking into account age characteristics of early adolescents.

Communication-oriented projects and exercises actualize the need of early adolescents in communication. Exercises instructions encourage discussions. The texts contain many units of linguistic and ethnographic character, which stimulate interest and motivation.

3. Communicative orientation.

The developed tutorials contain tasks that involve group- and pair-work in solving communicative tasks. Dialogue and polylogue forms of work prevail: interviews, discussions, role games, etc.

Research results

Based on the above-mentioned provisions, we developed teaching materials for the 1st year students of Translation Department (NTU “Dnipro Polytechnic”,

level - Intermediate) on the topics: “Dwellings”, “Life Events”, “Environmental Problems”.

We believe that the fundamental difference of our materials from the traditional ones is that all its parts constitute a system of differentiated exercises adapted to the peculiarities of students’ cognitive activity and the method of information processing (with regard to the dominating hemisphere).

Our materials have been tested during practical sessions in General English, NTU “Dnipro Polytechnic”, 1st year students, department of Translation. The experiment involved two groups of students - the control and the experimental ones - of 14 and 18 people, respectively.

The students of communicative and non-communicative types were identified according to Bryden's method.

Experimental group: differentiated tasks used here took into account the peculiarities of their cognitive activity.

Control group: the tasks did not take into account the peculiarities of students’ cognitive activity.

After mastering each topic, students of the control and experimental groups were given test tasks in order to control the skills formed. The average grades of the students of the control and experimental group were calculated. The results are as follows:

Table 2 Average grades on 100-grade system

Topic	Experimental group, average grades	Control group, average grades
1. Dwellings	82	68
2. Life Events	92	75
3. Environmental Problems	90	70
Average grades	88	71

With regard to the experimental study results, we can assert that taking into account the students’ individual characteristics in the way of verbal information perception and processing increases the productivity of mastering the language material.

Conclusion

Teaching materials should take into account the individual characteristics of students in terms of the way in which information is perceived and processed depending on the type of inter-hemispheric asymmetry of the brain, that is, to rely on the neuro-psychological approach to foreign language teaching.

This approach, in its turn, is based on the fact that the predominance of the functions of one of the cerebral hemispheres determines certain individual characteristics of the student in the method of perceiving and processing verbal information. In practice the approach is realized with the help of certain psychological, neuropsychological and methodological principles implementation.

Thus, the domination of the functions of the left hemisphere causes verbal-logical, abstract way of information processing, while figurative, concrete-objective way is stipulated by the dominant role of the right hemisphere.

The content of our teaching materials is characterized by the implementation of an individualized approach through the use of special techniques and tools which take into account the peculiarities of communicative and non-communicative students.

References

- Gerngross, G., & Puchta, H. (1999). *Creative grammar practice*. United Kingdom: Longman Group.
- Vysotskaya, T. (2016). Students-translators' professional competence development: theoretical outline. *Society. Integration. Education. Proceedings of the international Scientific Conference. Volume I*, 258-265.
- Верещагин, Е. М. (1969). *Психологическая и методическая характеристика билингвизма*. Москва: МГУ.
- Деркач, Л. М. (1993). *Психологія самоконтролю в процесі засвоєння іноземної мови*. Дніпропетровськ: ДДУ.
- Деркач, Л. М., Коваленко, Ю. В., Єрохіна, І. В., & Марченко, О. В. (1999). *Навчальний посібник з англійської мови для студентів географічних спеціальностей*. Дніпропетровськ: ДДУ.
- Корсакова, Н. К., & Мелентьева, Т. И. (1995). Нейропсихология в обучении иностранным языкам. *Вестник МГУ, Филология, № 4*, 17-25.
- Котик, Б. С. (1983). Межполушарное взаимодействие при осуществлении речи у билингвов. *Вопросы психологии, № 6*, 114-120.
- Котик, Б. С. (1986). Нейропсихологический анализ формирования билингвизма у взрослых. *Психология билингвизма*, 12-17.
- Котик, Б. С. (1988). Нейропсихологический анализ билингвизма. *Психологический журнал, т.9, №3*, 139-148.
- Котик, Б. С. (1990). Нейропсихологический подход: от упрощений к системно-динамическому обучению иностранному языку. *Вопросы психологии, № 3*, 125-134.
- Хамская, Е. Д. (1996). Нейропсихология индивидуальных различий. *Вестник МГУ, Сер. 14, Психология, №2*, 24 – 30.
- Якобсон, Р. (1985). Мозг и язык. *Избранные работы (270-286)*. Москва: Прогресс.