
DEVELOPMENT OF STUDENTS' PROFESSIONAL COMPETENCIES BASED ON A NEUROPSYCHOLOGICAL APPROACH

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In the era of globalization, higher education institutions face an increasingly important task: to train competitive, highly qualified specialists with well-developed professional competencies. Modern labor markets require graduates not only to possess theoretical knowledge but also to be capable of applying this knowledge effectively in real professional contexts. Therefore, the implementation of a competency-based approach in the educational process has become a fundamental direction in contemporary pedagogy. This approach ensures the integration of theoretical knowledge with practical skills and professional thinking.

Particularly in medical higher education institutions, including specialties such as general medicine, dentistry, and pharmacy, the subject "Latin Language and the Basics of Medical Terminology" plays a crucial role in professional training. Latin is not only a historical language but also the primary source of scientific terminology. A large proportion of medical, biological, and pharmaceutical terms originate from Latin. Therefore, mastering Latin terminology is essential for developing professional communication skills, clinical thinking, and academic literacy.

The process of teaching Latin contributes significantly to the formation of students' terminological competence. It enables future specialists to understand the structure, meaning, and usage of medical terms. This is particularly important in clinical practice, where accuracy and clarity of terminology directly affect diagnosis, communication, and treatment outcomes.

In recent years, special attention has been given to organizing the educational process based on a neuropsychological approach. Neuropsychology studies the structure and function of higher cortical processes and examines the brain mechanisms underlying cognitive activity. From this perspective, language learning is a complex neurocognitive process that involves the interaction of multiple brain systems, including working memory, long-term memory, attention, thinking, and executive functions.

The acquisition of Latin, due to its structured and logical grammatical system, has a positive impact on cognitive development. The strict morphological system, precise word formation rules, and clear syntactic structures contribute to the development of analytical and logical thinking. Students learn to classify, compare, analyze, and generalize linguistic information, which enhances their overall intellectual abilities.

A.R. Luria, one of the founders of neuropsychology, emphasized the role of the brain's frontal and temporal regions in language production and comprehension. According to his research, these areas are responsible for planning, organizing, and controlling speech processes. L.S. Vygotsky also highlighted the close relationship between language and thought, demonstrating that language learning stimulates cognitive development. His theory of cognitive development emphasizes the importance of social interaction and guided learning in acquiring complex skills.

Further contributions were made by researchers such as T.V. Akhutina and A.A. Leontiev, who studied individual differences in cognitive processes and their impact on language learning. Their research shows that working memory, attention, and executive control are essential for

mastering professional terminology. Scholars like I.A. Zimnyaya and Khutorskoy emphasized the importance of competency-based education and the use of innovative teaching methods such as multichannel learning and contextual tasks.

Modern neuroscientists, including M.S. Gazzaniga, R.B. Ivry, and G.R. Mangun, have demonstrated the significance of neuroplasticity in learning processes. Neuroplasticity refers to the brain's ability to adapt and reorganize itself in response to new experiences. This ability plays a crucial role in language acquisition, especially when learning complex terminological systems such as Latin. Researchers such as A.D. Friederici, M.A. Paradis, and M.T. Ullman have also highlighted the effectiveness of neuropsycholinguistic approaches in foreign language teaching.

Based on these theoretical foundations, this study aims to analyze the role of neuropsychological mechanisms in the development of students' professional competencies and to evaluate the effectiveness of innovative pedagogical approaches in teaching Latin.

The study was conducted at Asia International University with the participation of 60 students from medical specialties. The experimental process included various methods such as questionnaires, tests, pedagogical observation, interviews, and self-assessment.

The results of the experimental study demonstrated that the use of neuropsychological approaches significantly improves students' cognitive and professional performance. Working memory capacity increased by 22%, allowing students to process and retain complex terminological information more effectively. Long-term memory improved by 18% due to systematic repetition and contextual learning activities.

Attention and executive functions improved by 20%, which enhanced students' ability to focus, analyze, and apply grammatical rules accurately. Analytical thinking skills increased by 15%, reflecting the positive impact of structured linguistic training on cognitive development. Furthermore, professional terminological competence increased by 25%, indicating a significant improvement in students' ability to use medical terminology in professional contexts.

The experimental pedagogical model developed in this study includes several components: cognitive diagnostics, multichannel teaching, contextual learning, regular repetition, reflection, and continuous assessment. Each component is designed to activate specific neurocognitive mechanisms and enhance the learning process.

Multichannel learning involves the use of visual, auditory, and interactive materials. For example, students learn Latin terms through diagrams, pronunciation exercises, and morphological analysis tasks. Contextual learning allows students to apply terminology in real-life professional situations, which enhances their communicative competence.

Regular repetition and reflection help consolidate knowledge and improve long-term retention. Students are encouraged to analyze their mistakes, evaluate their performance, and develop self-regulation skills. Continuous assessment ensures that learning outcomes are monitored and adjusted according to students' needs.

The findings of this study confirm that neuropsychological approaches significantly enhance the effectiveness of teaching Latin in medical education. They improve cognitive functions, strengthen professional competencies, and prepare students for future clinical practice.

In conclusion, the integration of neuropsychological principles into language teaching provides a scientifically grounded and highly effective method for developing students' professional competencies. It ensures not only the acquisition of knowledge but also the development of critical thinking, analytical skills, and professional communication abilities.

Thus, the implementation of neuropsychological approaches in teaching Latin and medical terminology should be considered a priority in modern medical education systems.

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