THE DEVELOPMENT OF STUDENTS' COGNITIVE THINKING IN MEDICAL EDUCATION VIA SNAPPS TECHNOLOGIES

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Abstract: *This article highlights the specific aspects of developing students' cognitive thinking in the medical education system. The study analyzes modern pedagogical approaches to developing this mindset in medical education, including the SNAPPS model, problem-based learning, clinical scenario-based learning, integrated learning, and reflective approaches. The effectiveness of teaching methodologies aimed at increasing students' independent thinking, analytical approach, and clinical decision-making capacity is substantiated through practical examples.*

Keywords: *cognitive thinking, medical education, SNAPPS model, problem-based learning, clinical reasoning, analytical approach, pedagogical technologies.*

The modern medical education system requires not only the provision of knowledge, but also the formation of a student as an independent thinker, analytically approaching clinical problems, able to ask questions and make decisions. Especially in clinical disciplines - internal medicine, surgery, pediatrics, the development of students' cognitive thinking is the foundation of the medical profession. Therefore, the analysis of the concept of cognitive thinking, the stages of its formation, development factors and the features of its application in medical education constitute the main theoretical foundation of this study.

Cognitive pedagogical approaches began to take shape in the middle of the 20th century, based on the interaction of psychological knowledge and cognitive activity in the educational process. According to J. Piaget, one of the founders of the theory of cognitivism, a person perceives knowledge through a complex system of gradual mental development. Vygotsky, on the other hand, proves that the social environment, language, and interaction play an important role in cognitive development.

Based on these theories, in order to activate the cognitive activity of the student, interaction, problem situations, analytical thinking and reflection should take a central place in the educational process. Through such approaches, knowledge is acquired not by memorization, but through analysis, generalization, synthesis and evaluation.

Cognitive thinking (from the Latin "cognitio" - knowledge, understanding) includes the processes of a person's perception, processing, storage and application of knowledge. This concept is widely studied in psychology and pedagogy and is considered a key factor in understanding human mental activity. Through cognitive thinking, a person acquires the ability to solve problems, make decisions and acquire new knowledge.

There are several theories of cognitive thinking, among which the following stand out:

- Piaget's Theory: Jean Piaget divided human mental development into stages and described the specific characteristics of cognitive thinking at each stage.
- Vygotsky's Theory: Lev Vygotsky emphasized the importance of social environment and culture in cognitive development and introduced the concept of the "zone of proximal development."
- Bloom's Taxonomy: Benjamin Bloom divided educational objectives into cognitive, affective, and psychomotor domains, dividing the cognitive domain into levels such as knowledge, understanding, application, analysis, synthesis, and evaluation.

The medical field is a complex and ever-changing field of knowledge. Physicians must possess a high level of cognitive thinking to analyze patients' conditions, make accurate diagnoses, and devise effective treatment plans. This requires the development of students' cognitive thinking during medical education.

SNAPPS technology, which stands for Student- Centered Active Learning Environment with Upside-Down Pedagogies, is widely used in medical education processes and focuses on developing students' independent thinking. With this technology, the teacher plays the role of a guide rather than a mere informant during the lesson. SNAPPS allows students to independently learn the subject and deepen their knowledge, while the teacher guides and supports them in the right direction cognitive thinking through SNAPPS technology , students:

- Increases problem-solving skills: Will be able to make independent and effective decisions in various clinical situations.
- Develops critical thinking: Develops skills in analyzing, evaluating, and drawing reasonable conclusions from information obtained.
- Increases self-learning ability: Students will gain the ability to independently master new knowledge and apply it in practice.

An interactive and thought-provoking learning environment is essential for developing cognitive thinking. Teacher support, open communication, and opportunities for sharing ideas encourage students to actively learn.

The richness of the curriculum with problem situations, clinical cases and practical exercises helps to develop students' cognitive thinking. Along with theoretical knowledge, the formation of practical skills, analysis based on real clinical cases and independent decision-making educate students as active thinkers. In particular, through activities such as case assignments, patient histories, symptom analysis, and diagnostic decision-making during practical exercises, the student's level of thinking gradually develops.

In this process, students:

- analyzes clinical information;
- makes tentative diagnoses;
- expresses differing opinions on problematic situations;
- identifies gaps in knowledge by asking questions;
- attempts to justify the most appropriate diagnosis and treatment plan.

Thus, it is an indispensable requirement of modern medical education that curricula be

focused not only on imparting knowledge, but also on forming cognitive activity, and be methodologically enriched with technologies such as SNAPPS, PBL, CBL, TBL.

The development of cognitive thinking in medical education, especially in the teaching of internal medicine, ensures the success of the student in his future professional activities. The formation of such thinking, unlike traditional lessons, is carried out through modern interactive methods, training based on problem situations, and methodological approaches such as the SNAPPS model. This not only deepens knowledge, but also strengthens the ability to make clinical decisions, which is one of the most important professional competencies of a doctor.

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