

## A DIDACTIC SYSTEM FOR DEVELOPING METACOGNITIVE SKILLS THROUGH PLAY-BASED ACTIVITY.

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**Abstract.** *This article theoretically examines a didactic system for developing metacognitive skills in preschool children through play-based activity. The study explores the content and structural components of metacognitive skills, as well as the pedagogical opportunities for their development. Particular attention is paid to the role of play-based activity in developing children's abilities to plan, monitor, regulate their actions, solve problematic situations, and evaluate the outcomes of their activities. The effectiveness of didactic games, problem-based situations, reflective questions, and pedagogical scaffolding as tools for promoting metacognitive development is substantiated.*

**Keywords:** *metacognition, metacognitive skills, play-based activity, didactic system, preschool education, planning, monitoring, reflection, self-regulation, pedagogical scaffolding.*

**Аннотация.** В статье теоретически рассматривается дидактическая система развития метакогнитивных навыков у детей дошкольного возраста на основе игровой деятельности. Раскрываются содержание, структурные компоненты метакогнитивных навыков и педагогические возможности их формирования. Особое внимание уделяется роли игровой деятельности в развитии у детей навыков планирования, мониторинга, самоконтроля, решения проблемных ситуаций и оценки результатов собственной деятельности. Обосновывается эффективность использования дидактических игр, проблемных

*ситуаций, рефлексивных вопросов и педагогической поддержки как средств метакогнитивного развития.*

**Ключевые слова:** *метакогниция, метакогнитивные навыки, игровая деятельность, дидактическая система, дошкольное образование, планирование, мониторинг, рефлексия, самоконтроль, педагогическая поддержка.*

**Annotatsiya.** *Mazkur maqolada maktabgacha yoshdagi bolalarda o'yin faoliyati asosida metakognitiv ko'nikmalarni rivojlantirishning didaktik tizimi nazariy jihatdan tahlil qilinadi. Metakognitiv ko'nikmalarning mazmuni, tarkibiy komponentlari hamda ularni shakllantirishning pedagogik imkoniyatlari yoritiladi. O'yin faoliyatining bolaning rejalashtirish, monitoring qilish, o'z faoliyatini nazorat qilish, muammoli vaziyatlarni hal etish va natijalarni baholash ko'nikmalarini rivojlantirishdagi o'rni ochib beriladi*

**Kalit so'zlar:** *metakognitsiya, metakognitiv ko'nikmalar, o'yin faoliyati, didaktik tizim, maktabgacha ta'lim, rejalashtirish, monitoring, refleksiya, o'z-o'zini nazorat qilish, pedagogik qo'llab-quvvatlash.*

Contemporary trends in educational development increasingly define the formation of metacognitive competencies as a priority pedagogical objective, emphasizing not merely the acquisition of subject-specific knowledge, but also the ability of individuals to regulate their cognitive activity on a reflective basis, consciously select learning strategies, evaluate their effectiveness, and improve their existing experience. From this perspective, the development of metacognitive skills is recognized as one of the strategic objectives of the preschool education system. The preschool period represents a crucial ontogenetic stage during which the initial elements of children's cognitive processes,

reflective thinking, independent decision-making, and activity planning are formed. Therefore, scientifically substantiating a didactic system that promotes metacognitive development at this developmental stage is an important scientific problem for both pedagogical theory and educational practice.

Metacognitive development cannot be effectively achieved through random or episodic pedagogical influences; rather, it requires an integrated didactic system encompassing interconnected components such as goals, content, methods, tools, organizational forms, assessment, and reflection. Therefore, the development of a didactic system for fostering metacognitive skills in preschool education is considered one of the priority areas of contemporary pedagogical research and one of the pressing needs of educational practice.

In the pedagogical literature, the concept of a didactic system is recognized as one of the important methodological categories for organizing the educational process on a scientific basis. This concept refers to an integrated pedagogical system that reflects the interrelationship among educational objectives, content, methods, instructional tools, organizational forms, subjects, and outcomes. The principal function of a didactic system is to direct all components of the educational process toward a common goal and ensure their coordinated functioning.

The development of didactic system theory is primarily associated with the name of Jan Amos Comenius. He substantiated the necessity of organizing education according to the principle of conformity with nature and emphasized the relationship among educational objectives, content, methods, and sequence. According to Comenius, the natural development of the learner and the logical consistency of the educational process

should occupy a central position within the didactic system. His ideas subsequently provided a methodological foundation for interpreting the didactic system as an integrated pedagogical phenomenon.

The German pedagogue Johann Friedrich Herbart enriched the concept of the didactic system through his theory of educative instruction. According to Herbart, the educational process should serve not only the transmission of knowledge but also the development of the learner's moral qualities. He proposed organizing instruction according to clearly defined stages and thereby substantiated the internal logical structure of the didactic system.

From the second half of the twentieth century onward, the concept of the didactic system was further developed within a systems approach. Yuriy K. Babansky characterized the educational process as an integrated pedagogical system and emphasized that its effectiveness depends on the coherence of all its components. According to Babansky, the effectiveness of a didactic system depends on the consistency among educational objectives, content, methods, instructional tools, and outcomes.

Vladimir P. Bespalko interpreted the didactic system in close connection with pedagogical technology. He viewed the didactic system as a pre-designed pedagogical model intended to ensure the achievement of predetermined and measurable outcomes. According to Bespalko, the components of a didactic system include objectives, educational information, pedagogical communication, instructional tools, and mechanisms for diagnosing learning outcomes.

In contemporary pedagogical research, the didactic system is increasingly interpreted through competency-based, learner-centered, activity-based, and reflective approaches. Within these approaches, the

learner is viewed not as a passive recipient of knowledge, but as an active subject who plans, monitors, evaluates, and improves their own cognitive activity. Consequently, metacognitive strategies, reflection, self-monitoring, and self-assessment are increasingly incorporated into the structure of the didactic system.

In the context of preschool education, a didactic system is designed with consideration of children's age-related and individual developmental characteristics. The primary purpose of such a system is to support children's interest in learning, develop independent thinking, foster problem-solving skills, and cultivate metacognitive abilities related to understanding and regulating their own cognitive activity. Thus, a didactic system aimed at developing metacognitive skills in preschool education can be viewed as an integrated pedagogical model that ensures the coherence of educational objectives, content, methods, instructional tools, pedagogical conditions, and assessment mechanisms.

An analysis of the pedagogical literature makes it possible to characterize the didactic system as a complex pedagogical structure that integrates all components of the educational process around a common objective, ensures their functional interrelationship, and contributes to the comprehensive development of the individual. In the context of competency-based education, the content of this system is being enriched with new components aimed at developing metacognitive competencies. This further increases the relevance of developing and scientifically substantiating a didactic system for fostering metacognitive skills in preschool education.

#### **The Purpose and Functions of the Didactic System.**

The principal pedagogical purpose of the didactic system aimed at metacognitive development is to form initial metacognitive skills in

preschool children that enable them to understand, regulate, monitor, and evaluate their own cognitive activity.

The objectives of the didactic system aimed at metacognitive development constitute a set of functionally interconnected directions designed to achieve its principal goal. These objectives focus on diagnosing, developing, regulating, and supporting the prospective educational development of preschool children's cognitive activity.

The main objectives of the didactic system include ensuring an integrated pedagogical process aimed at diagnosing, developing, and regulating children's cognitive activity. The diagnostic function is directed toward identifying the level of children's metacognitive development, whereas the motivational function focuses on developing intrinsic interest in learning and the need for independent inquiry. The content-related function involves enriching educational content with elements of metacognitive activity, cognitive strategies, and reflective tasks, while the developmental function contributes to the improvement of thinking, reflection, and independent reasoning.

In addition, the educational function of the didactic system aims to develop children's independence, responsibility, and conscious attitude toward their own activities. Its corrective function focuses on identifying and overcoming difficulties in metacognitive activity, whereas its prognostic function involves determining children's prospective developmental directions and designing individualized developmental trajectories.

The goals and objectives of the didactic system for developing metacognitive skills through play-based activity are closely interconnected with the systemic characteristics that determine its internal structure and mechanisms of functioning. In this regard, the

didactic system is characterized by such fundamental properties as integrity, structural organization, functionality, adaptability, and developmental capacity.

These characteristics determine the system's goal orientation, the interrelationship among its components, and its effectiveness within the pedagogical process.

The integrity of the didactic system is characterized by the orientation of its objectives, content, methods, instructional tools, play-based technologies, and diagnostic criteria toward a unified pedagogical goal—the development of metacognitive skills in preschool children.

Structural organization reflects the interrelationship among the target, content-related, procedural, assessment, and outcome components of the system. Hierarchical organization reflects the gradual development of metacognitive abilities, beginning with elementary processes of self-awareness and progressing toward planning, monitoring, evaluation, and reflective activity.

Functionality is manifested in the system's ability to perform diagnostic, developmental, motivational, educational, and corrective functions. Dynamism ensures the continuous improvement of the content and forms of play-based activity in accordance with children's developmental levels.

Adaptability refers to the capacity of the didactic system to change in accordance with children's age-related, individual, and psychological characteristics. The capacity for self-development is manifested through children's independent activity during play, their ability to recognize errors, and their acquisition of new activity strategies.

Reflective regulation, as an important characteristic of the system, contributes to the development of children's ability to understand and evaluate their own activities, thinking processes, and achieved outcomes.

These characteristics of the didactic system aimed at developing metacognitive skills through play-based activity ensure the interconnectedness and functional integrity of its components. They distinguish the didactic system fundamentally from a simple collection of individual methods or pedagogical interventions. Within the system, each component functions in a functional relationship with the other components, and a change in one component may directly influence the effectiveness of the entire pedagogical process.

From this perspective, the didactic system designed to develop metacognitive skills in preschool education should not be interpreted as a collection of separate lessons, methods, or tasks. Rather, it should be understood as an integrated, dynamic, and developmental pedagogical mechanism aimed at consciously organizing, regulating, and reflectively evaluating children's cognitive activity.

#### Strategic Directions of the Didactic System.

The content of the didactic system aimed at developing metacognitive skills through play-based activity is implemented through the following strategic directions focused on the gradual development of children's cognitive activity:

- developing children's ability to understand their own thinking processes and cognitive actions during play;
- developing the ability to consciously select and apply cognitive methods and strategies when solving play-based situations;
- teaching children to plan play activities purposefully, determine the sequence of actions, and anticipate possible outcomes;

- developing the ability to monitor and regulate one's own activity during play and to modify strategies when necessary;
- developing the ability to identify difficulties and errors that arise during activities, understand their causes, and independently correct them;
- developing children's ability to analyze the results of completed activities, evaluate their own capabilities, and engage in reflective thinking;
- establishing the foundations of independent cognitive activity necessary for children's subsequent educational development.

The systematic implementation of these strategic directions is ensured through the structural components of the didactic system. These components are functionally interconnected and determine the purposeful orientation, content integrity, and pedagogical effectiveness of the process of developing metacognitive skills through play-based activity.

From the perspective of a systems approach, the didactic system for developing metacognitive skills through play-based activity consists of interrelated structural components that functionally complement one another. These components determine the internal structure of the system and ensure its purposeful orientation, content coherence, and pedagogical effectiveness.

In conclusion, play-based activity is an effective means of developing metacognitive skills in preschool children. Through play, children develop skills in planning, monitoring, problem-solving, regulating their own activities, and evaluating outcomes. A didactic system based on metacognitive questions, problem-based situations, and pedagogical scaffolding contributes to the development of children's independent thinking and their ability to consciously regulate their own activities.

Therefore, organizing play-based activity according to a metacognitive approach should be considered one of the important pedagogical conditions for improving the quality of preschool education.

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