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# FORMATION OF SIZE CONCEPTS IN CHILDREN OF ELDERLY PRESCHOOL AGE

The modern education system of Ukraine operates in the conditions of reform, updating the content of preschool education and implementing the competency-based approach declared in the leading regulatory documents – the Law of Ukraine "On Education" and the Concept of the New Ukrainian School. The aforementioned documents emphasize the need to form key competencies, in particular mathematical, at the stage of preschool childhood. One of the important components of mathematical competence is the formation of ideas about quantity, which include the assimilation of the categories of length, height, width, mass and volume.

Despite the normative definition of the significance of the mathematical development of preschoolers, the problem of the holistic formation of ideas about quantity as a component of logical-mathematical competence, although it has been the subject of study by many researchers, requires further theoretical understanding and methodological clarification in the context of modern teaching aids. That is why addressing the above problem is timely and justified in view of the needs of modern practice of preschool education and preparation of children for schooling.

The problem of the formation of mathematical ideas in preschool children has repeatedly become the subject of scientific research. In particular, the development of logical-mathematical skills and the use of game technologies were highlighted by such Ukrainian scientists as L. Pyatovska (features of the formation of elementary mathematical ideas), S. A. Bakay and O. V. Rudnik (logical games as a means of learning), A. O. Obrizanova (use of sensory experience). L. Zaitseva and N. Baglaeva, who focused on the importance of practical actions with objects, also dealt with the issues of the methodology of introducing children to quantities. Their works substantiate the importance of logical games, an integrated approach and sensory development for the formation of mathematical competence of older preschoolers [1; 2; 3].

Foreign researchers, in particular J. Piaget, focused on the cognitive mechanisms of learning quantitative relationships; M. Montessori substantiated the role of sensory education in the perception of the parameters of objects; and J. Bruner investigated the role of the child's active research activity in the process of cognition. At the same time, the issue of the structural organization of the process of forming ideas about quantity using specific didactic means in children of senior preschool age requires additional systematization.

The purpose of the article is to theoretically substantiate the process of forming ideas about quantity in senior preschoolers and determine its structural elements

through the involvement of children in game, cognitive-research and practical activities using didactic games, sensory exercises and methods of comparison and measurement.

The development of spatial-logical and mathematical thinking in preschool age largely depends on the conditions of social interaction and the organization of educational activities. It is through communication with peers and teachers that children are able to comprehend mathematical concepts and form logical conclusions. An integrated approach to learning, which combines mathematical, social and other educational areas, allows for the most effective acquisition of knowledge and promotes the development of a child's personal competencies [1]. As S. A. Bakay and O. V. Rudnik note in their work, the use of logic games is a powerful tool for the formation of mathematical competence in older preschoolers, because the game stimulates analysis, generalization and application of logical principles, promotes the development of comparison, measurement and spatial analysis skills [2]. Sensory and logical games that include practical actions contribute to the formation of ideas about quantity and stimulate the perception of various textures and shapes [3]. As noted by scientist A. O. Obrizanova, the integration of sensory experience with pedagogical techniques allows not only to consolidate knowledge, but also to form the ability to apply it in practical situations [3].

The essence of ideas about quantity lies in the assimilation of the main categories – length, height, width, mass and volume. The formation of these components is ensured by the purposeful organization of activity, where the formation of ideas about quantity is carried out in the game, cognitive-research and practical activities of children using didactic games, sensory exercises, methods of comparison and elementary measurement.

An important factor is the partnership interaction of the preschool educational institution and the family. According to the provisions of the Concept of the New Ukrainian School, partnership pedagogy is based on cooperation and mutual interest of teachers and parents in the development of the child [4]. The normative basis for such cooperation is the Law of Ukraine "On Education", which emphasizes the rights and obligations of parents as participants in the educational process [5].

The criteria for the formation of ideas about quantity are the level of understanding of different types of quantities, the child's ability to establish relationships between objects in length, height, width, mass and volume, as well as the ability to apply the acquired knowledge in practical situations. The indicators are the formation of skills of comparison, measurement and spatial analysis. The combination of intellectual comprehension and practical experience creates a holistic system for the formation of ideas about quantity as a component of logical-mathematical competence.

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