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Research Article

PREPARING FUTURE TEACHERS TO MANAGE THE MATHEMATICAL DEVELOPMENT OF PRESCHOOLERS

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ABSTRACT

The profession of a teacher of preschool education, along with changes in environmental conditions, the needs of society, global digitalization and informatization, requires global changes in the content of professional work, and the requirements for the profession of a teacher in managing the mathematical development of preschoolers are also changing. The profession of a preschool teacher requires a serious transformation.

KEYWORDS

Mathematical education, pedagogical diagnostics, stages of training future teachers to manage the mathematical development of preschoolers.

INTRODUCTION

In the modern education system, mechanisms for continuous improvement of educational and cognitive activities for the development of intellectual abilities and moral views are being introduced. Systematic work is being carried out to train highly qualified personnel who are able to bring the content of education to a qualitatively new level, who are able to find their place in the labor market for the sustainable development of the social sphere and economic sectors.

In recent years, regulatory frameworks have been created around the world to improve the quality and widespread implementation of scientific research carried out in the field of education, attract talented young people to research in the field of informatization and digitalization, and ensure the solid integration of education, science and production. This expands the pedagogical possibilities of students' professional competencies in the field of mathematical

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development of preschoolers in the development of educational and cognitive activities.

The role of a teacher in the development of cognitive interest in preschool children is certainly great, because it is the teacher who is one of the key figures in the educational process. A positive result of activity, i.e. the presence of high cognitive interest among pupils, largely depends on the system of actions and interactions of the teacher with each child, as well as on his personality itself - creative potential, ability to self-development, professional competence.

A teacher who has set himself the goal of getting children interested in the search for "mathematical discoveries" should strive to become an innovator, find his own approach that meets his personal qualities and the characteristics of the contingent of children. Therefore, along with the traditional question "What to teach?" the teacher should understand "How to teach?" or, more precisely, "How to teach in such a way as to initiate children's own questions: "What do I need to learn?" and "How do I learn this?".

Many scientists were engaged in the formation of elementary mathematical representations both in our country (G.E. Dzhanpeisova, N. Bikbaeva, N. Jalilova, Sh. Sadikov and others) and abroad (A. Kolmogorov, A. Stolyar, Leushina, V. Petrova, J.Piaget, M. Montessori, J.A. Wenger, R. Green, G. Weil, F. Gauss, R. Descartes, Kim Yong Song, Yi Soo Hyun, Kwon Yong Yi, Park Yong Chun, Benjamin Bloom, Fraser D.L., Tan A., Woods B. and many others). Despite this, the issue of the formation of mathematical representations remains very relevant. Although admission to the first grade of school does not involve any kind of exam or knowledge test, nevertheless, admission to school requires certain skills and intellectual preparation from the child. The formation of primary mathematical representations is a powerful means of intellectual development of a preschool child, his cognitive and creative abilities. Today, the whole world has crossed the threshold and entered a new digital and information age. Without the purposeful development of mathematical thinking, which is one of the most important components of the cognitive activity process, it is impossible to achieve effective results in learning, systematization of knowledge, skills and abilities.

Currently, the problem of forming mathematical representations in children has a scientifically based methodological system. Their main elements are the purpose, content, methods, forms and ways of organizing work. Among them, the main goal is focused on the formation of imagination.[5]

The domestic system of preschool education requires new solutions in theory and at the level of practical activity. A significant part of these decisions is related to the activities of one of the subjects of the educational process in preschool education – these are teachers of preschool education.

Mathematical development of preschoolers.

Mathematical development plays a huge role in the mental education and development of a child's intelligence. Mathematics is a fascinating and interesting subject, but if you do not form elementary mathematical concepts, do not lay the foundation for mathematical development, then mathematics will become one of the most difficult subjects in a student's life. Mathematics is an amazing subject, it contributes to the comprehensive development of the child, develops memory, speech, imagination, logical thinking. And the teacher plays a huge role in creating

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the foundation. The competence of a preschool teacher is not just in the transfer of mathematical knowledge, skills and abilities, but in introducing children to the world of mathematics, developing children's interest in mathematics already at preschool age. To teach children to think, analyze, observe general patterns, not to be afraid of difficulties, but to overcome them and at the same time learn joy. This suggests that the teacher reveals not only the intellectual, but also the emotional sphere of the child.

Preschool children often show independent interest in mathematical categories such as counting, shape, time, and magnitude. Therefore, there is a need to train future preschool education specialists who understand the importance of children's mathematical development. But it is not enough just to understand the importance of this area of development, it is necessary to possess competencies in readiness for the mathematical development of preschoolers, and this can be facilitated by pedagogical diagnostics during the preparation of students of preschool faculties, systematization of knowledge in this area of development, requirements for the analysis and updating of the content of programs for the cognitive development of preschoolers.

Margolin argues that the purpose of teaching mathematics to a child is to enjoy the mathematical process, a positive attitude to mathematics, learning the order of operations with numbers, measurements, ratios, additions, subtractions, multiplication and division, to recognize the classification of objects and the classification of sets. [6]

Payne argues that the purpose of teaching mathematics in early childhood is to help a child understand the order and significance of events and situations in his daily activities. [7] In this regard, there is increasing interest in improving the effectiveness of methods of teaching mathematics in preschool organizations, as the first stage of continuing education.

The functions of mathematical education.

Speaking about the methods of teaching mathematics, it is important to understand the main functions of mathematical education: adaptive, cultural, developmental and predictive. These functions are interconnected and interact with each other.

1) The adaptive function is conditioned by the changes taking place in modern society - informatization and technologization - and is associated with the adaptation of a person to the new requirements of life in a dynamically changing society. It is important to teach children to adapt to mathematics as an interesting world of numbers and technology, and to be able to operate with mathematical concepts.

2) The cultural function is to convey moral values to children through thematic education, which provide opportunities for personal growth and self-realization. This function is aimed at developing the foundations of mathematical culture.

3) The developmental function ensures the formation of the child's personality, reveals his individual characteristics. The implementation of this function will allow, in the process of studying mathematics, to form in children the qualities of thinking necessary for the full functioning of a person in modern society, for the dynamic adaptation of a person to this society.

4) The prognostic function is due to the inclusion of the child in the process of discovering facts, analysis, the

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ability to detect unresolved problems, put forward hypotheses, breadth and flexibility of thinking, the ability to see an alternative solution to problems. All these functions are interrelated and speak about the multidimensional and integrity of the mathematics learning process.

The stages of readiness of future teachers to manage the mathematical development of preschoolers.

Let's consider the stages of preparing future teachers to manage the mathematical development of preschoolers.

Pedagogical diagnostics of readiness to manage the mathematical development of preschoolers, which, as a rule, is carried out after the end of the course, we propose to conduct at the initial stage in order to determine the readiness and personal attitude of future teachers to teach mathematics to preschool children. During the research experiment, factors such as a negative attitude towards mathematics as a science, lack of confidence in their mathematical knowledge, psychological unpreparedness for teaching mathematics to children, even such as childhood traumas in mathematics classes, were identified. Depending on the result of the diagnosis, a motivational component is being built, which will be aimed at target attitudes and value orientations, at understanding the importance of mathematical education in preschool age, which will create the necessary foundation for logical and critical thinking, and a productive component aimed at the practical "readiness" of the future teacher for the mathematical development of preschoolers and creating confidence in mathematical knowledge a future teacher.

The content component will include, first of all, psychological, pedagogical and general subject knowledge, as well as general cultural and private methodological knowledge.

The productive component represents not only the activities of future teachers, but also the ability to create a ready-made "product" based on planning, organization and control. It can be a didactic manual, a game, as well as a developed method for teaching mathematics to preschool children.

In the process of such educational activities and pedagogical practice, students purposefully form an attitude towards mastering the management of a child's mathematical development. We consider all the components in unity and in interconnection, because we believe that the ways students work are largely determined by the quality and volume of acquired knowledge.

What competencies are necessary for future teachers to carry out all stages of training future teachers to manage the mathematical development of preschoolers. Here we can include such pedagogical competencies as analytical, design, constructive, organizational, communicative, competencies aimed at monitoring, analyzing and evaluating the results obtained. In addition to pedagogical competencies, it is important for future preschool teachers to develop the ability to diagnose the level of mathematical development of children, select the content of education and methods of influencing the mathematical development of a child, taking into account his age and individual characteristics, exercise self-control and self-correction of their activities in the management process, the ability to create their own

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creative ways of managing the mathematical development of preschoolers.

The characteristics of the functioning of the system of mathematical development of preschoolers in modern conditions allowed us to identify the specifics of training future educators to manage the mathematical development of preschool children. A future teacher should be aware of his/her governing function in the mathematical development of a child: to show a research approach to the child and to his/her own pedagogical activity aimed at finding optimal ways to manage the mathematical development of preschoolers.

To do this, a future teacher must have deep psychological and pedagogical subject and methodological knowledge, the ability to overcome pedagogical stereotypes, combine professional competence with a humanistic personal position.

The readiness of future preschool teachers to manage the mathematical development of preschoolers is an integral model, in the structure of which diagnostics of readiness for the mathematical development of preschoolers is brought to the fore.

Improving the readiness of a future teacher to manage the mathematical development of a child involves a gradual transition from the accumulation, rethinking of theoretical knowledge to the development of elements of the author's methodology.

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