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A METHODOLOGY FOR FORMING CHILDREN'S SCIENTIFIC WORLDVIEW BASED ON EMPIRICAL EXPERIENCES FROM THE PRESCHOOL EDUCATIONAL PROCESS.

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Abstract
The paper presents a methodology for shaping preschool children's scientific worldview through empirical experiments. It proposes integrating observation, hands-on experimentation, comparison, and drawing conclusions into everyday learning activities. Pedagogical conditions, assessment criteria, and practical recommendations are substantiated with applied examples suitable for preschool settings.

Keywords: Empirical experiment; observation; preschool education; scientific worldview; inquiry-based activity; questioning; assessment criteria.

Preschool age is the stage when the child's desire to understand existence through the questions "why?" and "how?" is most actively manifested. It is during this period that the initial foundations of a scientific worldview begin to form - the ability to see cause-and-effect relationships, observe a phenomenon, express an opinion based on evidence, put forward a simple assumption (hypothesis) and verify it. Therefore, in preschool education practice, a methodological approach is important that directs the child not to memorize ready-made information, but to draw conclusions based on the results he has observed and tested. "Experience" is at the heart of the formation of a scientific worldview, because experience

connects the child's sensory perception (seeing, touching, comparing) with the thinking process. However, experience does not have an educational effect in itself: it serves a scientific worldview only when it is built as a whole methodology with pedagogical goals, safety standards, question-oriented communication, mechanisms for recording and evaluating the result. Dewey emphasized that in experiential education, knowledge is "inseparable from practical action" and shows the need for the child to be an active participant in the educational process. This idea is methodologically compatible with the introduction of the child into the role of an observer-researcher, not leaving empirical experiments at the level of "demonstrative spectacle" in preschool education.

To substantiate the methodology for forming a scientific worldview in children based on empirical experiments in the process of preschool education and to develop practical recommendations.

1) To classify the types of empirical experiments that serve to form a scientific worldview based on methodological criteria.

2) To determine the pedagogical conditions of experiential education.

3) To propose a step-by-step methodological model that forms a chain of observation-experiment-conclusion.

4) To develop criteria for evaluating the result.

Main part

The scientific worldview is manifested not in the form of a "system of scientific concepts" in preschool age, but in the form of elements of scientific thinking: the child's reliance on evidence, substantiating his opinion, and the ability to distinguish a significant sign from a random sign. Vygotsky, revealing the role of cooperation and directed communication with adults in the development of a child's cognition, explains the condition for moving to more complex thinking

processes through the idea of the "zone of proximal development". Empirical experience in preschool education is a tool that "uses" this zone: the teacher encourages the child's independent observation, but in the process of drawing conclusions, provides guiding assistance in asking questions, comparing, and generalizing.

Piaget shows that in cognitive development, the child builds new schemes through active movement. This approach enhances the methodological importance of empirical experiments: for example, in an experiment such as "which objects sink in water, which ones float?" the child makes initial conceptual distinctions by directly testing the properties of weight, volume, and material. The task of the teacher is not to immediately say the "correct answer", but to lead the child to actions close to measurement (comparison, counting, grouping).

The educational value of empirical experiments is that they form a culture of distinguishing "result" and "evidence" in the child: the child begins to distinguish between what he saw (evidence) and what he thought (interpretation). This distinction serves as the main support for scientific literacy in the later stages. From this point of view, in the methodology of preschool education, the experiment is not limited to natural sciences: it gives more effective results in integration with speech development (description), elements of mathematics (measurement, sorting), social experience (finding a solution in cooperation).

The proposed methodology is based on the sequence "Observation - Assumption - Experiment - Explanation - Conclusion - Reinforcement". This sequence leads the child to orderly thinking and clearly defines the didactic task of the experiment.

Stage 1: Problem situation and observation. The teacher creates a situation that arouses interest in the child: for example, "Why does ice melt?", "Why do some

seeds germinate quickly and some slowly?". At this stage, children record signs through their senses (color, shape, temperature, condition). The effectiveness of observation depends on the teacher's questions: the questions should be specific, short, and encourage comparison.

Stage 2: Assumption (simple hypothesis). The child is asked the question "think about it, what will happen?" Here it is important to create an environment where there is no fear of an "error" answer. Dewey shows that the beginning of thinking in education is associated with problems and doubts; therefore, the assumption stage gives the child a "start" to think.

Stage 3: Carrying out an experiment (practical test). The experiment should be safe, short-term, repeatable many times, and understandable to the child. For example:

- Water and objects: putting plastic, wooden, metal objects in water; grouping the result.
- Melting ice: a piece of ice in a place close to hot and cold; comparing time.
- Plant growth: caring for the same seed in a light and shade; marking the change in a diary.

At this stage, the mechanism of "knowledge through practical action" emphasized by Piaget comes into play. As the child performs with his hands, he repeatedly asks the question "what is the reason?", which is the natural psychological basis of a scientific worldview.

Stage 4: Here Vygotsky's idea comes into practical force: the teacher helps the child find logical connections with questions such as "what did you see?", "which object floated?", "what changed?". Visual recording methods such as drawing, marking, and making a simple table (pictogram) are effective in explaining the result.

Stage 5: The conclusion can be a short sentence that is “like a rule” in preschool age: “Light objects often float, heavy ones sink.” If consolidation is carried out through games, constructors, dramatization or creating a fairy tale, then knowledge “sticks” to the child’s experience. Ushinsky emphasizes that the effectiveness of education is associated with demonstrativeness and experience close to the child. This idea implies the need to conduct the experience with objects that are familiar to the child, and to “translate” abstract concepts into a concrete situation. The normative framework of preschool education in Uzbekistan sets out the requirements for organizing the educational process based on a competency-based approach, integration and practical activities. This document methodologically means that empirical experience should not be a “separate lesson”, but should be inextricably linked with such activities as daily games, walks, pre-meal hygiene, and care for a nature corner. For example, observing the strength of the wind during a walk, comparing the movement of leaves; phenomena such as the state of water (hot-cold) and evaporation in food can be discussed in simple language.

Empirical experiments are a natural and effective methodological tool for forming children's scientific outlook in preschool education, which gradually leads the child to rely on evidence, observe, compare, guess and draw conclusions. The effectiveness of the methodology is determined by the goal-oriented nature of the experiment, its completion with dialogical discussion, compliance with safety and recording the result in a way that is appropriate for the child.

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