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Enhancing Creative Competence in Future Primary School Teachers through an Interdisciplinary Approach Based on Bloom's Taxonomy

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Abstract: The article analyzes the theoretical and practical foundations of educational projects based on Bloom's taxonomy in the development of creative competence of third-grade teachers in the future. Through the cognitive stages of Bloom's taxonomy — knowledge, production, application, analysis, production and production — creative thinking, reflective and productive creative competencies in students are highlighted.

Keywords: Bloom's Taxonomy, creative thinking, interdisciplinary approach, primary education, cognitive stages

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The formation of creative competence is one of the priority areas of modern pedagogy. In the era of globalization, the development of creative thinking in students is considered one of the important goals of the educational process. In 2018, the OECD – Organization for Economic Cooperation and Development's "The Future of Education and Skills: Education – 2030" concept noted that "21st century education should equip students with creative thinking, capable of solving problems in innovative ways." [1]

The goal of modern education that meets international standards requires the formation of students not only as knowledge holders, but also as independent thinkers and innovators. Therefore, the development of creative competence is becoming a central issue in pedagogical activity.

The Decree of the President of Uzbekistan Sh. Mirziyoyev dated January 28, 2022, No. PF-60, establishes additional measures to radically improve the art education system; strengthens artistic and scientific potential in the field, develops children's art; supports talented young people and further expands their creative capabilities; improves the quality of art education and systematically develops

modern, effective methods and forms of implementing tasks in this regard [2], especially in the process of training future primary school teachers, increasing attention is being paid to the formation of a creative approach and high-level cognitive activities. In this process, the improved model of Bloom's taxonomy and interdisciplinary integration (interdisciplinary approach) are recognized as effective tools for improving the quality of education.

Bloom's taxonomy is a pedagogical model used to systematize learning objectives, which was developed in 1956 by a group led by the American educator Benjamin Bloom. This model serves to gradually develop students' knowledge levels. It is used to effectively organize teaching, learning, and assessment.

Stages of development of Bloom's taxonomy (cognitive domain):

1. Knowledge - remembering facts, information, terms.

Sample question: "What?", "Who?", "When?"

Example: "List the types of verbs in the Uzbek language."

2. Comprehension – understanding and interpreting information.

Question: "What does this mean?", "How do you understand it?"

Example: "Tell the main idea of the given passage."

3. Application – applying knowledge to a new situation.

Question: "How is it used?", "What example do you give?"

Example: "Apply the equation to a practical problem."

4. Analysis – dividing into components, determining logical connections.

Question: "What does it consist of?", "Why is this so?"

Example: "Analyze the author's opinion of the work with evidence."

5. Synthesis – creating a new idea, solution, product.

Question: "What new can be created?", "What new approach do you propose?"

Example: "Write a story based on a given topic."

6. Evaluation – expressing an opinion, reasoning, making a decision.

Question: "What do you think?", "Which one is better?", "Why?"

Example: "Compare the opinions of two authors and prove which one is more reasonable." [3]

Improved form of Bloom's taxonomy (from 2001):

In the updated version by Anderson and Krathwohl in 2001, action verbs were used:

1. Remembering
2. Understanding
3. Applying
4. Analyzing
5. Evaluating
6. Creating (synthesis in a new form)

The effect of Bloom's taxonomy on students:

- creative thinking develops: at higher levels, students move to independent thinking;

- cognitive levels are determined: the possibility of an individual approach to each student is created;
- practical knowledge skills increase: theoretical knowledge is reinforced through practical tasks;
- assessment is clear: assessment criteria are developed for each stage;
- based on the theory of constructivism: the student constructs knowledge himself, the teacher is the guide;
- taxonomy - a step-by-step approach: allows for a systematic construction of the learning process;
- suitable for interactive methods: discussion, project work, problem situations.

We will consider the practical application of Bloom's taxonomy in the following examples:

- ✓ writing goals for each stage in lesson plans;
- ✓ developing questions, tasks, assessment criteria for each stage;
- ✓ in interdisciplinary lessons (interdisciplinary) - it is advisable to use mathematics + Uzbek language + natural science in an integrated manner.

In the development of creative competence, the taxonomy of cognitive activities developed by Benjamin Bloom and later updated by Anderson and Krathwohl serves as an important theoretical basis. In this taxonomy, the process of acquiring knowledge is divided into stages: remembering, understanding, applying, analyzing, evaluating, and creating. As Anderson and Krathwohl point out, "Creation is the highest level of cognitive activity, representing the ability of learners to create new ideas and products." [4]

Bloom says in his work: "The main goal of education is not to memorize facts, but to form higher-level thinking." This approach encourages students to find new solutions, not just to master ready-made knowledge.

An interdisciplinary approach is an important methodological tool to support creativity and critical thinking. According to Drake and Burns, "An interdisciplinary approach eliminates the boundaries between traditional disciplines, fostering deeper learning and creativity." Beane describes the essence of integrated education as follows: "It is not just about connecting disciplines, but about connecting learning to real-life contexts."

Creative thinking, in turn, requires innovative decision-making, the development of new ideas, and a unique approach to complex problems. Sternberg defines creative competence as "the ability to go beyond existing ideas and create new and useful results." Robinson puts it more sharply: "Creativity is as important in education as literacy, and we should give it the same attention."[5]

Future educators with creative thinking:

communicate ideas that others have not thought of;

choose a unique style of expression;

sometimes ask unrelated or unusual questions;

enjoy open-ended tasks;

argue ideas based on evidence;

solve problems in unconventional ways. [6]

Therefore, one of the most urgent tasks in preparing future primary school teachers for modern educational problems is the formation of creative competence based on Bloom's taxonomy and an interdisciplinary approach.

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