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USING INTERACTIVE METHODS TO TEACH LOGICAL THINKING IN THIRD-GRADE MATHEMATICS

Mamajonov Sanjarbek Mirzayevich
Associate Professor, Kokand University
Doctor of Philosophy (PhD) in Physics and Mathematics
Email: sanjarbekmamajonov@gmail.com,
Baxtiyorova Husnidaxon Bahodirjon qizi
Second-Year Student, Primary Education Department, Kokand University
smamajonov@kokanduni.uz

Abstract. This article explores the role of interactive methods in primary education, focusing on their types, applications in third-grade classrooms, and the integration of modern technologies into the learning process. It examines how primary school teachers can leverage contemporary pedagogical tools to enhance teaching effectiveness. The study highlights the significance of these methods in fostering independent thinking, analytical skills, and practical application of knowledge, ultimately enriching the educational experience.

Keywords: pedagogical technologies, interactive methods, formats, tools, modern approaches, lesson design, internet, email.

Introduction

Education is a collaborative endeavor between teachers and students, fostering personal growth, knowledge acquisition, and character development. During lessons, teachers impart their expertise and skills, enabling students to absorb and apply knowledge effectively. In today's world, the Digital Uzbekistan 2030 strategy emphasizes the importance of preparing professionals in information technology, promoting digital advancements, and integrating these technologies into daily life.

Students engage with information in diverse ways—absorbing, processing, and applying it based on their unique learning styles. The educational process involves teacher-student collaboration, independent student work, and extracurricular activities to address learning and developmental goals. Interest in interactive methods and information technologies in education is growing rapidly. Unlike traditional approaches, which often focus on rote learning, modern technologies encourage students to seek knowledge independently, think

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critically, analyze information, and draw their own conclusions. Teachers, in this context, create conditions for students' intellectual and personal growth while guiding and directing the learning process.

Modern educational technologies, such as the "Venn Diagram," "Boomerang," "FSMU," "Sunflower," and "Cluster" methods, as well as the "Which One Doesn't Belong?" approach, are increasingly utilized. These methods play a vital role in developing students' logical thinking skills.

The "Which One Doesn't Belong?" method, for example, involves the following steps:

- Constructing a system of concepts that reveal the essence of the topic being studied.
- Including four (or more) relevant concepts and one irrelevant concept within this system.
- Tasking students with identifying and excluding the irrelevant concept.
- Encouraging students to explain their reasoning, reinforcing the topic by justifying the connections between the remaining concepts.

Methodology

This method requires students to engage in analytical reasoning and articulate key concepts related to the topic. The process includes:

- The teacher creates a balanced set of concepts, some relevant and others irrelevant to the topic.
- Students identify and exclude irrelevant concepts from the system.
- Students explain the rationale behind their choices.

This method can be applied individually, in groups, or class-wide to ensure thorough understanding and assess students' knowledge.

The "Cluster" method activates students' thinking and encourages independent reasoning. In this approach, the central concept of a topic is written within a circular diagram, and related ideas are added in surrounding circles, creating a visual map of interconnected concepts.

The "Water Lily" method fosters critical thinking and analytical skills by encouraging students to reflect on and consolidate their understanding of a topic.

The "Venn Diagram" serves as a graphic organizer to compare, contrast, and differentiate two or more objects or events. Two overlapping circles are drawn, with shared characteristics noted in the overlapping section and distinct features listed on either side.

The "Boomerang" method helps students express ideas freely, retain information, and articulate their thoughts clearly.

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The "FSMU" method (Fact, Support, Example, Summary) teaches students to state a fact, provide supporting reasons, offer examples, and summarize their findings, fostering structured reasoning.

The "Sunflower" method promotes independent thinking, free expression, topic review, and skill assessment, helping teachers gauge students' knowledge levels.

Requirements for Educational Games

To maximize effectiveness, educational games should meet the following criteria:

1. Be age-appropriate for students.
2. Align with the content and objectives of the lesson.
3. Have clearly defined time limits.
4. Serve both educational and developmental purposes.
5. Have a clear purpose and significance.

Adhering to these principles enhances lesson effectiveness and ensures modern technologies contribute meaningfully to learning outcomes.

Technology in Education

Tests are essential across all subjects. While printed tests were once the norm, digital tests now allow teachers to work individually with students. Over the years, computer-based tests have been developed for subjects like mathematics, literature, and native language for grades 1–3. These tests provide immediate feedback, enabling students to identify and address gaps in their understanding. For example, in Natural Sciences, computer-based tests can cover topics such as "Our Country's Water Basins," "Mother Earth," "Forests and Fields: Nature's Wealth," "Agricultural Sectors," "Our Region," "Underground Resources," "Our Country's Territorial Structure," and "Regional Livestock and Plants."

In native language lessons, students often struggle with lexical concepts like antonyms, synonyms, and homonyms. Tests help develop their linguistic abilities, teaching them to identify direct and figurative meanings, select appropriate synonyms, and distinguish between synonyms, antonyms, and homonyms. The "Opposite Game" test, focused on antonyms, effectively supports lesson comprehension.

Crucially, tests engage students' eyes, minds, and hands, while game elements spark interest and sustain engagement, ensuring the learning process remains dynamic. Beyond tests, crosswords, diagrams, and tables encourage independent learning, with students working directly on computers.

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Supplementary materials, such as videos and photo slides, enrich subjects like regional studies. Microsoft PowerPoint presentations are a highly effective tool, combining informative content, visual appeal, and interactivity. Teachers can incorporate photos, illustrations, animations, and additional information to create engaging presentations.

Another approach involves using the internet during lessons to access relevant materials, which can be pre-selected and presented to students or discussed in a dialogue format. Third-grade students can learn to use the internet independently, select relevant information, save it, and create presentations or projects for future use. Starting in second grade, students can perform tasks on computers, not just in notebooks, developing initial computer skills and continuously deepening their theoretical and practical abilities.

Conclusion

In conclusion, the use of interactive and modern methods in primary education is key to organizing effective learning experiences. Information and communication technologies (ICT) foster independent thinking, creative exploration, and logical reasoning, while helping students connect classroom learning to real life and sparking greater interest in lessons. These technologies also keep students and teachers informed about modern educational programs.

By leveraging these tools, teachers can deliver lessons rooted in advanced pedagogical and ICT approaches, ensuring high-quality education. Multimedia technologies, when integrated into every lesson, further enhance students' independent and creative thinking. Interactive methods and ICT tools in primary classrooms cultivate modern, creative thinking, ultimately improving lesson quality and effectiveness.

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