

REINFORCING KNOWLEDGE IN PRIMARY SCHOOL THROUGH VISUAL AND INTERACTIVE METHODS

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Abstract

This study examines the significance and effectiveness of using visual and interactive methods in primary school education. Research indicates that visual aids and interactive exercises help reinforce students' knowledge, develop creative and critical thinking, and enhance learning motivation. The study analyzes methodological recommendations, the use of technological tools, and adaptation of methods according to students' age characteristics.

Keywords

Primary school, visual methods, interactive methods, knowledge reinforcement, educational technologies, learning motivation, creative thinking.

ЗАКРЕПЛЕНИЕ ЗНАНИЙ С ПОМОЩЬЮ ВИЗУАЛЬНЫХ И ИНТЕРАКТИВНЫХ МЕТОДОВ В НАЧАЛЬНЫХ КЛАССАХ

Аннотация

В данной работе изучается значение и эффективность использования визуальных и интерактивных методов в начальных классах. Исследования показывают, что визуальные средства и интерактивные упражнения способствуют укреплению знаний учащихся, развитию творческого и критического мышления, а также повышению мотивации к обучению. В работе рассматриваются методические рекомендации, возможности использования технологических средств и адаптация методов к возрастным особенностям учеников.

Ключевые слова:

Начальные классы, визуальные методы, интерактивные методы, закрепление знаний, педагогические технологии, мотивация к обучению, творческое мышление.

In primary school, the educational process should be aimed at fostering students' interest, active participation, and knowledge reinforcement. Modern pedagogical technologies serve to encourage independent thinking, enhance attention, and develop creative approaches among students. From this perspective, visual and interactive methods are widely used as key tools in the educational process. Visual methods involve presenting and explaining learning materials through images, diagrams, charts, maps, slides, and animations. Research indicates that information delivered through visual tools improves students' long-term memory and understanding. Moreover, visual materials for children need to be colorful, simple, and age-appropriate. For instance, complex topics can be explained in simple words using colorful illustrations, animations, and interactive diagrams.

Interactive methods, on the other hand, ensure active student engagement, moving them from passive listening to active learning, and rely on constant interaction between the teacher and classmates. One of the most effective forms of interactive methods is group work, where students are divided into small groups to solve specific problems collaboratively¹. This approach develops cooperation skills, encourages idea exchange, and fosters mutual assistance among children. Additionally, role-playing games enhance children's imagination and help them engage more deeply with the topic. Question-and-answer methods are also an integral part of interactive teaching, motivating students to concentrate, think critically, and express their own opinions independently.

In many cases, combining visual and interactive methods increases the effectiveness of the learning process. For example, students who observe an animated process can discuss it in groups or apply knowledge in practice by solving a problem presented with a diagram. This approach enhances comprehension, encourages independent thinking, and helps retain learned information in long-term memory². The use of technology further enriches interactive tools—interactive whiteboards, educational applications, online platforms, and tablets provide students with the opportunity to acquire knowledge in both visual and interactive formats.

There are several advantages to using visual and interactive methods. Firstly, these methods facilitate knowledge reinforcement: students receive information through seeing, hearing, and doing, which strengthens memory and understanding. Secondly, engaging visual materials and interactive exercises increase students' motivation to learn³. Thirdly, these methods promote the development of creative thinking and problem-solving skills: group work, role-playing games, and interactive exercises encourage students to solve problems in various ways.

Pedagogical research indicates that teaching in primary schools using visual and interactive methods not only reinforces students' knowledge but also contributes to their personal development, enhances communication skills, and helps them develop the ability to express themselves⁴. At the same time, it is important for teachers to take into account students' age characteristics, the complexity of the topic, and the pedagogical goals when using these methods. For instance, for younger children, short-term visual materials and simple interactive exercises are more effective, whereas older students benefit from more complex diagrams and group projects, which allow them to master knowledge at a deeper level. Moreover, the use of technological tools plays a crucial role in increasing the effectiveness of visual and interactive methods. Interactive whiteboards, tablets, educational platforms, and animations provide students with the opportunity to better understand and reinforce the topic. These methods actively engage students, stimulate interest in learning, and make the educational process more

¹ Slavin, R. E. (2010). *Cooperative Learning: Theory, Research, and Practice*. Pearson.

² Clark, R. C., & Mayer, R. E. (2011). *e-Learning and the Science of Instruction*. Pfeiffer.

³ Deci, E. L., & Ryan, R. M. (2000). *Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being*. *American Psychologist*, 55(1), 68–78.

⁴ Hattie, J. (2009). *Visible Learning: A Synthesis of Over 800 Meta-Analyses Relating to Achievement*. Routledge.

effective. From this perspective, visual and interactive methods in primary schools serve as a key tool for reinforcing knowledge, developing students' creative and critical thinking, and making the learning process both engaging and effective.

To use visual and interactive methods effectively in primary schools, it is first necessary to consider students' age characteristics and abilities. For example, younger children (ages 6–8) pay more attention to short-term visual materials, colorful illustrations, and simple diagrams. In this age group, interactive methods are most effectively applied through role-playing games, group exercises, and short question-and-answer activities⁵. In contrast, older students can master the topic more deeply through complex diagrams, animations, and project-based activities.

The use of multimedia technologies is crucial for enhancing the effectiveness of information presented through visual methods. For instance, interactive slides, animated diagrams, and educational videos provide children with the opportunity to see and understand the topic more clearly. Research shows that visual and animated materials extend students' memory retention and simplify complex concepts⁶. At the same time, visual materials combined with interactive exercises are the most effective means of reinforcing knowledge and generating interest among students.

Technological tools can be widely used to implement interactive methods. For example, with interactive whiteboards, students can collaboratively analyze diagrams, images, or charts related to the topic, complete them, or contribute their own suggestions. Using tablets and educational applications, students can perform various interactive exercises, which not only reinforces their knowledge but also develops their attention and independent work skills. These approaches enable students to engage more actively with the learning process, encourage independent thinking, and strengthen their understanding of the material.

There are also pedagogical recommendations for teachers when applying visual and interactive methods. First of all, the objective of each lesson should be clearly defined, and the visual materials and interactive exercises must correspond to the topic. Additionally, differentiating materials according to students' abilities and needs produces effective results⁷. For example, breaking down complex topics into simpler parts, starting with basic questions, and gradually solving more difficult tasks help reinforce children's knowledge. Moreover, combining group work and role-playing activities with visual materials increases the effectiveness of the educational process. For instance, children can work in groups to solve a problem based on graphs and diagrams or practically visualize a process demonstrated through animation. This approach develops critical thinking, enhances cooperation skills, and helps students gain a deeper understanding of the topic.

Pedagogical research shows that the integrated use of visual and interactive methods increases students' motivation to learn, helps reinforce knowledge, and encourages active participation in the learning process. At the same time, students' social and communicative skills

⁵ Tomlinson, C. A. (2014). *The Differentiated Classroom: Responding to the Needs of All Learners*. ASCD.

⁶ Mayer, R. E. (2009). *Multimedia Learning*. Cambridge University Press.

⁷ Hattie, J. (2009). *Visible Learning: A Synthesis of Over 800 Meta-Analyses Relating to Achievement*. Routledge.

are developed. Group work and interactive exercises teach children to listen to each other, exchange ideas, and make collective decisions. The use of technology provides further opportunities to enhance the effectiveness of interactive and visual methods. For example, through online platforms, students can solve various problems independently, participate in tests and quizzes, and reinforce the topic with animated explanations. Such technological tools increase students' interest in the topic, help retain knowledge in long-term memory, and develop independent work skills⁸. When evaluating the effectiveness of visual and interactive methods, teachers use various forms of assessment. For instance, through tests, group work results, practical exercises, and project-based activities, teachers can assess students' level of knowledge and their active participation in the learning process. This enables the optimization of the educational process and informed pedagogical decision-making. Thus, organizing the educational process in primary schools using visual and interactive methods allows for the reinforcement of students' knowledge, the development of creative and critical thinking skills, the enhancement of cooperation and communication abilities, and the strengthening of motivation to learn. This approach directly contributes to achieving the primary goals of modern education.

Conclusion

In primary school, the use of visual and interactive methods in the educational process is an effective tool for reinforcing students' knowledge, developing creative and critical thinking skills, and enhancing motivation. Information presented through visual methods is absorbed more quickly by children and retained in long-term memory. Diagrams, charts, maps, animations, and other visual materials serve to present topics in a simple and comprehensible manner.

Interactive methods, on the other hand, transform students from passive listeners into active learners. Group work, role-playing games, question-and-answer exercises, and interactive projects develop students' communication, collaboration, and problem-solving skills. Combining visual and interactive methods increases the effectiveness of the learning process, allowing students to gain a deeper understanding of the topic and work independently.

Interactive and visual methods implemented with technology—such as interactive whiteboards, tablets, educational applications, and online platforms—enrich the learning process and further enhance students' interest. In this way, visual and interactive methods in primary schools not only reinforce knowledge but also promote personal development, improve social skills, and increase students' engagement in learning. These methods directly contribute to the main goals of modern pedagogy—teaching students to think independently, participate actively, and understand the subject more deeply. Therefore, it is essential for primary school teachers to use visual and interactive methods wisely and systematically.

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