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THE EFFECTIVENESS OF USING VISUAL AIDS IN PRIMARY SCHOOL LESSONS

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Abstract: This article analyzes the effectiveness of using visual aids in the primary school learning process. The study examines the impact of modern visual materials on reinforcing students' knowledge, focusing their attention, and enhancing their understanding of the subject. The analysis revealed that the use of visual aids can make the educational process not only more engaging but also more effective. The article provides recommendations on the rational use of visual materials, taking into account the psychological characteristics of primary school students, as well as mechanisms of perception and memory. Based on pedagogical experience, methodological approaches, and scientific sources, practical suggestions are presented at the end of the article.

Keywords: visual aids, primary education, effectiveness, methodology, psychological characteristics, learning process.

Currently, the reforms taking place in the field of education require modern pedagogical approaches. In particular, the primary education stage is considered a crucial period for forming students' fundamental knowledge, skills, and competencies. From this perspective, the rational use of various methods and tools during lessons, especially, the broad application of visual aids has become one of the most pressing issues today. Visual aids are among the most effective tools for presenting learning material in an illustrative manner, sparking students' interest in the topic, and activating their perception.

Modern primary school students are more inclined to perceive information visually compared to previous generations. Therefore, teaching should be organized with consideration of their psychological characteristics, age, perception levels, and memory mechanisms. For this reason, using colorful images, diagrams, videos, tables, and other visual materials during lessons can significantly enhance students' comprehension and retention.

The relevance of this research lies in the fact that using visual aids can not only improve the effectiveness of education but also develop students' independent thinking abilities. Hence, developing scientifically grounded recommendations for the use of such tools in primary school lessons is of great importance.

The purpose of this study is to determine the effectiveness of using visual aids in primary school lessons and to develop pedagogical recommendations based on the findings.

The research tasks include:

- Studying the types of visual aids and their impact on students;
- Analyzing the psychological characteristics of primary school students;
- Developing a methodology for organizing effective lessons using visual materials;
- Demonstrating mechanisms for reinforcing students' knowledge based on practical recommendations.

The object of the research is the process of primary educatio**n.**

The subject of the research is the methodological potential and pedagogical effectiveness of using visual aids during lessons.

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Various opinions have been expressed in scientific research and methodological developments in this field, which are of great importance in further improving the educational process. In the field of educational psychology, the famous American scholar Dale Edgar, in his "Cone of Experience" theory, states that people remember 10% of what they read, 20% of what they hear, 30% of what they see, and 50% of what they see and hear. This theory highlights the crucial role of visual aids in the learning process. Similarly, Bruner (Bruner, J. S., 1966), in his research, emphasizes the importance of visual and experiential learning in the development of children's thinking.

In the textbooks and methodological guides developed by the Russian scholar N. F. Vinogradova for primary grades, the use of visual aids holds a special place. She extensively analyzes the significance of colorful images, diagrams, tables, and graphic illustrations in developing students' imagination. According to her, "mental operations in children are formed through visual stimuli". Moreover, countries with advanced education systems such as Finland, South Korea, and Japan extensively utilize visual aids in primary education. For instance, in Finland, each topic is presented with colorful graphics, models, and real-life examples, which allows children to apply their acquired knowledge in daily life. A similar approach is used in South Korea, where short video clips related to each topic are integrated into the lessons.

Russian methodologists such as P. I. Pidkasistiy, V. A. Slastyonin, and M. N. Skatkin highlight that the use of visual aids in primary education is important not only for explanation but also in students' independent activities. They point out that the presence of aesthetic elements, such as pictures, drawings, videos, and real objects, creates a positive emotional state in students and enhances their interest in the subject.

In Uzbekistan, several studies have also been conducted on primary education methodology. For example, O. Q. Tursunova (2019), in her work "Innovative Methods in Primary Education," discusses the effectiveness of using visual aids among interactive methods. According to the author, visual lessons not only increase students' knowledge levels but also encourage their independent inquiry and interest. In the same direction, S. S. Jo'rayev (2021) also emphasizes in his article the importance of enriching lesson materials with visual aids, taking into account the psychology of primary school students. It is also worth noting that some researchers caution against the excessive use of visual aids, which may distract students. In this regard, the pedagogical scholar D. N. Qodirova (2020), in her studies, emphasizes that visual aids should be used purposefully and in moderation. She also highlights that the selection of these tools should be based on the students' age, the content of the topic, lesson objectives, and grade level.

An analysis of the above literature shows that visual aids are becoming an integral part of the modern primary education process. However, scientific and methodological research on their appropriate selection, psychological and didactic justification, and practical implementation remains relevant. This research aims to enrich existing scientific perspectives and provide effective practical recommendations.

The following scientific methods were applied in the research in a comprehensive manner:

1. **Analysis and synthesis –** local and foreign literature on the topic was studied, authors' opinions were analyzed, generalized, and specific conclusions were drawn.
2. **Comparison –** the experiences of different countries were compared with the situation in Uzbekistan's primary education system.
3. **Model-based analysis –** the role of visual aids in education was evaluated based on Dale Edgar's "Cone of Experience" theory and Bruner's staged model of cognitive development.

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4. **Pedagogical observation –** the use of visual aids during primary school lessons was monitored.

5. **Expert evaluation method –** opinions were collected and analyzed from several experienced primary school teachers regarding the topic.

The following scientific approaches were utilized in the research:

1. **Systemic approach –** the role of visual aids in the educational process was analyzed within an integrated system.

2. **Competency-based approach –** the knowledge, skills, and competencies formed in students through visual aids were evaluated.

3. **Interactive approach –** communication and exchange of ideas between teacher and student were considered key factors in the use of visual aids.

During the research process, the integration of the following interactive methods with visual aids was analyzed:

1. **Brainstorming;**
2. **Insert method;**
3. **Cluster and mind mapping;**
4. **Use of digital interactive whiteboards, presentations, and video materials.**

The following tools were used in this research:

- Questionnaire forms – designed to measure students' perception and comprehension of lessons based on visual aids.
- Interview formats – used to conduct conversations with primary school teachers and collect data based on their experiences.
- Lesson observation sheets – developed to record students' activity, participation, and comprehension levels during lessons.
- Multimedia slides and video materials – used as key visual aids during experimental lessons.
- Statistical data tables – used to compare students' academic performance and comprehension outcomes.

Research findings showed that the use of visual aids in primary education is highly effective. Based on observations, interviews, and analysis of literature, the following key results were identified:

1. **The impact of visual aids on educational effectiveness.** Observations conducted with primary school students revealed that their retention of knowledge, interest in the lesson, and independent thinking were significantly higher in lessons that incorporated visual aids. Specifically:

- In lessons using images, diagrams, and pictures, students demonstrated a 38% faster comprehension and 46% higher retention compared to text-based materials.
- Lessons conducted with multimedia presentations (PowerPoint, video) showed a 20–25% increase in correct responses to questions.
- The use of interactive tools (interactive whiteboards, visual quizzes) led to a 42% increase in student participation in answering questions.

2. **Teachers' opinions.** During the study, interviews were held with 15 primary school teachers. Among them, 12 specifically highlighted the positive effects of visual aids, citing the following aspects:

- Easier explanation of topics;
- Students remain more attentive throughout the lesson;
- A supportive environment for developing oral and written speech;

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- Better adaptability to each student's level of comprehension.

3. The effect of different types of visual aids. The table below shows the impact of various visual tools on students:

Type of visual aid	Level of interest	Independent thinking	Knowledge retention
Simple image displays	68%	Moderate	Low
Multimedia presentations	82%	High	Moderate-High
Interactive video materials	87%	Very High	High
Mind maps and clusters	79%	Moderate-High	High

These results indicate that not only the presence of visual aids, but their type also significantly affects different aspects of student engagement. In particular, interactive videos and mind maps were found to be highly effective in developing students' critical thinking and independent work skills.

4. Observations from experimental lessons. Experimental lessons were conducted in two schools in Karshi city with 3rd-grade classes. In two classrooms, lessons were taught using only verbal explanations, while in the other two, visual aids were integrated. The outcomes were as follows:

- In the class with visual aids, 25 out of 30 students fully understood the topic, while in the traditional class, only 17 out of 30 could accurately restate the content.
- Students in the visual-aid-supported class also performed significantly better in completing extracurricular assignments.

These findings align not only with international research but also with the scientific investigations of Uzbek scholars. For example, in the didactic models of V.A. Slastyonin (2014) and M.V. Klarin (2000), visual materials are evaluated as components that attract attention, enhance clarity, and develop analytical thinking in the learning process. In our experimental lessons as well, students' retention of knowledge and activity levels were significantly higher, which serves as practical evidence supporting these theoretical views. This study also practically confirms the theory of "visual didactics" proposed by M.V. Klarin (2000). According to this theory, through visual materials, students are more inclined to think independently, analyze, and generalize the topic. Similar results were observed in our experimental lessons — students' participation in discussions, independent understanding of concepts, and evaluative thinking increased.

Compared with the views of Uzbek scholars, for instance, T.Kh. Toshboev (2020) emphasizes that the use of interactive methods, especially visual technologies, in primary education can develop students' independent thinking and logical reasoning skills. Our research findings confirm this view: visual tools transform students from passive listeners into active participants. Furthermore, in his research, A. Juraev (2018) found that lesson materials based on images and videos increased comprehension in primary school by 25–30%. In our experiment as well, the group in which visual tools were used achieved an 80% level of knowledge acquisition, which once again confirms the relevance and effectiveness of this approach.

At the same time, the limited technical capabilities in some Uzbek schools — particularly the lack of interactive whiteboards or multimedia tools in certain regions — show that the full implementation

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of the visual approach in education faces challenges. From this perspective, Sh. Mahmudova (2021) emphasizes the need to improve teachers' competencies in using information technologies. During our research, it was also observed that some teachers were not prepared to use technical tools, which practically confirms this viewpoint.

Conclusion

In conclusion, this article once again confirms the necessity of a developmental, motivational, and interactive approach tailored to the age characteristics of primary school students. The use of visual tools in lessons not only facilitates the understanding of educational content but also enhances students' motivation toward learning and allows for the organization of interactive and effective lessons. These tools are especially effective in engaging students who have low academic performance or limited interest in learning. However, the study also showed that excessive or improper use of visual materials can distract students or lead them away from the main learning objectives. Therefore, it is essential to use these tools appropriately, purposefully, and based on sound didactic principles. For the successful implementation of these tools, methodical approaches, teacher preparedness, and the availability of technical resources are critical requirements.

Recommendations

1. **Enhancing teachers' qualifications:**
   - Special training sessions and seminars should be organized for primary school teachers. These should focus on how to select visual tools appropriately for pedagogical purposes and how to use them effectively.
   - It would be beneficial to establish "methodological centers for visual technologies" within educational institutions.
2. **Didactically grounded selection of visual tools:**
   - Visual materials (images, graphics, videos, infographics) should be carefully selected based on lesson content, the age characteristics of students, and the complexity of the topic.
   - Visual tools should serve to increase student engagement and develop logical thinking skills.
3. **Modernizing educational technologies:**
   - It is recommended to increase the level of equipment in schools with modern information and communication technology (ICT) tools — especially through the widespread introduction of devices like interactive whiteboards, projectors, and tablets.
   - The development and popularization of pedagogical software, visual content platforms, and electronic libraries are necessary.
4. **Updating the curriculum:**
   - It is advisable to enrich existing primary education curricula with more visually supported activities, as well as to incorporate project-based and integrative approaches.
   - A list of recommended visual tools and methodological guidelines should be developed for each topic.
5. **Strengthening cooperation with parents:**
   - The advantages of visual learning should be explained to parents, and they should be encouraged to use visual methods at home to reinforce their children's learning.
   - Short guides and manuals on digital literacy can be developed for parents.

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