DEVELOPMENT OF INFORMATION PROCESSING SKILLS AS ONE OF THE STAGES OF DEVELOPMENT OF UNIVERSAL COGNITIVE ACTIVITY OF PRIMARY SCHOOL STUDENTS

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Abstract:
The article discusses the technology of forming information processing skills in primary school students from a scientific and pedagogical point of view. The essence of information processing, its stages and components are analyzed. Also, the processes of directing students to independent thinking, separation of the main content, generalization and creative application are revealed using educational methods and technologies. The article substantiates the effectiveness of the use of text processing technology, graphic organizers, interactive methods and reflection exercises.

Keywords : primary education, information processing, cognitive skills, perception, analysis, generalization, creative thinking, graphic organizer, interactive method, reflection.

INTRODUCTION

Today, the issue of students' readiness for independent learning and the development of competencies in information analysis and processing is one of the most pressing issues in the global education system. Specifically, developing children's skills in perceiving, processing, and effectively using information at the primary level lays the foundation for successful learning at subsequent stages. State educational standards implemented in the Republic of Uzbekistan and reforms aimed at "Improving the Quality of Primary Education" have identified the development of students' independent thinking and the fostering of creative and critical thinking as key objectives. [1]In this process, the development of information skills is essential for the development of students' cognitive competencies and their adaptation to the modern learning environment.

The development of information processing skills in primary school students is inextricably linked to the principles of the 4C model (Creativity, Critical Thinking, Communication and Collaboration), which is widely used in modern education.

[1] Resolution of the Cabinet of Ministers of the Republic of Uzbekistan No. 187 of April 6, 2017 “On approval of state educational standards for general secondary and secondary specialized and vocational education.”

1. Creativity – manifests itself in the creative processing of information read by the student, the development of new ideas and the search for alternative solutions.
2. Critical thinking is formed in the process of analyzing information, identifying the main and secondary aspects and checking its reliability.
3. Communication – is developed through students expressing the information they receive in conversations with peers and substantiating their opinions in debates and discussions.
4. Collaboration – information processing is enhanced by the collaborative sharing of knowledge in group work and the completion of collective tasks.

Thus, the introduction of information technology into primary education not only develops students' cognitive competencies, but also contributes to the development of their 21st-century skills – the core competencies defined in the 4K model.

METHODOLOGY

Information reception is the process of perceiving information from the external environment through the senses and storing it in memory. For students, this includes:

- listening to the teacher's speech or audio materials;
- understanding the main content through reading the text;
- acquiring knowledge through observation of visual aids and experiments.

As psychologists (L.S. Vygotsky, A.N. Leontiev, P.Ya. Galperin) noted, in the process of receiving information, attention, memory and cognitive functions of students are actively activated [2].

The article uses the following methodological approaches:

1. A student-centered approach – developing students' individual abilities and using their personal experience in the process of processing information;
2. Cognitive approach – systematic development of tasks for searching, obtaining, processing and applying knowledge;
3. Competency-based approach – focus on developing 21st century skills in students, in particular, the 4C competencies (creativity, critical thinking, communication skills and collaboration);
4. Activist approach – strengthening information processing skills through students applying knowledge in practical situations and completing problem-solving tasks.

[2] Toulmin, S. (1978, September 28). The Mozart of psychology. Mind in Society: The Development of Higher Psychological Processes by LS Vygotsky, edited by Michael Cole, by Vera John-Steiner, by Sylvia Scribner, by Ellen Souberman, The Psychology of Art by LS Vygotsky, Soviet Developmental Psychology: An Anthology edited by Michael Cole. The New York Review of Books, 14, 51-57.

MAIN PART

Developing information processing skills in elementary school students is one of the most important tasks of the educational process. This skill is primarily inextricably linked to students' cognitive, memory, thinking, and verbal activities, which include the ability to analyze information obtained through reading, listening, and observation, to identify the main content, and to apply it in new contexts. When processing information, students typically go through the following stages: perception, analysis, generalization, and creative processing. For example, after reading a text, a student first understands the plot, then identifies the main idea, then expresses it in a brief outline or diagram, and finally, attempts to apply the content to a new situation. Thus, the student not only understands the text but also recreates it and adapts it to their own experience.

Stages of development of information processing skills (see Figure 1).

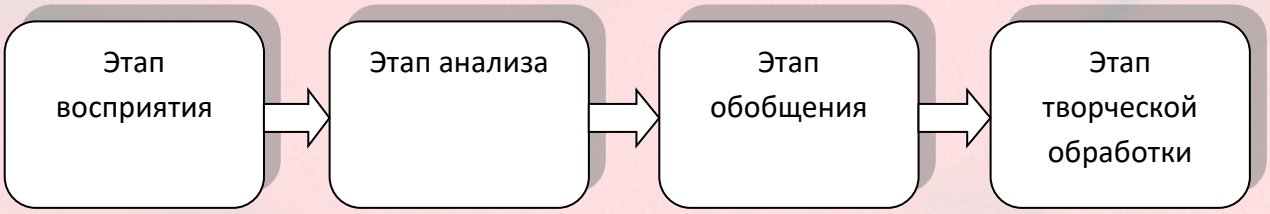

Figure 1. Stages of development of information processing skills.

1. Perception stage – the student carefully perceives information (text, image, experience).
2. Analysis stage – the student systematizes the information, distinguishes between primary and secondary aspects.
3. Generalization stage – the student reformulates the main content in a short and concise form.
4. Creative processing stage – the student enriches the information with his own ideas and applies them to a new situation.

Working with text, graphic organizers (cluster diagrams, Venn diagrams, fishbone diagrams), interactive methods (brainstorming, questions and answers, discussions), and reflection exercises play an important role in developing information processing skills . For example, when working on a fairy tale or proverb, students discover the main idea, express the plot as a diagram, then write a different ending to the tale or tell the story from the perspective of a different character. Such activities develop their critical thinking, creativity, and the ability to draw independent conclusions. The teacher's role in this process is also important. He or she engages students in the activity by asking questions, facilitating discussions, supporting and guiding them. The teacher's main responsibilities include encouraging independent student work, using visual aids, organizing the reflection process, and evaluating results.

Information processing skills are also directly linked to the 4K model (creativity, critical thinking, communication, collaboration). Students develop creativity through creative information processing, critical thinking through distinguishing primary and secondary aspects, communication through discussing content with peers, and collaboration through group work.

Overall, a step-by-step approach, interactive methods, and the integration of graphic organizers into the learning process can effectively develop information processing skills in elementary school students. This creates a solid foundation for developing students' future competencies in independent learning, creative thinking, and critical analysis.

CONCLUSION

Overall, a step-by-step approach, interactive methods, and the integration of graphic organizers into the learning process can effectively develop information processing skills in elementary school students. This creates a solid foundation for developing students' future competencies in independent learning, creative thinking, and critical analysis.

The results of the study show that:

- The gradual development of information processing skills (perception, analysis, generalization, creative application) ensures the cognitive development of students;
- Using interactive methods, graphic organizers and reflection exercises, students learn to identify key content, draw logical conclusions and justify their own opinions;
- Working with examples of folk oral art contributes to the development of cognitive competencies along with artistic and aesthetic development;
- Classes organized on the basis of the 4C model (creativity, critical thinking, communication, and collaboration) correspond to the main goals of modern education and develop universal learning activities in students.

Thus, a phased approach to implementation, the integration of modern pedagogical technologies and the 4K model will contribute to the effective development of information processing skills in elementary school students and, ultimately, the formation of universal cognitive activity.

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