

STATISTICAL ANALYSIS OF EXPERIMENTAL TRIALS ON TEACHING INDEPENDENT THINKING TO ELEMENTARY SCHOOL STUDENTS BASED ON THE DEVELOPMENT OF READING

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Abstract. This article presents a statistical analysis of experimental work on teaching independent thinking based on the development of reading skills in primary school students. The study was conducted in secondary schools in Namangan, Andijan, and Fergana regions with 540 respondents. The pilot study was organized in the stages of clarification, formation, and generalization. The results showed that innovative methods focused on reading are effective in developing independent thinking, analytical thinking, and a lasting interest in reading in students.

Keywords: reading, independent thinking, experimentation, statistical analysis, primary education, pedagogical effectiveness.

Introduction. In the modern education system, the formation of independent thinking competencies of primary school students is one of the urgent pedagogical problems. In particular, reading activities are an important tool in shaping students' intellectual development, critical thinking, and creative approach. Through reading, students not only gain knowledge, but also develop the skills of analyzing events, evaluating the actions of characters, and drawing personal conclusions. Shu nuqtayi nazardan, boshlang'ich sinf o'quvchilarida kitobxonlikni rivojlantirish asosida mustaqil fikrlashga o'rgatishning samarali metodik tizimini ishlab chiqish va uning amaliy samaradorligini tajriba-sinov asosida aniqlash muhim ilmiy-amaliy ahamiyat kasb etadi.

Research methodology. The main goal of the experimental work was to determine the pedagogical effectiveness of the developed didactic materials and methodological recommendations for teaching independent thinking based on the development of reading skills in primary school students. The reading activities of

Primary School students and independent thought processes were selected as the object of the study. The study was carried out in secondary schools in Namangan, Andijan and Fergana regions. A total of 540 students participated in the experiment.

The following tasks were implemented during the pilot study:

- identify mechanisms for developing independent thinking through reading;
- analyze the initial diagnostic situation of the pilot objects;
- implementation of the developed methodological system model into practice;
- statistical analysis of the dynamics of indicators;
- development of recommendations for improving the effectiveness of the

methodological system.

Pilot testing stages Pilot testing was organized in three stages.

1. Clarification stage.

At this stage, the students' existing level of interest in the book, their reading motives, and their intrinsic motivation were studied. Methods used (Figure 1):

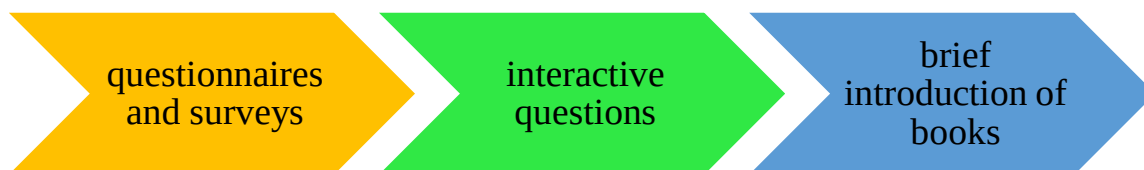


Figure 1. Methods

This stage determined which genres of literature 2nd–4th graders were most interested in, their reading habits, and their reading activity. The results showed that although most students were interested in the book, they did not have sufficient independent reading and analytical thinking skills.

2. Formative stage. At this stage, the developed methodological system was put into practice.

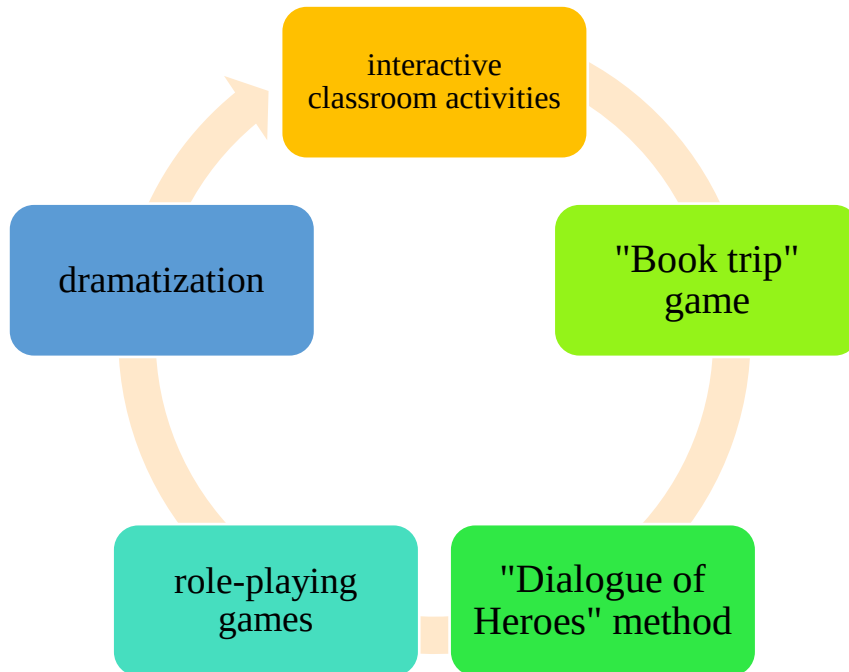


Figure 2. Methods

Using these methods, students' interest in reading was increased, and their skills in analyzing the events of the work, evaluating the characters, and expressing independent opinions were developed. Cooperation with parents was also established, and a reading environment was supported at home.

3. Generalization stage. At the final stage, the effectiveness of the methodological system was evaluated.

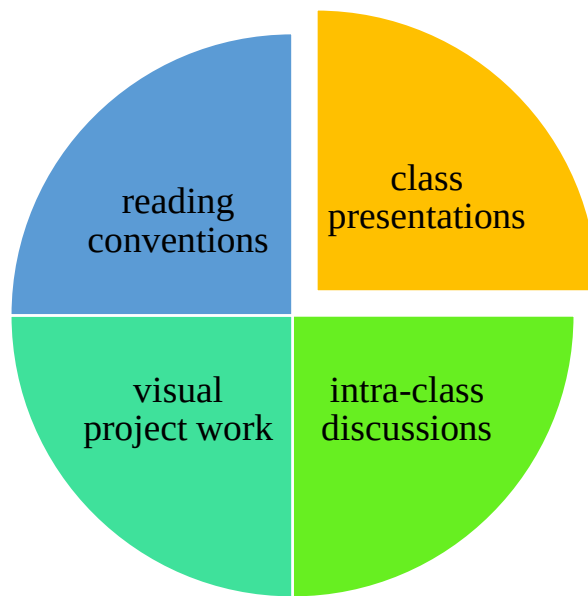


Figure 3.Methods

This stage allowed us to determine the level of development of students' skills in selecting books, independent reading, and drawing conclusions about the work read. Results of statistical analysis.

At the beginning and end of the experiment, students' reading and independent thinking skills were assessed on three levels:

- high;
- medium;
- low.

At the beginning of the experiment:

high level - 21%;
medium level - 44%
low level - 35%

At the end of the experiment:

high level - 48%;
medium level - 39%;
low level - 13%.

The results showed that the high-achieving group increased by 27%, while the low-achieving group decreased by 22%. This confirms the effectiveness of the reading-oriented methodology.

The results of the statistical analysis confirmed that organizing reading activities based on innovative pedagogical methods had a significantly positive impact on the independent thinking competencies of primary school students. Interactive methods used in the pilot process, in particular problem-situational assignments, group discussions, role-playing games, reflexive Q & A, and library-oriented didactic activities, served to increase the cognitive activity of students. As a result, students were not simply passive recipients of the text, but active participants who analyzed it, evaluated its content, and drew personal conclusions.

The analysis showed that the interactive organization of reading activities developed, first of all, the skill of analytical thinking in students. Students learned to break down the content of a work of art or text, identify cause-and-effect relationships between events, evaluate the actions of characters, and logically analyze the development of the plot. This skill activated the students' logical thinking and formed a deep cognitive approach to the text.

Interactive methods also had a significant impact on the development of questioning competence. As a result of pedagogical observations, it was found that at the beginning of the experiment, students were mainly limited to answering questions posed by the teacher, but by the end of the experiment, they began to ask independent questions about the content of the text, the development of events, and the decisions of the characters. Questioning activity has emerged as an important indicator of students' intrinsic need for knowledge and intellectual curiosity. This shows that the reading process has become a research-based activity, not a reproductive one.

Another important result of interactive methods is the development of students' ability to express reasoned opinions. During the experiment, readers learned to interpret their views not only as a personal reflection, but on the basis of arguments from the text, the action of heroes or events in the plot. For example, "Why did the hero behave like this?" or "is this decision right?", they began to apply the stages of

proofing, reasoning, and inference. This situation is an important criterion in the formation of critical thinking in primary education.

The results of the pilot study also showed a significant increase in students' ability to find solutions to problem situations. Activities based on problem-solving tasks and plot situations developed students' ability to think alternatively, consider multiple solution options, and choose the most appropriate decision. Students demonstrated elements of strategic thinking, considering different perspectives, anticipating consequences, and evaluating problem situations.

A methodological analysis revealed that the innovative approach to organizing reading activities formed three important pedagogical components in students: reflexivity, interactivity, and cognitive independence. While reflectivity is manifested in students' analysis of their own thought processes, interactivity is enhanced through mutual dialogue, exchange of ideas, and collaboration. Cognitive independence, on the other hand, was expressed in the student's ability to process, analyze, and draw conclusions independently, relying less on external support.

Thus, the results of statistical and pedagogical analysis showed that the reading process has moved away from the traditional “reading–remembering–repeating” model and has become an educational activity focused on reflexive, interactive, and independent thinking. This approach helped develop not only the reading literacy of students, but also their intellectual potential, critical thinking, and creative approach. In this regard, an innovative methodological system aimed at developing independent thinking based on reading can be recognized as an important pedagogical tool that increases the effectiveness of primary education.

In conclusion, the results of the pilot study showed that the methodological system of teaching independent thinking based on the development of reading skills in primary school students is highly effective. The pedagogical process, based on the stages of clarification, formation, and generalization, significantly developed students' interest in books, independent reading, critical thinking, and analytical thinking skills. This methodological system is recommended as an effective innovative model for primary education practice.

Literature used

1. Shavkat Mirziyoyev. Strategy of New Uzbekistan. – Tashkent: Uzbekistan, 2021. - 464 p.
2. Kasimova K., Matjonová S. Native language teaching methodology. - Tashkent: Publisher, 2009.
3. Ishmuhamedov R., Yuldoshev M. Innovative pedagogical technologies in education and upbringing. – Tashkent: Nihol, 2016.
4. Tolipov O., Usmonboyeva M. Practical foundations of pedagogical technologies. – Tashkent: Fan, 2006.
5. Azizkhujayeva N. Pedagogical technology and pedagogical skills. – Tashkent: TDPU, 2014.
6. Begimkulov U. Modern information technologies in pedagogical education. – Tashkent: Fan, 2013.