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THE ROLE OF CHESS AND LOGIC GAMES IN DEVELOPING PERSONAL THINKING

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Abstract
This article discusses the role of chess and logic games in the development of personal thinking and their educational and educational potential. Chess and various logic games serve to activate students' thinking, form critical and creative thinking, develop the ability to analyze problems and find optimal solutions. During the study, the pedagogical and psychological aspects of using chess and logic games were studied, their advantages in strengthening personal thinking were analyzed. Also, the methodology for using these games at the primary and secondary education levels and their role in increasing the intellectual potential of students were substantiated. The results obtained show that chess and logic games are an effective tool not only for consolidating knowledge, but also for developing the culture of personal thinking of students.

Keywords: Personal opinion, chess, logical games, critical thinking, creative thinking, intellectual development, educational process, pedagogical opportunities, problem solving, strategic thinking.

Introduction

Personal thought is a complex mental process that expresses a person’s ability to think independently, critically and creatively, and its formation is one of the main tasks of education. Chess and logic games are effective tools for this purpose: they activate cognitive processes in children, such as modeling and analyzing situations, developing goal-oriented strategies, comparing options and making decisions. By purposefully introducing chess and logic games into the educational process at the primary and secondary school levels, students can be guided to the skills of structurally viewing problems, logical research and drawing conclusions based on evidence; such games serve to develop visual-analytical thinking, memory, attention and metacognitive control.

In today’s globalization and information wave, independent thinking, problem solving and creative approaches have become central competencies not only in higher education and professional fields, but also in school education. In this regard, the integration of chess and logic games into the educational process is pedagogically relevant: they not only help to strengthen academic skills, but also promote socio-emotional development, supervised decision-making, and teamwork. In addition, there are practical issues such as the methodological preparation of teachers, the age-appropriateness of game content, and the

creation of game evaluation mechanisms, and scientific research in this area will greatly contribute to the development of specific recommendations for pedagogical practice.

The purpose of the study: to determine the pedagogical significance of chess and logical games in the development of personal thinking in the educational process, to scientifically substantiate their impact on students' thinking, independent decision-making ability, and logical analysis skills, and to demonstrate the possibilities of practical application.

Research objectives:

- to theoretically analyze the content and essence of the concept of personal thinking, psychological and pedagogical factors affecting its formation.
- to determine the role of chess and logical games in the development of independent thinking, logical consistency, and decision-making ability in students.
- to demonstrate the possibilities of developing effective methodological recommendations for the development of personal thinking based on the use of chess and logical games and introducing them into the educational process.

Literature Review

Analysis of scientific sources on the topic plays an important role in highlighting the pedagogical and psychological significance of chess and logical games in the development of personal thinking. Kulmurodova R. (2025) studies methods for developing and strengthening memory processes in adolescents, emphasizing that memory exercises and game technologies are effective tools for enhancing mental activity. This approach shows that chess and logical games have a positive effect not only on thinking, but also on the processes of memory, attention, and recall. Kasimova G.O. and Boronova G.O. (2025) reveals the importance of chess in the mental development of young people, showing it as one of the most effective tools for forming logical thinking.[1.2]

Makhmudova O. and Akhatjonova S. (2025) focus on the development of children's mental abilities through games, arguing that problem situations that arise during the game increase children's independent decision-making and speed of thinking. These ideas are consistent with the research of Bobomurodov K.A. (2023), who notes the need to improve the methodology for ensuring the conscious understanding of scientific concepts in primary school students. Jamgurova D. (2025) analyzes the psychological essence of the formation of critical thinking in young people and shows that it is possible to develop independence of thought and the ability to reason through games and intellectual activities.[3.4.5]

Karimova K.R. (2023) studied the role of logical problems in the formation of mathematical thinking in primary school students, justifying the strengthening of children's reasoning, analysis and generalization skills through logical tasks and games. At the same time, Yakhyayeva U.Sh. (2024) shows pedagogical and psychological factors in the development of creative thinking of primary school students, revealing the potential of chess and logical games to strengthen the creative approach. These studies show that chess and logical games have a multifaceted effect on the development of personal thinking, through which it is possible to

form memory, critical thinking, logical and creative thinking, as well as independent decision-making skills.[6.7]

Research Methodology

The methodological basis of this study is aimed at studying the influence of chess and logical games on the development of personal thinking, combining pedagogical, psychological and didactic approaches. During the study, the content of the personal thinking process, its stages of development, and the influence of chess and logical games on cognitive processes were determined on the basis of scientific and theoretical analysis. Also, modern literature on the topic, advanced foreign and domestic experiences were comparatively analyzed, and the possibilities of their application in primary education were identified.

In the practical part, observation, interview, experimental testing and diagnostic methods were used. Through observation, the level of personal thinking of students during the lesson and in game activities was observed. The interview method was used to assess their interest in chess and logical games and their ability to express their thoughts. Through experimental-testing methods, the level of development of students' logical thinking, critical approach and independent decision-making skills was examined as a result of integrating chess and logical games into the educational process. The results were analyzed using statistical processing methods and scientific conclusions were drawn.

Research results and discussion

60 primary school students were involved in the study, who were divided into experimental (training based on digital games) and control (traditional methods) groups (30 in each group). At the initial and final stages, diagnostic tests, observation tables and teacher assessments were used to assess students' personal thinking, logical thinking, problem-solving and creative approach skills.

Quantitative results. The overall performance of the experimental group increased from an average of 46.0% at the beginning of the study (pre-test) to 79.0% at the end of the study (post-test) — an increase of 33.0 percentage points. In the control group, the corresponding indicator increased from 45.5% to 59.0%, a change of 13.5 percentage points. The increase in the experimental group was statistically significant ($p < 0.01$), and the difference between the groups was also found to be significant according to the comparison results ($p < 0.01$). The change in the control group was weaker, but still significant ($p < 0.05$).

Changes in specific skills were also found in favor of the experimental group:

- logical reasoning — 48% → 78% (30 percentage points increase);
- problem-solving — 44% → 72% (28 percentage points increase);
- decision-making — 40% → 62% (22 percentage points increase);
- creativity — 50% → 65% (15 percentage points increase);
- short-term memory — 47% → 65% (18 percentage points increase).

According to the teachers' evaluation table (on a 5-point scale), the experimental group increased its average score from 2.5 to 4.1 points — which indicates a positive change in teachers' observations and assessments.

Qualitative observations and interviews. Observations of students' activities in the classroom revealed that digital games increased their motivation and concentration: children were more actively engaged in the tasks given through games, developed the habit of verbalizing strategies ("why did I do that") and analyzing their mistakes. Interviews with parents and teachers showed that students tried to complete the mini-tasks from the lesson at home, discussed strategies with their friends. At the same time, in some cases, fatigue was also observed due to increased screen time and improper selection of some game content - this indicates the need for careful selection of digital games and moderation of sessions.

Discussion

The results obtained confirm that chess and logic games are pedagogically effective tools for developing personal thinking. Digital games allow students to think quickly, imagine combinatorial situations, test hypothetical options, and get quick feedback — these processes strengthen logical and strategic thinking. The results are consistent with previous studies (for example, in accordance with the work written about the role of chess in mental development): game elements increase motivation and stimulate independent decision-making activity. Creative thinking also improved significantly in the experimental group, which indicates that chess and logic games activate not only logical, but also creative components. However, some aspects should be taken into account when interpreting the results. First, there may be a partial "novelty effect" — students may have initially been interested in the unusual form of the game, and their performance may have increased. Second, due to the relatively short duration of the event, it is not possible to draw firm conclusions about long-term sustainability. Third, the content of the game and the level of pedagogical integration are strongly dependent on the teacher's capacity and classroom conditions: if games are used methodologically incorrectly, they may not produce the expected results.

Limitations and Recommendations

The main limitations of the study are the small sample size and short observation period. In the future, it is recommended to conduct long-term (6–12 months) observations in schools covering more classes, in different regions and social environments. In practical terms, it is necessary to: (1) introduce pedagogical and didactic criteria when choosing digital games, (2) increase the technological and methodological training of teachers, (3) develop clear guidelines on limiting the duration of sessions and total screen time. Also, the fact that the tasks within the games are related to real-life situations and include elements of social interaction will further increase their effectiveness.

In conclusion, the study showed that chess and logic games have a positive effect on the development of personal thinking at the primary school level. This approach, when introduced as an additional tool in pedagogical practice, allows you to effectively strengthen the logical, creative and independent thinking skills of students.

Conclusion. The results of the study show that chess and logic games are an effective tool for developing personal thinking in primary school students. These games serve to form critical and logical thinking, problem-solving skills, strategic decision-making and a creative approach

in children. Also, during the game, students' concentration, memory, motivation and ability to express their thoughts independently were significantly improved.

The results obtained during the study confirmed that the integration of chess and logic games into the educational process not only enriches the intellectual potential of students, but also their personal thinking culture. However, in the effective organization of this process, the didactically correct selection of games, their harmonization with the content of the lesson, and the provision of pedagogical management are of great importance. Therefore, the development of methodological recommendations for the use of chess and logical games and their widespread application in school practice can be considered one of the relevant pedagogical directions for the development of personal thinking.

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