

FROM HISTORY TO INNOVATION: DEVELOPING CHILDREN'S INTELLIGENCE THROUGH LOGICAL COMPUTER GAMES

G'ulomova Muxlisaxon

Doctoral student of Andijan State Pedagogical Institute

Abstract: This article highlights the impact of computer games on the intellectual and emotional development of children within modern education systems. Based on experiences in France and Russia, the educational and developmental significance of logical computer games for preschool children is analyzed. The benefits of game-based learning, the skills developed in children, and the role of computer-based motivation are discussed. The potential of games to foster patience, resilience, and independence is also explored.

Keywords: Logical computer games, preschool education, pedagogy, game-based learning, child development, information technology, French experience.

Introduction:

In modern education, the integration of information and communication technologies (ICT), particularly computer games, to support children's cognitive and emotional development is gaining popularity. In France, computer games play a significant role in educational programs for preschoolers. This article examines the role of computer games in developing skills such as patience, attention, curiosity, and literacy among children, based on experiences in France and Russia.

Main Part

According to modern researchers, children should be allowed to use computers starting from the age of 5. This process is connected to the development of a child's complex cognitive activities. Introducing computer games into a child's life at an early age may lead to the decline of traditional games.

In France, among educational programs, logical computer games that help children learn letters and identify words are widely used in preschool education institutions. The core principle of the program developers is "teaching through play." Observations by French researchers indicate that achieving good results in computer games supports children emotionally and facilitates their learning process. In older preschool groups, traits such as patience and resilience begin to develop through computer games—even though such traits are not typically expected at this age, they gradually form with the help of computers.

A child's engagement with computer activities is driven by several motives:

- Interest in novelty, especially in objects full of puzzles like computers;
- The motive of exploration (finding answers to unfamiliar questions);
- The motive to successfully complete tasks.

In the era of new information technologies, the methodological foundations of educational development have been examined by T.A. Vladimirova, T.P. Voronina, T.S. Georgieva, A.V. Zaporozhets, S.L. Novosyolova, F. Ibragimova, B. Yuldasheva, and R. Ayupova. A.V. Zaporozhets, in his work "Problems of Preschool Educational Games and Guiding Them for Educational Purposes," presented several examples of using computer games as a means of cognitive development in children.

In the book "Issues of Informatization in Preschool Education System" by S. L. Novosyolova, it is emphasized that the integration of computer games into the educational and upbringing process in preschool institutions as didactic and educational-methodical tools can positively influence the development of aesthetic taste, intelligence, and physical development in children. D.B.

Bogoyavlenskaya has scientifically proven that children engaged with specially designed computer programs demonstrate a high level of intellectual potential, creative abilities, and intelligence. Therefore, we can confidently say that computers, as part of information and communication technologies, have become an integral part of the learning process for children. This process is not only convenient for the younger generation but also provides modern young educators with extensive technological opportunities.

Looking back at history, the issue of introducing information and communication technologies into the education system at an early age was examined by the French educator Célestin Freinet. In 1924, he developed a methodology for teaching typography. Children used printing presses to write essays on free topics. In 1928, the cooperative of general educators called "Freinet Pedagogy" was established. This cooperative included educators who used new technologies in education, such as films, radio, and records.

In the mid-1980s, French researcher Rachel Cohen used computers equipped with voice synthesizers during sessions to develop written language skills in foreign and native languages for children aged 3 to 6. The results of her research showed that children's interest in computers was high, and the computer corner was never vacant. Compared to other activities, interactions with children were most intense during computer sessions.

Researchers like L.D. Chainova, Yu.M. Horwitz, I. Kalash, S.L. Novosyolova, T.K. Kashkina, D. Bardach, L.A. Paramonova, N.F. Talyzina, among others, have studied urgent issues of eliminating the negative effects of information and communication technologies on children. This trend aims to preserve the psychological and physical health of children.

Firstly, computer games must align with didactic principles, meaning they should demonstrate visual clarity, scientific accuracy, consciousness and activity, consistency and sequence, and should fulfill educational and developmental tasks.

Secondly, in addition to traditional didactic principles, researchers have also introduced specific didactic principles such as adaptability and interactivity. Every developed program must serve to enhance a child's intellectual potential.

Children's first interaction with computers typically begins with computer games. These games are considered animated programs with educational and developmental functions. In education, the term "computer games" refers to both instructional and developmental games. Thus, it is evident that computer technologies are not just a supplementary part of the educational process, but an indispensable one. Computer games help children reinforce the knowledge gained during lessons, enhance learning outcomes, and develop their intellect to the fullest extent.

The development of television, the emergence of electronic toys, and the integration of computer games into children's lives have led to the decline of traditional forms of play.

Existing educational computer games enhance children's memory and attention, increase their knowledge about the world, and provide opportunities to become familiar with letters. According to research findings by Swiss medical experts, children who use computer games for educational and developmental purposes acquire the following qualities:

- High speed of thinking;
- No sense of distance in relationships with peers;
- Ability to complete tasks according to a plan;
- Learn new information through observation.

Among adults, the question of which computer games help develop children's intellect remains a topic of ongoing debate. A home computer should be used solely for the child's development, not as a distraction to keep the child calm or to prevent them from disturbing adults. The content and structure

of each newly selected game should be discussed between adults and children. Joint discussions can serve as children's first research activity and help develop the following skills:

- Communicating with adults;
- Growing sensitivity and observational ability;
- Making correct choices;
- Expressing thoughts freely;
- Identifying problems and seeking proper solutions;
- Gathering information through small research tasks.

Educational computer games selected according to a child's temperament and age not only provide knowledge but also help shape their upbringing correctly. On the contrary, improperly chosen games may capture the child's attention excessively and lead to immersion in the virtual world.

According to C.L. Novosyolova and Yu.M. Gorvits: "Computer games do not replace traditional games but enrich the pedagogical process with new opportunities." To manage computer games effectively, a child needs a clear understanding, and their logical thinking and creative imagination must be developed to some degree. This allows the child to behave freely in front of the screen and to control their actions. A preschool child achieves such results primarily through the experience gained during gameplay. It is very important that computer games designed for children are closely connected to traditional games. In traditional play, a child expresses movements using objects, while in computer games, they act based on imagination.

S.L. Novosyolova emphasizes that "children's imaginations are embodied on the screen." While playing computer games, children learn how to plan and forecast their actions. They begin to think before executing a task. In developing children's intellect, the educational function of logical computer games is extremely important. These games help children build self-confidence, become independent, and, most importantly, ensure that their successes are recognized. Their self-confidence increases. Even shy or socially withdrawn children begin to express their emotions, share their thoughts and feelings with peers, and take pride in their achievements.

Logical computer games played during lessons strengthen a child's attention and memory. Because they are presented in a colorful and understandable form, they not only accelerate memory retention but also help in making it long-lasting. Logical computer games first appear in the form of play and later transition into the educational process. In addition to developing fine motor skills, these games also enhance the intellect of preschool children. While playing, children press different keys on the computer and find the right buttons—although this may seem simple, it simultaneously develops their intelligence, agility, and speed. Such gaming activities also help shape future skills such as neat handwriting and maintaining balance. Logical computer games not only broaden a child's thinking abilities, but also contribute to the development of fine motor skills, quick thinking, and precision-based actions. Through such games, children learn to maintain balance, strive toward goals, and approach their tasks with responsibility. As a result, these games play a crucial role in fostering useful skills not only for the present but also for the child's future. Therefore, selecting logical games wisely and using them purposefully can serve as an effective tool in a child's comprehensive development.

Moreover, logical computer games develop essential cognitive skills in children, such as independent decision-making and the ability to choose the right path in challenging situations. During gameplay, children learn strategic planning, which strengthens their analytical thinking and critical reasoning skills. Additionally, these games help build self-confidence, while the joy of achieving results motivates them to be more active and curious. Most importantly, this process teaches children to enjoy learning in a fun and creative environment, thereby fostering a positive attitude toward education.

Thus, logical computer games can become an effective means of fully unlocking a child's intellectual potential and preparing them for complex life challenges in the future. They also enhance skills such as concentration, attention to detail, understanding sequences, and time management. These games improve children's ability to comprehend cause-and-effect relationships, which proves useful not only during gameplay but also in real-life problem-solving situations. Another significant aspect is that logical computer games promote digital literacy in children. In today's rapidly advancing society, shaped by information and communication technologies, these skills lay the foundation for success in various educational and professional fields.

Methodology:

The author applied an analytical approach based on scientific literature and observations regarding the application of educational computer games. French pedagogical practices and Russian pilot studies were analyzed to examine motivational factors, didactic features, and effectiveness in children's learning processes.

Results:

Computer programs developed under France's game-based learning model allow children to recognize letters, distinguish words, and express emotional reactions. Through computer games, preschoolers begin developing patience, perseverance, and independent thinking.

Discussion:

The method of learning through play strengthens children's initiative and curiosity. Game tasks increase motivation and active learning participation. Success depends directly on the game content, the child's level of interest, and emotional state. Interactive and adaptive games developed by program authors significantly impact children's development.

Conclusion:

Using computer games as educational tools not only reinforces knowledge in preschoolers but also promotes their personal development. Evidence shows that when games are designed with didactic principles, they serve as powerful tools for fostering curiosity, patience, independence, and logical thinking in children.

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