

# Technology For The Formation Of Environmental Concepts In Senior Preschoolers By Computer

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**Abstract:** In this paper, the relevant topic of the use of ICT in the environmental education of preschool children is revealed. Since the computer is a necessary attribute not only of adult life but also the most important means of educating children, the question of the use of information and communication technologies in the educational process is indisputable. Modern children get to know ICT even before school and often even before they come to preschool educational organizations. In kindergarten conditions, it is necessary and appropriate to use ICTs in various types of educational activities, including environmental activities. The educational process in kindergarten has its own specifics: it should be emotionally saturated, with the involvement of large illustrative material, with the wide use of sound improvisations and video recordings. Such opportunities can only be provided to us by ICT. The use of ICT allows you to make the educational process more attractive and truly modern, to solve cognitive and creative tasks based on clarity. Advantages of ICT: arouses involuntary interest; involuntary attention is activated; improving the quality of knowledge by demonstrating a sample of activity; ICT is a powerful tool for the development of children, requiring careful preparation and organization in accordance with the age of children and the requirements of the time.

**Keywords:** ICT in environment, preschool education, integration technologies, integrative tasks, ecology teaching, interactive ways of teaching.

## 1 INTRODUCTION

Relevance of the problem and research topics. At the present stage of development of society, the importance of the formation of an environmentally oriented personality is growing, which in turn implies an increase in the level of ecological culture of children from preschool age. Meanwhile, the state of environmental education of preschool children is characterized by very significant gaps and underestimation of many of its links. In particular, the search for ways and means of improving the quality of environmental education in a preschool educational institution remains an important problem. One of such tools is a computer, which not only expands the possibilities for presenting educational information, but also actively involves children in the cognitive process, ensures the implementation of an individually-oriented approach to learning, greatly expands the range of applied methods of action, and provides flexibility in managing the cognitive process. Using a computer also allows you to quickly and objectively check the level of environmental representations of preschoolers, which is very important in the learning process.

## 2. MATERIALS AND METHODS

Despite the high developmental potential of the computer in education, it is limitedly used in the practice of preschool education. One of the reasons for the limited use of the computer is the insufficient development of the methodological conditions for its use in the system of environmental education and the lack of appropriate technologies.

**Thus, the relevance of the study is due to a number of factors:**

- social order for the formation of environmental representations in the child from the time of preschool childhood;

- the opportunity to improve the quality of environmental education of senior preschoolers through the use of modern computer tools;
- the need to design technology for the formation of environmental representations in senior preschoolers by computer and develop conditions for its implementation.

The degree of development of the problem and the theoretical basis of the study. The development of computer technology and the development of the theoretical foundations of information technology today has covered all stages of continuing education from preschool institutions to the continuing education system for specialists at all levels. However, the issues of using a computer as a means of forming environmental representations in older preschoolers were not the subject of a special study. We believe that the use of computer technology in the environmental education of older preschool children has a high pedagogical potential. This is confirmed by the development of environmental education. Environmental education as a complex problem of our time has become the object of attention of philosophical and sociological studies that consider environmental problems as universal. In recent years, the process of creating concepts and new programs in the field of environmental education of children has intensified significantly. This is because, from the standpoint of the humanistic approach, the existence of the only correct model of education is denied. The right to different approaches and models is recognized. Literature Review. Psychological and pedagogical, didactic and methodological approaches to the use of computer-aided learning technologies, and the introduction of computers in the educational process was considered in S. S. Akhrarov [1], B. S. Gershunsky [7], S. R. Domanov [5], E.I. Mashbits [10], O.K. Tikhomirov [15], N.R. Rustamova [13], as well as in a number of works by foreign researchers (A. Bork [4], T. Sakamoto [14], etc.). The problem of using a computer in the process of teaching children of primary school age was considered by Yu.A. Ivanova [9], Yu.A. Pervin [11], and others, preschoolers - I.G. Belavina [2], E.I. Bondarchuk [3], L.M. Gabdulislamova [6], N.T. Grinyavichene [8], G.P. Petku [12], D.I. Tsitskhvay [16], et al. The experience of using a computer in classes with children with a delay in speech and mental development was studied by L. M. Gabdulislamova [6]. The analysis of the lessons allowed to conclude that while learning on the computer, the

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child forgets about his temporary inferiority. The dissertation research of E.V. is devoted to the formation of interest in computer activities in older preschool children. Ivanova [9], and the pedagogical conditions for the cognitive development of older preschoolers in a directorial game using computer tools were considered in a study by G.P. Petku [12]. Theory and Discussion. Analysis of the existing programs of environmental education and upbringing of preschool children and analysis of computer programs for preschool children revealed the undeveloped technology that allows organizing the work on the formation of environmental representations in older preschool children by computer. Hence the contradictions between:

- the social significance of the formation of an ecologically oriented personality from preschool age and a low level of ecological knowledge of children;
- the need to implement individually-oriented training that improves the quality of education, and the insufficient development of appropriate technologies, in particular using a computer;
- theoretically justified necessity of computerization of education and insufficiently developed methodological conditions for using a computer in the practice of environmental education;
- significant developmental potential of the computer and its limited use in the practice of a preschool educational institution (DOE);
- the need for preschool educational institutions to use modern computer programs and technologies in the process of environmental education and the insufficient development of software and methodological support for this process.

From the above contradictions, the research problem arises, which consists in studying the design conditions for the technology of forming environmental representations in senior preschoolers using a computer aimed at increasing the level of environmental representations in senior preschoolers. The problem predetermined the choice of the topic of the dissertation research: "The technology of the formation of environmental representations in senior preschoolers by computer." The purpose of the study is to theoretically substantiate and experimentally verify the methodological conditions for using a computer as a means of forming environmental representations in older preschoolers. The object of study is the process of environmental education of children in a preschool educational institution. The subject of the study is the pedagogical technology of the formation of environmental representations in older preschoolers using a computer. The hypothesis of the study is that the technology for the formation of environmental representations in senior preschoolers will be successful if: an electronic textbook on the environmental education of senior preschoolers is developed; methodological conditions for the use of an electronic textbook on the formation of environmental representations among senior preschoolers were determined; developed an algorithm for the formation of environmental representations in senior preschoolers using an electronic textbook; A program of pedagogical monitoring of environmental representations in senior preschoolers was developed, including computer diagnostic tasks.

**In accordance with the goal and hypothesis, the following research objectives were outlined:**

1. To analyze the theoretical foundations of the formation of representations in preschool age.
2. To determine the methodological conditions for using a computer in the process of forming environmental representations among senior preschoolers.
3. Develop an electronic textbook on environmental education for preschoolers.
4. Create a technology for the formation of environmental representations in senior preschoolers using a computer, check the effectiveness of its use in the course of a pedagogical experiment.
5. To develop a program of pedagogical monitoring of environmental representations in senior preschoolers, including computer diagnostic tasks.

The scientific novelty of the study is that: -the electronic textbook "Journey to Planet Earth" on the environmental education of older preschoolers was developed and conceptually substantiated;

- methodological conditions for using a computer as a means of forming environmental representations among senior preschoolers have been scientifically substantiated and experimentally verified;
- the technology for the formation of environmental representations in senior preschoolers by computer was designed;
- A program of pedagogical monitoring of environmental representations among senior preschoolers was developed, including computer diagnostic tasks.

The theoretical significance of the study lies in the fact that methodological conditions are identified that contribute to the successful formation of environmental representations in older preschoolers by computer; The model of the electronic textbook on environmental education of senior preschoolers is theoretically grounded. The practical significance of the study lies in the development of an electronic textbook, Journey to Planet Earth, on the environmental education of older preschoolers; in creating technology for the formation of environmental representations in senior preschoolers by computer; in the development of computer diagnostic tasks to determine the level of environmental performance in senior preschoolers; in creating technology for the formation of environmental representations in senior preschoolers by computer; in the development of computer diagnostic tasks to determine the level of environmental performance in senior preschoolers; in the development of the program of the special course "Computer Technologies in the Environmental Education of Preschool Children" for students of pedagogical universities. The results of the study can be used in the system of training and retraining of teachers of DOE. The validity and reliability of the results of the study is ensured by the choice of scientific methodology, the use of the achievements of psychological and pedagogical sciences, the integrated use of empirical and theoretical methods adequate to the subject, purpose and objectives of the study, representativeness of the samples and experimental data, a combination of qualitative and quantitative analysis, long-term and multifaceted nature of the study.

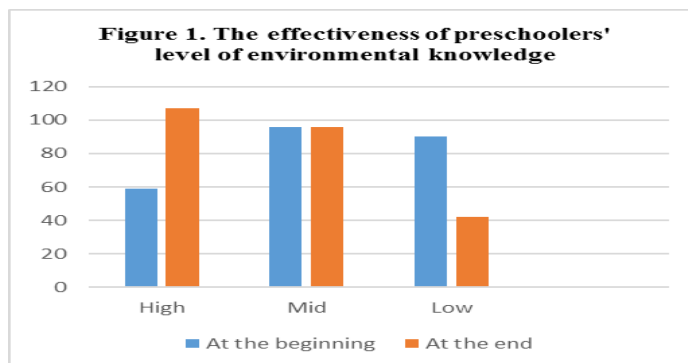
### 3. EXPERIMENTAL RESULTS

To test the hypothesis and solve the tasks, a set of research methods was used, mutually checking and complementing

each other: theoretical analysis of philosophical and psychological-pedagogical literature; diagnostic methods: questioning, testing, interviewing; experimental: stating, formative, control experiment; praximetric: analysis of performance, study and generalization of the work of teachers; prognostic: expert assessments, self-esteem, modeling); methods of mathematical statistics - processing of results according to K. Pearson. The results of the study with the preschoolers of Andijan, Tashkent and Jizzakh provinces. The first stage of the study, ascertaining, was the study of various aspects of the problem, conducting a search experiment and included: selecting a topic, substantiating central ideas, main goals and specific tasks of the research work; theoretical analysis of philosophical, psychological and pedagogical literature on the research problem, as well as dissertation works close to the problem being studied, in order to determine the methodological and theoretical basis of the study; development of a strategic research plan, one of the points of which was the organization of a search experiment; the study of mass and advanced pedagogical experience of teachers, reflecting the degree of development of the problem of using computer technology in the education of children of preschool 9 and primary school age; identification of opportunities for the successful use of computer technology in the process of environmental education of children of preschool age. In addition, diagnostic indicators are formulated to determine the starting level of environmental awareness among senior preschoolers, and computer tests have been created on their basis; A stating experiment was conducted, its results were analyzed. The second stage of the research, forming, consisted in the development of a model of an electronic textbook as a means of forming representations in older preschoolers; in creating and putting into practice the electronic textbook "Journey to the Planet Earth" on the environmental education of senior preschoolers; in determining the methodological conditions for using the electronic textbook, as well as in the development and implementation of technology for the formation of environmental representations in older preschoolers by computer. The third stage of the study, the final one, consisted of conducting the final stage of the pedagogical experiment, analyzing the results, including evaluating the effectiveness of the technology of forming environmental representations in older preschoolers using a computer; development of a special course program "Computer Technologies in the Environmental Education of Preschoolers"; registration of a dissertation.

**Table I.** The results of the experience of the experimental group to determine the effectiveness of preschoolers' level of environmental knowledge

The period of the experiment	Number of preschool children	Levels of mastering		
		High	Mid	Low
At the beginning	245	59	96	90
At the end	245	107	96	42



The results of interviews conducted at the beginning and end of the experiments in the experimental and control groups and the results of the free classification were identified. From the results, it can be seen that the criteria for evaluating the effectiveness of teaching are more than one and that the evaluation of the perception of the world is greater than zero. It is evident that the experimental group scores are higher than those in the control group.

#### 4. CONCLUSION

Based on the content and conclusions of the study, we can see that the computerization of modern society requires the improvement of the entire education system, and, as part of this, the development of technology for using computer tools in the process of forming environmental representations among senior preschool children. The study and analysis of practical activity indicates that modern preschool educational institutions do not have software for using computers as an active means of forming environmental representations in older preschoolers. We have developed a model of an electronic textbook, on the basis of which an electronic textbook on the environmental education of senior preschoolers has been created. The introduction of this textbook into the practice of DOW confirms the hypothesis formulated in the study, proves the correctness of its postulates and allows us to formulate general conclusions:

1. The degree of development in pedagogical theory and practice of the problem of the use of computer technology in the education of older preschoolers is analyzed. It is shown that the problem of using a computer in the environmental education of older preschoolers is not sufficiently developed in pedagogical and methodological science. This was one of the reasons for the lack of technology for the formation of environmental representations in older preschoolers by computer.
2. The methodological conditions for the use of an electronic textbook as a means of forming environmental representations among senior preschoolers have been identified: a computer is used as an active tool; a combination of traditional and computer methods of cognition of nature; methodological support, built on the basis of systematic, visual, individuality and including a curriculum, didactic materials (texts, illustrations, photographs, etc.), modeling PowerPoint package;
3. A technology has been developed for the formation of environmental representations in senior preschoolers using computer tools, which includes an explanatory and

motivating stage (preschoolers were introduced to the elements of a personal computer, with specific features of working on a computer), the stage of formation of environmental representations (familiarity of preschoolers with environmental representations, with opportunities search for the necessary information inside the electronic textbook), the diagnostic stage (the dynamics of the formation of ecologists visual representations, degree of freedom when working with an electronic textbook);

4. Pilot work was carried out to verify the effectiveness of the formation of environmental concepts in older preschoolers through the use of a computer. Statistical processing of experimental data and generalization of the results led to the conclusion that the introduction of the developed technology contributes to a more successful formation of environmental representations in older preschoolers through the use of a computer.

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