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Zankov system of elementary education

Sistema Zankov do ensino fundamental

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Abstract: O Conference Paper reviews the Zankov system of elementary education by analyzing programs and textbooks. This paper shows the integrated approach of the Zankov system for learning. Within the subjects of literature, natural science and history, music and fine arts, the theme of metamorphosis of butterflies is used to make a connection between the School subjects. The importance of ecological education is emphasised and demonstrated in the Zankov system.

Keywords: Zankov system. Elementary education. Textbooks.

Resumo: O *Conference Paper* analisa o sistema Zankov de ensino fundamental a partir de programas e livros didáticos. O artigo mostra a abordagem integrada do sistema Zankov na aprendizagem. Dentro dos temas de literatura, ciências naturais e história, música e belas artes, a metamorfose das borboletas é usado para estabelecer uma conexão entre as disciplinas escolares. A importância da educação ecológica é enfatizada e demonstrada no sistema Zankov.

Palavras-chave: Sistema Zankov. Ensino fundamental. Livros didáticos.

Conference Paper

Zankov system of developmental education was created 60 years ago. Leonid Vladimirovich Zankov (April 10, 1901 – November 27, 1977) was among the first and closest disciples of Lev Semenovich Vygotsky (November 5, 1896 – June 11, 1934). Vygotsky studied the relationships between teaching, learning and child development. He concluded that teaching and learning lead development. He described a new and exceptionally important concept, the zone of proximal development. Zankov was the first to test Vygotsky's theories by conducting experimental research in Russian elementary Schools. Nowadays an official name of the Russian Federation. However, until 1991 there was another name: Soviet Union, that was a political union formed together with another

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Soviet countries at that time. His aim was to determine the nature and degree of influence that teaching methods had on the general development of students in primary grades.

The significance of teaching derives from the fact that it creates the zone of proximal development, i.e., stimulates a child's interest in the environment which in turn awakens internal developmental processes. Once kindled, development will evolve only through interaction with real surroundings and within the context of peer relationships.

In Zankov's system, development is achieved through the realization of the many components that constitute his system. The directing and regulatory role in this system is played by its didactic principles which "grow out of its guiding idea: to make teaching as effective as possible in promoting the general development of School pupils".

The goal of elementary School education in Zankov's system is the general development of a child, which is the development of various sides of a child's psyche. It includes intellect, will, and emotion. The material basis of the general development is the content, which consists the facts and phenomena in their essential connections.

It is important to pay a deep attention to the construction of educational process, the selection of the content, to principles, technique and methods of teaching. It is important to provide a careful attitude to the child's inner world – his/her age and individual characteristics, children's needs and interests. Zankov defined the main task of education - to provide the child with a broad, integrated vision of the world with the means of science, art and knowledge.

Elementary School age is a period of intensive discovery of the world and nature, accumulation of knowledge and concepts, and the development of multifaceted relations to everything around. All subjects at School should contribute to the environmental

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education of children and the formation of environmental responsibility of children. The integrated lessons contribute to this. They implement different levels of connection - meta-subject, inter-subject and subject-matter.

Ecological education is the formation of a high ecological culture of all types of human activity among the broad strata of the population, related one way or another to cognition, development, and transformation of nature. The main goal of ecological education is to give the knowledge of the laws of living nature, to develop the understanding of the essence of the relationship of living organisms with the environment, and to form the skills to manage the physical and mental state. Education is not just learning about the facts, it is a process of the deepening of our humanity, and equipping children to help in the shaping of society and our world. It is known that ethics of attitude to people and ethics of attitude towards animals have the same psychic basis - the ability to empathize.

There are great possibilities of fine arts lessons in the ecological education of elementary School students. Fine art is one of the kinds of artistic education of children by means of painting, drawing, sculpture and applied art. Art activity is a productive activity, the result of which is the creation of a specific product by the child.

In our work we use the subjects programs of Zankov system of developing education. The course of "Natural science and history" was created by Dmitrieva, Tovpinets and Chutko.

It acquaints students with the culture of the peoples of Russian, pursues the idea of their equality and importance. Students learn about the heroism of people of different nationalities, history of their homeland and native land from ancient times to the present. From grade 1 to grade 4 children learn a broad, integrated picture of the world with its internal interrelationships between different fields of knowledge about nature, man,

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society in their historical development. These themes are supported by the courses of literature, Russian language, arts and technology.

The program and textbooks on the subject “Natural science and history” at Zankov psychological-pedagogical system represent the integration of the educational fields of natural science and social science. Analyzing the textbooks “Natural science and history”, we see that the number and level of the relationships considered by the child are constantly increasing. According to Zankov, they are gradually forming an increasingly dense network. The course develops in a spiral. There is a constant change of the object of study and at the same time a constant return to it at a new stage and on a new knowledge base. We call it Concentric principle of the disposition of the educational material.

In grade 1, about theme “Cosmos”, a process of forming the concepts of Universe, cosmos, star, planet, satellite is taking place. Students learn that the Sun is a star, the Earth is a planet, and the Moon – the satellite of Earth. In the textbook there are pictures of Solar system and planets, as children learn about them. The game “What is odd?” helps to generalize and systematize the knowledge gained in the lesson. Then our planet Earth is examined in detail. Students perform the experiment which explains the change of day and night, the alternation of seasons on Earth. Children realize how important the Sun is for our planet Earth. Through the game experience “Catch the Sunbeam”, students understand that the planets and the moon reflect sunlight, which helps them to understand why the planets shine. It will help them in the future (in the 2nd grade) to understand why we see different forms of the Moon - from a new moon to full moon.

The following topics of the first grade textbook logically go on to the continuation of the conversation about the conditions of life on Earth – “The Importance of Water on Earth” and “The Importance of Air on Earth”. Subsequent themes “Diversity of Nature”,

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“Dependence of plants on natural conditions”, “Variety of plants and animals” allow children to establish cause-effect relationships between time change of a day, the seasons, the amount of sunlight and heat, and the unique nature of Earth.

Knowledge of these topics will build a basis for studying the section “We are part of the world around us”: “We live in different nature conditions”, “We live in different time of the day” in the textbook of grade 2. This textbook begins with consideration of the main difference between the Earth and other planets of the Solar system - the existence of life on it. Comparing modern nature with the nature of the Ice age, children make conclusions about the importance of solar heat for living conditions on our planet.

The first grade textbook is propaedeutic. In the following years, all the topics laid down in it are developing. The first page of the 2nd grade textbook “Natural science and history” contains the image of the Universe, the Sun and all the planets. There are questions under the image. It helps to actualize children's knowledge of the cosmos. The theme “Enigmas of the Earth” continues the conversation begun in the first grade about the origin of life on Earth and brings the pupils to a new level, a new knowledge base. The theme “Russia - the homeland of cosmonautics” supplements the knowledge received earlier by children. Based on the Earth images obtained from space, the authors of the textbooks describe the continents, oceans, poles, and thermal belts of the Earth, supplementing the knowledge of children.

In the 2nd grade theme “Cosmos” continues. Children get acquainted with the science of astronomy. Deeper information is given about the cosmos, the solar system, and the star Sun. Students do the experiment with a tellurium again but at the new level. They observe the illumination of a specific area and the change there of day and night. Students observe the place and time of sunrise and sunset, the length and direction of the shadow of objects illuminated by the Sun. These experiments help to develop the ability to determine the time of a day without watch. Children learn to distinguish the noon of a summer and winter

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day according to the position of the sun on the sky. At a new level, with the actualization of the first grade knowledge, information about the stars and planets is given. Children learn about the Polar Star and the constellations, for example constellations Ursa Major and Ursa Minor.

In grade 2 students are learning more about the Moon, its phases. They recollect that the Moon revolves around the Earth, and the Earth - around the Sun (at a speed of 30 km per second). Tasks help to systematize the gained knowledge, like “please, write your address in the Universe” or “please, tell about the importance of the Sun for the Earth”. Further, the authors of the textbook logically pass to the theme “Planet Earth”. The textbook contains a glossary of terms, among which there are concepts of atmosphere, biosphere, galaxies, solstice days, stars, space, constellations and others.

The main content of the 3rd grade textbook is the study of various natural conditions on the Earth (natural zones and communities), people's lives, people's occupations in the period from the birth of mankind to the beginning of the New Time. From the man point of view a mutual connection is considered: man-nature, adaptation of living organisms and human to the certain natural conditions. The dependence of weather, climate, seasonal changes on cosmos, the influences of some phenomena and processes occurring in space (for example, flares on the Sun) is established.

In the 4th grade the relation “human-nature” is enriched by the third component: the world created by man. There are several aspects of ecology considered: human ecology; environmental problems arising of the relationship between man-nature, man-civilization. The theme “Cosmos” continues at a new level in the section "Development of Science", which deals with the setup of the Universe. Students get acquainted with the concept of the heliocentric system of the world, with scientists Nicolaus Copernicus, Giordano Bruno, Galileo Galilei. The task "Organize a competition for the best performance of the drawing

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or layout of the Solar system" implies a generalization of what was learned. Acquaintance with scientists continues with the study of universal gravitation and gravity, with seeking the answers to questions such as "why do objects fall down? Students learn about Isaac Newton and Konstantin Eduardovich Tsiolkovsky.

Analysis of the textbooks shows that the content of the course is not absorbed in static, but in development. The cognitive activity of the child is directed to an independent comprehension of the interrelationships, interdependencies between objects and phenomena of the surrounding world. The content of the textbooks reflects the necessary educational minimum, but at the same time it presents a variant part that expands the content, taking into account the capabilities of the class and the students.

The program of Fine arts of Zankov system was created by Ashikova. The aims of the Fine arts in this system of elementary education are the spiritual and moral development of the personality of the student, the development of his/her value attitude to the beautiful on the basis of enriching the experience of emotional value perception of life phenomena and the experience of artistic and creative activity. Among these tasks we identified those that are closely intertwined with the tasks of ecological education of children: the development of an emotional-aesthetic attitude to the events of life; the development of the value respect to the domestic cultural traditions; the formation of the ability to perceive the beauty on the basis of the notion of beauty as the highest manifestation of good; the expansion of the general and artistic ken of students; the development of ability to observe the events and processes occurring in the surrounding world, and a holistic perception of complex objects and phenomena.

The combination of, on the one hand, aesthetic perception of life and artistic perception of art and, on the other hand, artistic expression will contribute to the formation of the emotional-value relationship of a growing person to him/herself, to people around him/her,

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to nature, science, art and culture in general. Fine art creates the conditions for the formation of a value attitude to nature and the environment, ecological consciousness through familiarity with various phenomena and states of nature.

It is known that nature is the main artist, laying the foundations of drawing and graphics. The relationship between man and nature is one of the main themes of fine art. In the visual activity, as well as in environmental education, we distinguish the stages: obtaining knowledge, observation, the formation of concepts, activity, creativity, objective and personal results.

The lesson "Drawing to the sounds of nature" is interesting. The teacher offers students to listen to melodies with the sounds of nature. Children, with their eyes closed, imagine different pictures. Then they share their impressions, tell us what they could imagine, and begin to draw. The music is still playing.

In lesson at the zoo, children can observe the animals at the zoo or watch a video about the animals. They can choose one animal, for example a hedgehog, and observe it. Then students search for the information in books and encyclopedias. They learn about how important the hedgehog is and how important it is to protect it. At the lessons of fine art children make an image of hedgehog using a salted dough, and later color it.

The next interesting project is the creation of an emblem on the topic of protecting the world around us. The teacher and children discuss the questions of nature protection, talk about what kind of harm people do to nature and how to deal with it. Children think about the content of the emblem of nature protection, and draw it.

The lesson "Spring and Autumn, welcome" is aimed at the formation of the following universal educational activities of elementary School students. Personal, an understanding of the beauty of the surrounding world at different times of the year, careful

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attitude to nature, the manifestation of interest in the task. Regulatory, an understanding of the task, the choice of work execution option. Cognitive, the ability to analyze the objects in order to identify their essential characteristics.

All classes of fine art provide a close connection with music, literature, and nature, which contributes to the emotional mood and deep perception of the world around us. Of great importance is the teacher's ability to integrate the content of educational programs during the lessons planning. It ensures the interconnection of all classes and the integrity of educational process.

Let us briefly consider the implementation of the integrated approach in the formation of the concept of "metamorphosis", more specifically "metamorphosis of the butterfly". The grade 1 is about lesson of Russian literature. The fairy tale by Berestov "Honest caterpillar" begins with a riddle: I am a worm and eat a leaf. Soon I will wrap myself and fall asleep, will not eat and not look, just lie motionless. But suddenly I will come to life and leave my house.

Some children immediately determine that the mystery is about the caterpillar, which turns into a butterfly. The described in the fairy tale of Berestov transformations aroused great interest among children. We decided to study metamorphosis.

At the lessons of Natural science and history students learned more about caterpillars and butterflies, and the concept of "metamorphosis". They found that word "metamorphosis" is the ancient Greek word, and means "transformation". Then students were reading the definition of "metamorphosis" in dictionaries and various reference books.

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We were convinced that during the metamorphosis of butterflies in the process of transformation, the forms of the insect change and they are completely different from each other. From the round egg appears a long caterpillar with many legs. It slightly changes its color several times, it molts, and turns into an almost oval chrysalis. A butterfly emerges from the chrysalis - a winged adult insect with six legs. As it was in the fairy tale of V. Berestov described.

In lesson of fine art, after watching a video about the process of development of butterfly students using plasticine created images of eggs that butterflies lay, and placed them on the plasticine leaves. Then the caterpillars ‘hatched’ from these “eggs” were sculpted.

Students read a lot about caterpillars and butterflies, their different kinds, learned about the largest, smallest and the most beautiful butterflies. They created the stencils and coloring books of butterflies. Children invented fantastic butterflies with an unusual coloring. In this case, the monotype technique was used.

Thus, all of the lessons helped to form the concept of “metamorphosis of the butterfly” and clear ideas about its stages. The formation and development of concepts is a long process, in which the concept is enriched by all new characteristics with constant introduction of a new knowledge, comprehension of it and its connection with existing knowledge.

The organization of children’s learning activity is the main condition for the mastering in the School programs of the Zankov system of developmental education. Only one's own activity can cause an emotional-value attitude to the events, facts, phenomena that are being studied, thereby realizing the educational possibilities of the course.