

## IMPROVING THE KNOWLEDGE OF ECOLOGICAL CONTENT IN PUPILS IN INTERDISCIPLINE FOR TEACHING BIOLOGY

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**Annotation:** This article states the introduction of interdisciplinary knowledge in the educational process, the importance of knowledge acquisition, improving the ecological knowledge of pupils in the interdisciplinary teaching of biology, creating problematic situations, as well as harmonizing nature and society in secondary school curricula. issues of interdisciplinary communication, ecological thinking of pupils, their worldview, behavior, general culture, environmental protection in the teaching of biology, chemistry and physics, the content, forms, teaching methods of interdisciplinary communication, all of forms of teaching in the development of pupils' ecological thinking in the teaching of biology in synchronous and asynchronous connection with the natural sciences: lessons, extracurricular activities, excursions in connection with chemistry, physics identification of opportunities for the development of thinking, the development of pupils' ecological thinking in the teaching of biology in synchronous and asynchronous connection with the natural sciences, conscious use of previously knowledge, skills, and competencies in the natural sciences in new actions, the content of natural science education, the integration and integration of knowledge in various disciplines studying the problems of human - nature relationship are described using modern educational technologies.

**Key words:** Interdisciplinary integration, natural sciences, biology, ecological thinking, knowledge, development, school, pupils, lesson, form, method, tool, ecological culture, synchronous, asynchronous, skills, qualification, nature, society environment, human and nature.

### Introduction.

Consequently, integrated education provides a new approach to the content of science - based knowledge in schools, and its main goal is to form a holistic scientific view of the world and society in the minds of pupils, to form a scientific understanding of nature and the role of man in it and it consists of the compilation of scientific insights and knowledge about the role of man.

Knowledge of the surrounding nature has an influence on the comprehensive development and upbringing of pupils. Through the study of this knowledge, pupils try to identify the factors that cause environmental problems by analyzing the relationship between nature and man, the nature of their interconnectedness and unity, their relationship to the environment, the behavior of nature conservation. This action creates the basis for the formation of interdisciplinary knowledge and concepts in pupils.

This opportunity is supplied on the basis of an interdisciplinary approach. It can be seen both as a form of integration of academic disciplines and as a method of synthesizing subjective new knowledge. The interdisciplinary approach is considered to be the most optimal direction for the science of biology in the integration of general education and natural sciences. The result of the integration of academic disciplines is based on the conceptual idea that the acquisition of new subjective knowledge that cannot be formed when disciplines are taught without interconnection.

In particular, it is one of the leading natural sciences - biology has a very responsible role in shaping the scientific outlook of pupils. Therefore, the content of both school biology curriculum has great potential in shaping the scientific worldview in pupils. In teaching biology, first of all, it is necessary to acquaint pupils with the basic concepts, ideas, theories, laws of biology, their role in various sectors of the economy, the importance of biological knowledge, to use pupils' knowledge of chemistry and physics in problematic situations. An educational system is created, which is inextricably linked with the formation of ecological thinking in pupils and the formation of a conscious attitude of man to nature and society [7].

### Materials

This system combines the issues of formation of scientific outlook and ecological thinking, spiritual, moral, patriotic, ecological, aesthetic, economic, physical, hygienic, labor and international education of pupils, as well as the solid mastering of the basics of science by pupils.

In the interdisciplinary teaching of biology, the principles of selection of materials on the content of improving pupils' knowledge of the ecological content were required. In this case, mainly in the interdisciplinary teaching of biology, the interaction of materials in the context of the development of ecological thinking in pupils is considered. This can be done on the basis of didactic principles.

So, based on didactic principles, to ensure interdisciplinary relevance in addition to the curriculum materials in biology; it is possible to add the required amount to each training material. Its structure and effectiveness in training; the relevance of theoretical teaching materials to practice; it is necessary to take into account and analyze the extent to which pupils are able to master the materials provided by them, taking into account their age characteristics, and to illuminate the essence of the concepts related to the formation of ecological thinking.

Integrated education primarily involves the convergence, integration, and integrated teaching of disciplines that are close and compatible with each other. The integration of educational content is of great importance for both the teacher and the pupil, is one of the important factors in improving the quality of education, improving the activities of pupils, activating, strengthening their knowledge, stimulating them and self-development [13].

The implementation of ecological knowledge in the interdisciplinary teaching of natural sciences in the educational process should be considered as a natural process of their development and a factor in the development of pupils' scientific outlook and thinking.

In particular, I.I. Fazilziyanova's dissertation on "Formation of ecological and geographical culture through the integration of social sciences in high school pupils" discusses the existence of certain interconnectedness and complementarity between the humanities, in particular, the social sciences. The social sciences include history, sociology, geography, economics, and law. It is proposed to coordinate these disciplines from the point of view of ecological thinking [21].

According to M.T.Gafurov's research work, he proposes the issue of strengthening ecological knowledge by integrating the process of teaching related sciences on the basis of ecological goals and directing them to a single, mutually beneficial goal [4].

A.Y.Danilyuk states that the concept of integration is introduced in the context of pedagogy, but the pedagogical supplement, which is not sufficiently meaningful, does not provide to speak about it as a sufficiently well-founded scientific and pedagogical concept [6].

The term pedagogical integration - the concept, according to scientists, refers to the explanation, prediction of certain forms of integration and their management in accordance with its objectives within the subjectivity of pedagogy. V.S. Bezrukova claims this rule and describes it as a type of scientific integration carried out in the framework of pedagogical theory and practice [2].

"Environmental Education in Biology Subject" by M.Nishonboeva's textbook focuses on interdisciplinary links in biology lessons, the use of physical concepts and laws in the teaching of biology, the formation of biophysical concepts in pupils, the conscious and deep mastery of knowledge in natural sciences. It consists of an integrated system of scientific knowledge about nature and society, their interdependence, the laws of nature. It was noted that it is expedient to use environmental issues in the organization of lessons based on the interaction of biology, chemistry and physics [16].

In the research work of E.O.Turdikulov claimed the problem of integrated teaching of natural sciences, which is considered to form a whole about the universe, the integration of education is a high level of interdisciplinary connection, a tool that allows to create a whole integrated knowledge [20].

R.H.Djuraev's research work states on one of the most important problems of education, namely the integration and stratification of knowledge. In particular, according to the scientist, integration serves to establish structural connections between different systems of knowledge, to generalize them, to form a holistic view of pupils about nature and society.

So the history of human development, all cases of conscious attitude towards nature or harm to it have been regulated by spiritual-moral norms. At the intersection of the interests of nature, man and technology, a person's level of education and upbringing is measured by moral and spiritual maturity and thinking [8].

Ecological culture is constantly learned to secondary school pupils in the natural sciences, as well as through extracurricular and out-of-school educational activities, biological knowledge of the environment, plants and animals is instilled in children in the context of interdisciplinary connections.

It is known that the subject "Biology" is the main subject of teaching the basics of ecology. These disciplines play an important role in the formation of ecological knowledge, ecological thinking and ecological culture. It is necessary to acquaint pupils with nature, to keep abreast of various environmental events.

Scientist S I.D.Zverev claims that in order to be ecologically cultured, everyone must first acquire ecological knowledge, then - moral values in relation to nature, and finally - practical skills and abilities to protect and improve the environment. According to the scientist, the prevention or elimination of negative impacts on nature is a key indicator of environmental culture [7].

According to L.A.Mukhtarova, environmental problems have become a global problem. Therefore, the solution to this problem is not one or two states, but many countries that care about the balance of the world around us. The current environmental crisis in various parts of the globe means that we need to treat nature properly and pay more attention to it. In particular, the solution of this problem has risen to the level of state policy in our country [14].

The integrity of pupils' worldview, the interdependence of objects and events in the objective world means the interdependence of nature, society, technology, man through interdisciplinary interdependence in this educational process.

In the interdisciplinary teaching of biology, the following tasks should be performed in the formation of ecological knowledge in pupils:

1. Acquisition by pupils of scientific knowledge about the integrity of nature, the relationship between society and nature, the acquisition of environmental knowledge, skills and competencies that form the basis for the formation of a conscious attitude towards nature.
2. To explain the broader significance of nature and its components, and to distinguish between renewable and non-renewable resources.

3. Measures taken for the economical use of natural resources, protection of the environment, landscaping and reproduction of natural resources, the formation of motives for active participation in socially useful work. The conditions for the logical development of the curriculum in the interrelated are:

- to establish the connection between the objects considered in different educational disciplines;
- to establish the connection between related laws and theories;
- to organize of the relationship between psychological, pedagogical and philosophical knowledge, as well as methodological methods and techniques of education.

The possibilities of integrating general education, as well as special categories of sciences, are embodied in their content, which expresses knowledge about the environment, which is unique in nature. Today, it has become a requirement of the time for pupils not only to have in - depth knowledge, but also to develop their professional skills through the acquisition of skills.

One of the important factors of the effectiveness of education is the effective organization of educational activities, the correct use of various methods, techniques, tools in the classroom, their application in an integrated manner. This is done through integrated learning [1].

The following should be given into account when teaching through the integration of disciplines:

- each lesson should be goal-oriented;
- the selected additional material on interdisciplinary connection must be connected with the subject;
- it is possible to identify ways to work with pupils in order to increase their activity;
- the lesson should be not only educational, but also aimed at educating pupils in the humanities;
- based on the content of the topic, scientific knowledge about nature, society, human thinking, development, should be aimed at forming confidence and faith in the future of our country.

Such technology teaches pupils to imagine the world differently, not to memorize the theoretical rules of connecting practice with life, to understand the harmony of the individual and society, to achieve diversity of opinion, non-standard thinking, as well as to understand ways of self-development.

The advantages of the integrated course are:

1. In this type of activity, the child begins to imagine the world as a whole.
2. The child's potential develops, he begins to study the environment with great interest, the events begin to search for a logical reason in the mind . As a result, the ability to communicate, compare, generalize, and draw conclusions develops.

Integrated lessons teach children to understand the nature of the whole worldview, the coherence of events. The science of technology can be inextricably linked with the subjects studied at school, and the educational and creative nature of labor is realized through the use of scientific knowledge [25].

Integration serves to unite all the components of the educational process (content, form, methods and tools) into a single system. In addition, it is an important factor in ensuring the quality and effectiveness of education [19].

The intellectual development of the pupil's personality, in-depth, specialized teaching, increasing their scientific thinking and intellectual potential is a topical issue today.

In order to identify unexplored aspects of interdisciplinary links in the educational process, the research work of a number of pedagogical scientists on this issue was studied in detail. It consists of the study of unexplored aspects of interdisciplinary relations on the basis of approaches that do not contradict the theoretically recognized laws.

The interdisciplinary teaching of biology to secondary school pupils was approached in accordance with all applicable laws of education in the study of the state of development of pupils' ecological thinking. It has been didactically substantiated that the phenomena of learning, teaching and learning are interrelated and content-oriented activities.

It is aimed at shaping the content of general education, humanizing the teaching of all school subjects, ensuring the strengthening of socio-economic aspects.

General sciences such as biology, chemistry, physics are aimed at vividly reflecting the deep human nature of our society. It consists of a combination of one and the adjacent disciplines, major ideas, factors in one academic discipline.

The content of general education is aimed at the comprehensive spiritual development of pupils, the development of different thinking in them. The study of each subject allows the pupil to create a mental focus that activates the process of understanding the material, remembering it, activating sensitivity, developing thinking, speech and imagination. It is especially important to develop types of thinking that are inextricably linked to each other in the process of learning.

The use of interdisciplinary communication mechanisms is of great practical importance in the development of independent thinking skills in pupils. By summarizing the ideas and knowledge generated in the process of studying biology, pupils develop certain skills and competencies on the basis of interdisciplinary connections in the natural sciences.

Therefore , the phenomenon of interdisciplinary connection in the learning process is a complex and multifaceted didactic process. The philosophical basis of interdisciplinary connections, the interconnected development of sciences and scientific concepts has been revealed by eminent scholars. They claimed that the laws of interdisciplinary communication in the learning process is a leading didactic phenomenon based on methodological-didactic principles.

Interdisciplinary connection is a didactic phenomenon that improves the educational process and the didactic condition in all its forms of teaching.

In ensuring the interdisciplinary connection during the educational process, the materials of the disciplines close to each other in the content are coordinated with the utmost demand; attempts are made to increase the scientific and practical level

of the studied material; interconnected knowledge is rounded up as a didactic unit; ways to absorb stable and structured knowledge in the minds of pupils are shown; tools will be identified to expand opportunities for the acquisition of generalized knowledge.

The following results can be achieved in the interdisciplinary teaching of biology on the basis of improving pupils' knowledge of the ecological content:

- curricula and study programs are optimized in education;
  - pupils develop the skills of independent and logical thinking, abstract thinking;
  - pupils develop integrated concepts and perceptions of nature, society and science, life skills.
- in particular, the problem of harmonization in the content of education is also an area of integration.

He concepts teaching generalization is the process of generalizing the formation of knowledge, concepts, skills and competencies in education and bringing it into the form of a law or rule [15].

It is necessary to rely on the essence of the interdependence of all academic disciplines through the inculcation of natural knowledge in schoolchildren, in particular, to identify new aspects of the teaching of natural sciences. When interdisciplinary connections are made in the learning process, pupils are provided with interconnected knowledge and concepts.

Hence, interdisciplinary relevance is necessary to fully disclose the content of the study topics. Moreover, interdisciplinary communication allows you to study the content of the course topics, to activate the following processes in mastering the important rules:

- avoiding the of a subjective approach to determining the state of interdisciplinary relationships in the study of educational topics;
- to attempt pupils' attention to the main aspects of academic disciplines, which are of paramount importance in revealing important ideas of science;
- achieving mutual learning of academic disciplines with the help of various didactic tools;
- establishment of creative cooperation between teachers and pupils;
- development of pupils' scientific outlook on the basis of modern requirements in harmony with social life, through the connection of biology with the disciplines of the natural sciences.

The lesson - is the main form of teaching biology, its structure, organization, in which the issues of organization, management and activation of pupils' cognitive activity are the main problems of biology teaching methods. The system of teaching provides educational continuity in accordance with the requirements of the curriculum, expands the scientific outlook of pupils through the effective use of teaching methods and tools, the development of environmental thinking, the formation of educational content and its components, inculcating the national idea in their minds.

The quality of education and the effectiveness of teaching pupils depends on the organization of the lesson, in which the organization, management and activation of pupils' learning activities. The lesson is organized in the biology classroom on the basis of a strict schedule within a specified time in groups (classes) of pupils of the same age, level of preparation, with a permanent content in order to study the content standardized by the biology curriculum. Depending on the content of the subject, lessons can be organized in the corner of wildlife, in the field of educational experiments, in biological museums.

In the biology curriculum, the content of education is given taking into account the age and psychological characteristics of pupils, knowledge resources. The content of biological sciences is divided into separate parts in a logical sequence - chapters, topics. As the study of the content of each topic is made in the lessons, the lessons also form a specific system and are logically connected.

Teaching in the classroom is organized on the basis of a curriculum common to all pupils, the teacher carries out pedagogical activities aimed at organizing, managing and activating pupils' learning activities in accordance with the content of the studied topic, educational, pedagogical and developmental goals. Hence, the activity of pupils in the classroom is their pedagogical activity, and the activity of the teacher is a pedagogical activity aimed at organizing, managing and activating this activity. Learning objectives can be achieved only when the learning activities of pupils in the classroom are organized in accordance with the pedagogical activities of the teacher.

Each lesson contributes to the achievement of common goals and objectives of teaching biology through the acquisition of knowledge, skills and abilities of pupils on the subject, broadening their scientific outlook, intellectual development, personal development, the development of ecological thinking.

The following requirements were set for the teaching of biology in synchronous and asynchronous connection with the natural sciences:

- clearly define the educational goals of each lesson and clearly define its place in the system of lessons;
- identify ways to develop environmental thinking on the basis of general and specific biological concepts, skills and competencies developed in the lesson;
- activation of pupil cognitive activity by identifying and combining effective teaching methods, tools, methods of control and stimulation of knowledge in order to achieve the goals of each stage of the lesson;
- to set clear educational goals, taking into account the knowledge acquired by pupils, the expansion of the scientific worldpoint of the subject, the possibility of spiritual, moral, intellectual, hygienic, physical, emotion, economic education, aesthetic sense, diligence, ecological culture;

- skills and competencies for independent acquisition of knowledge by pupils, meeting the need for simultaneous and asynchronous teaching of biology with the natural sciences, the development of interest, encouragement of creative activity and initiative in their activities;
- development of a scientifically-methodical design of the lesson on the basis of the thematic plan;
- improvement of handouts and didactic materials on environmental issues, educational tasks for monitoring and evaluation of pupils' knowledge, a set of differential tasks;
- creating a technological map of the lesson to ensure the efficient use of time.

In the teaching of biology in synchronous and asynchronous connection with the natural sciences, the lessons are systematically applied in the development of pupils' ecological thinking. Therefore, the teacher must know the types and types of lessons, the specifics of the pedagogical technologies used in them.

Modern educational technologies used in the teaching of biology in synchronous and asynchronous connection with the natural sciences were selected according to the form of organization of pupils' learning activities, which are organized on the basis of environmental questions:

1. The use of conference, creative play, game exercises of didactic game technology in cases where learning tasks of ecological content are of a reproductive and productive nature.
2. The use of brainstorming, conflict of ideas of problem-based learning technology in cases where the learning tasks of environmental content are productive and creative in nature.
3. The use of individual modul curricula of modul educational technology in cases where the environmental tasks are of a reproductive, productive and partially exploratory nature.
4. The use of methods of collaborative learning technology, such as team teaching, in cases where environmental learning tasks are of a reproductive, productive, partially exploratory and practical nature.

Homework is inextricably linked with the lesson, which is a logical continuation of the content learned in the lesson and a factor in pupils' independent learning.

According to the teacher's requirement and instructions, pupils carry out simple experiments, make observations in nature, study additional literature, prepare lectures or abstracts on specific topics, collect collections. All pupils prepare to master the methods of cognitive activity by completing learning tasks.

In the lesson, the teacher intends to teach pupils through a combination of educational content, teaching methods and tools that prepare the ground for the development of ecological thinking in the interdisciplinary nature.

But, not all issues can be studied in the classroom, for example, extracurricular activities are also used in experiments that require long-term observation [18].

In the teaching of biology synchronously and asynchronously with the natural sciences, there is a constant consistency, interdependence and interdependence between the above-mentioned forms of developing pupils' environmental thinking: lessons, extracurricular activities, extracurricular activities, which ensure the integrity of the educational process.

In order to achieve the goals and objectives of teaching interdisciplinary teaching of biology in order to be effective, the teacher must understand the general and specific goals of the forms of teaching and develop an annual future plan in a way that combines them.

In teaching biology synchronously and asynchronously with the natural sciences, great attention should be paid to practical creativity. In the composition of practical creativity, that is, first of all, on the basis of the application of the acquired knowledge in new situations, practical training was intended to create and solve problem situations. Practical creativity led the pupil to think independently, to make assumptions and hypotheses, to see and understand problems that arose.

Improving the comprehensive development of pupils mentally, spiritually, physically and practically, it is expedient to use a set of interactive methods in the process of teaching interdisciplinary knowledge of biology. In the process of education organized in this way, there is an opportunity to increase pupils' interest in the basics of science, to teach them to work mentally, to direct them to the profession and to prevent stress [24].

Knowledge, skills and competencies in the content of biology, chemistry and physics in the educational process, as well as the establishment of interdisciplinary links are the methodological basis of the approach to the integration of education. This can be achieved by returning to different lessons, concepts many times, deepening and enriching them, imparting important knowledge that is understandable to this age. Thus, any lesson with a well-formed structure and order of instruction, which includes a group of concepts related to the same subject, can be taken as a basis for integration.

This opportunity is provided on the basis of an interdisciplinary approach. It can be seen both as a form of integration of academic disciplines and as a method of synthesizing subjective new knowledge. The interdisciplinary approach is considered to be the most optimal direction for the science of biology in the integration of general education and natural sciences. The result of the integration of academic disciplines is based on the conceptual idea that the acquisition of new subjective knowledge that cannot be formed when disciplines are taught without interconnection.

In science, the process of interdisciplinary synthesis of new knowledge is very slow, sometimes it spans a period of several decades. In the learning process, the teacher will have to "bring" the student to a subjective new knowledge based on previously acquired knowledge in various disciplines in one or more sessions or even a few minutes. That is, not to give knowledge in a ready state, but to create the appropriate conditions for their synthesis. One of the technological ways to accomplish this task is to transfer knowledge from one field to another, which is the main mechanism for

establishing interdisciplinary links. It should be mentioned that any transfer of knowledge does not lead to the synthesis of subjective new knowledge. For that, this knowledge must be inverted.

The conditions for the logical development of the curriculum in the interrelated are:

- to establish connections between the objects considered in different educational disciplines;
- to establish the connection between related laws and theories;
- to establish a link between research methods and pupils' practical activities;
- The organization of the relationship between psychological, pedagogical and philosophical knowledge, as well as methodological methods and techniques of education.

In particular, in the process of understanding science, the methodologies of social-humanistic, natural-scientific, technical knowledge are interrelated. It is on the basis of integration that the natural sciences appear in the solution of current problems of scientific and technical progress in the study of human activity, in the instructions of the biocosm. Such differences are reflected in changing attitudes and in the general cultural knowledge of all school requirements.

Integration turns out to be the main mechanism of humanization of the content of natural - scientific education. Nowadays, evaluating the importance of natural-scientific education, it can be concluded that it encourages the coexistence of natural-scientific truth and humanistic ideals [9].

The problem of developing ecological thinking in pupils in the teaching of biology synchronously and asynchronously with the natural sciences is important and relevant both for theory and practice. Because it assumes the main task of integrating other types of knowledge. Such integrated sciences involve the introduction of a number of socio-economic, ethical-aesthetic ideas and concepts necessary for understanding the unity of nature and society.

Acquaintance with foreign experience shows that integrated sciences, which are the basis for the development of knowledge about nature and society, are included in the curricula of many countries. That suggests that integrated disciplines with an environmental focus are a key tool in shaping pupils' environmental responsibility in the world community.

The question may arise - How is the synthesis of subjective new knowledge in the integrated study of academic disciplines?

In didactics, different forms of integration are proposed, such as combining teaching materials related to different disciplines into one lesson.

Educational disciplines should be closely independent, as each represents a separate field of science with its own language, conceptual apparatus, methodology, research subject, and concept. At the same time, interrelated processes must take place by studying them in relation to each other.

In particular, today a new phase of a new approach to the integration of secondary school subjects begins. The interdisciplinary approach addresses the problem of convergence, integration of different sciences that are close to each other.

In order to solve these problems, in order to scientifically substantiate the interdisciplinary connection in the educational process, it is necessary to choose the content of each subject in the interdisciplinary relationship, to form an interconnected system of disciplines using modern educational technologies.

It is necessary to ensure interdisciplinary interdependence in the educational process, to rely on the essence of the interdependence of disciplines, in particular, to identify new aspects of teaching subjects in the natural sciences. When interdisciplinary connections are made in the learning process, pupils are provided with interconnected knowledge and concepts.

Hence, in the process of teaching biology synchronously and asynchronously with the natural sciences, the selection of materials on the content of the development of ecological thinking in pupils allows to ensure interdisciplinary connection, study the content of lessons, highlight the important rules and activate the following processes:

- to draw pupils' attention to the main aspects of academic disciplines, which are of paramount importance in revealing important ideas of science;
- the implementation of organizational work on the use of interdisciplinary communication in the educational process step-by-step, using various types of didactic tools to effectively establish interdisciplinary communication in the multifaceted learning process, constantly expanding the scope of creative initiative and independence of learning activities, complicating comprehension;
- achieving mutual learning of academic disciplines with the help of various didactic tools;
- creating creative collaboration between teachers and pupils.

Thus, in today's education system, the knowledge of interdisciplinary connections in pupils is realized through the introduction of information technology. It will allow us to take large-scale measures to create all the necessary conditions for the upbringing of a physically, spiritually healthy, harmoniously developed generation capable of taking responsibility for the future of our country.

Information culture - the ability and purposeful use of all types of information technology in the learning process in the daily life and activities of pupils. The education system faces the task of forming and developing a culture of information retrieval and processing of pupils. In the success of this process, the teacher-consultant becomes the guide, the manager of the learning process. The teacher assigns the information source, the distributor functions to the information technology. The main issue is access to the world of knowledge, the use and assimilation of the resources of this world. Pupils need to learn new rules in the information world, to receive information in all disciplines, to be able to process it.

## Methods

. In the process of understanding science, the methodologies of social-humanistic, natural-scientific, technical knowledge are interrelated. It is on the basis of integration that the natural sciences appear in the solution of current problems of scientific and technical progress in the study of human activity, in the instructions of the biocosm. Those differences are reflected in changing attitudes and in the general cultural knowledge of all school requirements.

Integration turns out to be the main mechanism of humanization of the content of natural - scientific education. Assessing the importance of natural-scientific education today, it can be concluded that it encourages the coexistence of natural-scientific truth and humanistic ideals.

The problem of developing ecological thinking in pupils in the teaching of biology synchronously and asynchronously with the natural sciences is important and relevant both for theory and practice. Because it includes the main task of integrating other types of knowledge. Such integrated sciences involve the introduction of a number of socio-economic, ethical - aesthetic ideas and concepts necessary for understanding the unity of nature and society.

## Results.

Through the organization of integrated lessons it is possible to discuss with pupils, to organize inter-class competitions, to organize questions and answers. The main purpose of the use of such modern types of lessons is to activate pupils in the learning process, to achieve a high level of mastery of educational material.

That technology teaches pupils to imagine the world differently, to connect practice with life, not to memorize theoretical rules verbatim, to understand the harmony of the individual and society, to achieve diversity of ideas, non-standard thinking, as well as to understand ways of self-development.

Indeed, the completed twentieth century was a century of scientific and technological advances. Along with the use of modern scientific and technological advances, the unfavorable environmental situation has created a global environmental threat in terms of coverage. The causes of environmental hazards the coordination of the relationship between nature, society, people and technology and the prevention of environmental hazards has become a major problem today. This unfavorable environmental situation is an important factor for man, that is, it negatively affects his health. In this regard, the global and regional environmental threat, its causes, the coordination of relations between man and nature, society and nature, the prevention of environmental catastrophe is a topical issue today [11].

Human activity and life are closely connected with nature, the events and processes that take place in it. He is always under the influence of nature and receives useful things from it, so it is impossible to separate human from nature [10].

At a time when science and technology are evolving and people's impact on the environment is increasing, the issue of the ecological situation remains the most pressing problem [5]. Human rude interference in natural processes has negative consequences for the entire world fauna and flora. The study of these changes in nature, related to plants, animals and human life, is one of the most pressing issues today.

Ecological education is one of the main problems of our time, as well as the protection of nature, aimed at instilling in people a love for nature and the environment, the formation of thrifty features. In the process of environmental education, pupils are taught to conserve natural resources, to protect nature [23].

The use of issues in the context of the ecology of the country by linking biology with the natural sciences is a requirement of today because:

- in the teaching of biology synchronously and asynchronously with the natural sciences, environmental issues are often encountered in the daily lives of pupils, that is, familiar to them;
- pupils are interested in environmental issues in the teaching of biology in synchronous and asynchronous connection with the natural sciences;
- in the teaching of biology in synchronous and asynchronous connection with the natural sciences, there is no need for complex mathematical calculations for the selection, construction and solution of environmental problems;
- increases the observation of the selection, formulation and solution of environmental issues in the teaching of biology in synchronous and asynchronous connection with the natural sciences. The main purpose of environmental education is to increase the environmental literacy and culture of society, as well as to protect the components of nature through the efforts of ecologically cultured, educated people to protect nature, keep it clean, love animals, birds and plants.

Ecological knowledge-is the study of the structure, development, transformation of living things, the state of living things on earth, their relationship with each other and the environment, the quantity and quality of natural resources, their diversity and ways of conservation and efficient use [ 22].

Nowadays , the issue of forming a humane attitude towards nature is facing young people, which means that teachers in their work teach pupils about the laws of nature, human and nature, their relationship, the preservation of natural balance and ecological culture, as well as pupils , among them will have to carefully plan and carry out educational work on environmental issues [12].

Research should start with environmental issues, first local and then global.

If schoolchildren understand the causes of ecological crises, the concept of "ecological crisis" will disappear, and they will develop the skills of ecological consciousness, ecological thinking, and patriotism, qualities such as conscientiousness [3].

The materials studied in the ecological education of schoolchildren play an important role in the process of direct acquaintance with nature. Nature is made up of the material world that surrounds human in various forms. The goal of the interdisciplinary explanation of environmental education to schoolchildren is to teach them to know and care for nature, environmental education - the formation of interdisciplinary theoretical knowledge, practical skills and competencies in education.

#### **Conclusion.**

In the conditions of interdisciplinary connection in the educational process, along with the effective development of pupils' knowledge, their cognitive abilities, interests, intellectual potential are increased. Curricula on interdisciplinary communication in the educational process should be understood as a didactic opportunity to ensure the balance of textbooks. In particular, the interdisciplinary teaching of biology serves to ensure the depth and depth of integrated knowledge in improving the ecological content of pupils on the basis of psychological characteristics of pupils, didactic principles (scientific, coherence, consistency, comprehensibility, unity of theory and practice) and pedagogical skills. Hence, the use of selected materials in the context of interdisciplinary relevance in the learning process creates a basis for pupils' interest in science, and as a result ensures the development of pupils' thinking.

#### **Recommendations:**

1. To improve the professional competence levels of teachers in order to develop pupils' ecological thinking in the teaching of biology with chemistry and physics synchronously and asynchronously in secondary schools of general education, to coordinate the competences of pupils with them, as well as to raise the pedagogical process that serves to raise the interrelationship of natural sciences to a new level of quality in the educational process in design accordingly.

2. Organization of the educational process based on the needs of the society and the state in the development of ecological thinking of pupils by connecting biology with chemistry and physics sciences synchronously and asynchronously.

3. Creation of educational and methodical manuals of the improvement of theoretical, scientific-methodical training of biology, chemistry and physics teachers in the regional centers (institutes) for retraining of pedagogues and their qualification improvement.

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