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Methodological Support Using Innovative Teaching for The Development of Natural and Scientific Outlook of Students methodological Support Using Innovative Teaching for The Development Of Natural And Scientific Outlook Of Students

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Abstract *This article has been written in order to report on the findings of a research carried out to develop and implement methodological support of the "Evolutionary Teaching" course in accordance with the requirements of the didactic fundamentals of innovative learning environments; use innovation and information technology effectively in the teaching process, organize independent study of students gradually and effectively, provide prevalence of and establish dynamics of development of natural and scientific outlook, and increase the efficiency of these all.*

Keywords: *evolutionary learning, innovative teaching, teaching methods, interactive methods.*

i. INTRODUCTION

A person with extensive scientific outlook always strives for perfection, acquiring high level of professionalism and skills through self-development.

Implementation of this task in higher education should ensure competitiveness as a result of modernization of educational process, use of innovative and information technologies in this process, recruitment of students, development of existing abilities, satisfaction of scientific needs, interest, and professional training.

Therefore, first of all, in order to broaden and develop students' worldview, it is necessary to create an understanding of research in their minds.

ii. MATHERIALS AND METHODS

They need to have intellectual abilities (intelligent, mindful, knowledgeable, educated, creative, ability to reach conclusions, appreciation of new ideas, perception of news as creative levels, etc.) and creative courage in giving students an understanding of research and a broader explanation for the need for rigorous innovation. The scientific worldview first arises in the mind of a future expert, and then develops and progresses into a concept, idea, doctrine, and begins research on issues related to it.

In the course of the research, the pre-study research is analyzed and analysis, synthesis, comparison, contrast, generalization, conclusion, experimental testing, observation, making logical conclusions, and expressing hypotheses are implemented. The educational system in the context of new standards and programs, based on the demand for modern specialists, requires the use of innovative educational technologies to develop students' scientific outlook.

To do this, an information management unit will be created by first developing a database for solving this problem and developing a student's worldview. It includes:

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- special educational didactic provision (data bank, database, knowledge bank).

- multimedia information technology [7; 164].

The basis for the training of harmonious personality and competitive personnel is the degree to which the problem of formation and development of the scientific worldview of the future specialist is solved. Therefore, there was a need to develop a methodological basis for the formation and development of the scientific worldview during the study.

As a methodological basis, the ideas and principles of national ideology are formed in the process of forming and developing the scientific worldview of the individual.

The main idea of the national ideology is “To build a free and prosperous motherland, to create a free and prosperous life”, to ensure that every citizen of Uzbekistan can live a peaceful life, contribute to the prosperity of the country, preserve peace in the country, and achieve high professionalism and is therefore required to contribute to the construction [11].

The noble goals outlined in the main idea, above all, require the implementation of the leading ideas of national ideology.

In the concept of research:

• Updating the content of education in the system of higher education based on educational, didactic and spreading materials, which will contribute to the development of students' scientific outlook based on competence-based approach;

• The use of educational objectives, educational content, effective teaching methods, tools and forms as a methodological system in the educational process, organized by the course "Evolutionary Teaching”;

• Development of students' scientific outlook through the organization and management of educational and cognitive activity of students in the course of lectures and workshops on the subject "Evolutionary education”;

• Implementation of competence-based approach to the use of learning objectives, learning content, effective teaching methods, tools, and forms as a methodology in the educational process;

• In the course of the educational process on “Evolutionary Teaching”, students gain high level of professionalism and knowledge, skills, support and competency established by the State Education Standards, obtain knowledge in biology and latest innovations in it and serve the welfare of their country.

iii. LITERATURE REVIEW.

Problems of using innovative technologies in the educational process have been reflected in the works of the following Russian scientists: V.P. Bespalko [5], [6], M.M. Levina [13], V.I. Zagvyazinsky [22], M. V. Clarin [12], N.N.Azizhodzhaeva [3], M. Aripov [2], U. Begimkulov [4], N.E. Shurkova [16]. A. Abdukadirov [1], R.G. Isyanov [9], J.G. Yuldashev [10], R.Ishmuhamedov [8], M.Tojiev [19], N.R.Rustamova [14], [15] and U.K.Tolipov, M.Usmonboeva [17], [18].

Theory and discussion. Upbringing a fully developed personality is a complex process that has involved mature people from ancient times. This implies that the upbringing of the young generation and the content of its formation are important not only in the development of the person, but also in the development of the society.

In the course of the research, students were taught the basics of science and the development of their own competencies in science and education through the formation and application of the standardized knowledge by the State Education Standards, as well as skills and abilities in new, unforeseen situations.

Private science competencies include biological object recognition, understanding evolutionary phenomena, competence to understand and interpret processes, biological objects, phenomena, process observations and experiments, healthy lifestyles, and environmental competences, which allow students to form these competencies. The theoretical and methodological structure is therefore developed for the development of scientific outlook.

The requirements of the present day and the laws and principles of teaching are important in the implementation of ideas, theories, and laws related to the scientific knowledge of students in the educational process.

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It is well known that each stage of development of the state and society puts certain state and social orders on the education system in accordance with the methodological principles of the didactic and logical unit based on the social, economic, scientific, technical, spiritual and educational and cultural needs of the individual, society and state.

These orders should be understood by each faculty member who is engaged in pedagogical activity in higher education and must take steps to implement them in the educational process. The Law of the Republic of Uzbekistan " On Education " and the "National Program for Personnel Training" provide a comprehensive approach to the system of continuous education, adapt to society, consciously choose educational and vocational programs, and then pursue socio-political, legal, and psychological development [20], [21].

The development of a student's personality in higher education and the ability to learn and use knowledge effectively in their future activities require the development of a competitive, responsible staff accountable to the state and family.

In the book “The National Ideology – basic concepts and principles” that was created based on the socio-economic, ideological, cultural and educational changes as well as the principles of creating a legal and democratic society there have been requirements for the education system.

The goals and objectives of higher education institutions come from these orders. To achieve this, it is necessary to carry out the following tasks in all training courses in higher education institutions, including the teaching of “Evolutionary education”:

• Increasing the effectiveness of teaching using innovative and information technologies in the learning process;

• Providing the humanistic orientation of education as a result of the inculcation of national ideas and ideologies into the minds and hearts of the students, the universal spiritual values through the study of foreign scholars who have contributed to the development of science;

• Development and implementation of a new generation of didactic and information support materials in teaching evolutionary science;

• Adherence to the principles and laws of teaching, which are the theoretical foundations of the organization of the educational process in all disciplines when teaching evolutionary science.

The success of teaching “Evolutionary Teaching” depends on how well the principles used in organizing the educational process coincide with the basic principles of state education policy and the principles of continuous education system functioning.

It is well-known that the principle of teaching is a didactic category that determines the way in which the laws and regulations of teaching are applied in practice, depending on the goals and objectives of the educational process. The content of the course "Evolutionary Teaching" is based on the principles of scientific, fundamental, and unity of theory and practice, logical sequence, consistency and validity, which define the content of education.

The principles of teaching include the content of the courses, as well as the nature, laws and principles of the educational process, as well as a set of knowledge that is reflected in the practice management of teaching and student activities.

The methodological principle of social and economic development is the leading role in the educational process of higher education institutions. The principle is:

• Implementation of the tasks set out in the normative documents for teaching the course "Evolutionary Teaching";

• Providing for the implementation of state and social orders in the teaching of evolutionary science;

• Ensure students' minds and hearts to absorb the idea of national independence as stated in the company.

Principle of Humanization of Pedagogical Relations in Teaching Evolutionary Teaching:

• Integrating the content of education with humanistic ideas and principles in teaching evolutionary science;

• Developing an individual to teach evolutionary science to the extent that they can, and, eventually, be creative and socially active, to understand and analyze different life situations, to be conscious, self-reliant and motivated;

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• Allows development of ability, needs, interests, and capability of each individual to form and develop positive qualities.

The model developed during the research has not only increased the effectiveness of teaching Evolutionary Teaching but has also helped to develop students' scientific outlook based on based knowledge of State Education Standards, skills, competencies, and basic competences in biology.

On the basis of this model, a methodological system for the development of students' scientific outlook in teaching Evolutionary Teaching was developed (see Table 1).

Table 1. Methodical system of development of students' scientific outlook

T / r	Components of the methodological system	Features of this component
1.	Methodological basis	Ideas and principles of national ideology
2.	The paradigm of the educational process	Student-centered education
3	Didactic targets	Formation of specific learning objectives in Bloom's taxonomy in the educational process
4	Didactic principles	Science, theory and practice unit, systematic, logical sequence, consistency, consistency
5	Content of education	Knowledge, skills, skills, support and biological competences in the course of "Evolutionary doctrine"
6	Training tools	Natural visual aids, electronic manuals
7.	Teaching methods	Verbal, practical, demonstrative, problem-solving, logical, independent work, methods of self-control and evaluation
8.	Forms of training	Lectures, seminars, independent learning, extracurricular activities
9.	Innovative technologies	Vitamin, reflexive, facilitation technologies in the organization of educational process, didactic game in learning new topics, problem-based education, modular education, collaborative learning technologies
10.	Control and self-control	Non -standard training and test tasks based on international evaluation programs (Mytest)

This methodical system includes the methodological framework, paradigm of educational process, didactic goals and principles, educational content, teaching tools, methods, forms, innovative technologies, standard and non-standard learning and testing that allow students to determine the level of scientific outlook and effectiveness of this process.

iv. EXPERIMENTAL RESULTS

The analysis of didactic literature shows that innovative technologies are used in educational process at three levels: general pedagogical, private methodical and local. It is well known that at the pedagogical level the conceptual basis of innovative technologies, principles of application in educational process, peculiarities and ways of organizing students' cognitive activity are covered. This level is mainly used to develop the pedagogical thinking of the faculty. In this way, the pedagogical staff will be provided with the knowledge, skills and abilities necessary to use innovative technologies in the educational process.

Innovative technologies in teaching Evolutionary Teaching have been used in two different ways: at the private and methodical level.

1. Based on the peculiarities of the content of the course "Evolutionary Teaching", innovative technologies applied

at the private methodological level were identified, which helped to achieve the goals and objectives of the course. Innovative technologies applied at the private method level include didactic gaming, problem-based learning, modular education, collaborative learning, and design technology, and are mainly used to learn new topics.

2. In the course of evolutionary teaching, at a specific level of the classroom, local (modular) technologies were used to activate students' cognitive activity.

Any change in the evolutionary learning process will lead to changes in students' cognitive functioning. It is advisable to use local technology at the local level in the educational process so that students can adapt to the requirements of innovative technologies and acquire certain skills.

Once the innovative technologies have been used locally, they have to be successful.

Innovative technologies applied locally in the educational process include "Insert", "Cluster", Venn diagram, "Mind Attack", "Working in small groups", "Chain of words", "Sheet of references" and so on.

These technologies can be used as part of a course - to identify students' knowledge of the previous topic, to activate learning motivations, or to summarize the topic.

In the first stage of the research on April 25, 2012 there was organized an intellectual game "Igor" on the subject "Biology" between students of the Faculty of Biology and Soil Sciences of the National University of Uzbekistan named after Mirzo Ulugbek and 2-4 year students of the Faculty of Natural Sciences of Tashkent State Pedagogical University named after Nizami. Place where questions and assignments and game scenarios were developed by the specialists of the Research Institute of Botany of the Academy of Sciences of the Republic of Uzbekistan, Research Institute of Genetics and Experimental Biology of Biology and Bioorganic Chemistry. The date and time were agreed upon. The event was attended by Prof. Dr. U. Pratov (Chairman of the Collegium), Doctor of Biological Sciences, Professor M. Asrorov, Doctor of Science, Leading Research Fellow S.Baboev, Head of the Department of Working with Talented Students V.Sadiev, Chairman of the Women's Committee of TGUU F. Pulatova, Dean and Teacher of the Faculty of the NUU. Ph.D., Assoc. Rakhimov AK, rector of TSPU, professor, professor UI Inoyatov, pro-rector on educational and spiritual-educational work: Ph.D. D.Ergashev, Ph.D. V. Ishkuvvatov, Dean, Ph.D., prof. P.Mirhamidova, teachers: dps, prof. AT Gofurov, Ph.D., prof. S. Fayzullaev, Ph.D., Assoc. OJ Tolipova and other professors and students.

v. CONCLUSION

Achievement is also expected by organizing individual and small groups of students' educational activities.

Taking into account the didactic purpose of the subject to be taught in the course of "Evolutionary Teaching", the following should be implemented:

• Organization of educational activities for individual work of students;

• The organization of educational activities for two students to work together;

• Forming of assignments for the organization of educational activities for small groups of students and the ways of their implementation in the educational process;

• There is a need to distinguish the innovative technologies used in teaching and develop a methodological basis for the use of innovative technologies in teaching because of the limited ability of students to organize their learning activities in traditional forms of education.

The problem of the formation and development of the scientific outlook of a person’s methodological basis of national ideology and ideas are directly dependent on the socio-economic development of the community, "taking into account the evolutionary doctrine," which will be the subject of education , biology students in the process of network news and the base of knowledge, skills, training, and biological gained professional competence through the acquisition of competences, serve the welfare of the people, contribute to the prosperity of the country, preserve the peace of the country. An interdisciplinary program for the development of the natural and scientific worldview, theoretical and methodological system, methodical system, organizational-technological model, block-module system

was developed therefore.

The study of the best practices of foreign countries in the field of education has done some research on the use of Smart education technology, the concept of Smart education is a concept based on the modernization of methods and technologies used in the educational process, and e-learning in terms of improving the learning environment. It was noted that the transition from learning) to Smart education provides the basis for improving the effectiveness of education. Based on the results of the research, the methodological system for developing the natural and scientific outlook of students in teaching “Evolutionary Teaching” was improved (electronic test (My test) and electronic software (“The doctrine of evolution”).

In the process of developing the students' scientific and scientific outlook, it was determined that the role of the "Young Evolutionists" circle, along with lectures, practical exercises and independent learning, was taken into account.

Methods called “Didactic play”, “problem-based education”, “modular education”, and “collaborative learning”, he Venn diagram," Boomerang "and" brainstorming "," small group "," sometimes Terms "Yes," based on the peculiarities of “Evolutionary Teaching” were utilized, due to the limited opportunities for the implementation of motivational, emotional, cognitive and practical-practical components of the natural-scientific outlook for students. Technologies are set at the local level and on the basis of projected development of the course, students study guide, private-practice level of didactic technology career as belonging to “step on "type of game. The use of facilitation technology was used to organize student.

5. REFERENCES

[1] Abdukodirov A.A., Pardaev A.H. Ta’lim zharajonini tehnologijalashtirish nazarijasi va metodologijasi.-Tashkent.: “Fan va tehnologija”, 2012. – p. 104.

[2] Aripov M., Begalov B., Begimkulov U., Mamarazhabov M. Ahborot tehnologijalari. -Tashkent.: “NOShIR”, 2009. – p. 368.

[3] Azizhodzhaeva N.N. Pedagogicheskie tehnologii i pedagogicheskoe masterstvo. – Tashkent.: TGPU, 2003. – p.192.

[4] Begimkulov U.Sh. Pedagogik ta’lim zharajonlarini ahborotlashtirishni tashkil jetish va boshkarish nazarijasi va amalijoti.: Ped.fan.dok... diss. – Tashkent., 2007. – p.305.

[5] Bespal'ko V.P. Pedagogika i progressivnye tehnologii obuchenija. – Moscow.: IRPO, 1996. – p. 366.

[6] Bespal'ko V.P. Slagaemye pedagogicheskoj tehnologii. - Moscow.: «Pedagogika», 1993. – p. 213.

[7] Hasanboev Zh., Turakulov H., Alkarov I., Usmonov N. Pedagogika. – Tashkent: “NOShIR”, 2011. – p.456.

[8] Ishmuhammedov R., Juldashev M. Ta’lim va tarbijada innovacion pedagogik tehnologijalar. Kullanma. – Tashkent.: Nihol, 2013. – p.278.

[9] Isjanov R.G. Klasternyj podhod v formirovanii modul'noj kompetentnosti prepodavatelej vysshih obrazovatel'nyh uchrezhdenij. – ashkentT.: 2014. – p. 69.

[10] Juldashev J.G., Usmonov S.A. Pedagogik tehnologija asoslari. – Tashkent.: “Ukituvchi”, 2004. – p.104.

[11] Karimov I.A. Millij istiklol mafkurasi – halk etikodi va bujuk kelazhakka ishonchdir. – Tashkent: “Uzbekiston”, 2000. – p. 37.

[12] Klarin M.V. Innovacionnye modeli uchebnogo processa v sovremennoj zarubezhnoj pedagogike – Mosvow.: «Znanie», 1994. – p.365.

[13] Levina M.M. Tehnologii professional'nogo pedagogicheskogo obrazovanija. Uchebnoe posobie dlja studentov pedvuza. – Moscow.: Izdatel'skij centr «Akademija», 2001. – p. 272

[14] Rustamova N. R., (2019). Using of vitagenic technology in the education system. Proceeding of The ICECRS, 3. https://doi.org/10.21070/icecrs.v3i0.356.

[15] Rustamova N.R., The Technology of Developing Media Culture in Secondary School Students. International Journal of Innovative Technology and Exploring Engineering (IJITEE), ISSN: 2278-3075, Volume-IX, Issue-II, December 2019. Aviable to: https://www.ijitee.org/wp-content/uploads/papers/v9i2/B6181129219.pdf.

[16] Shhurkova N.E. Pedagogicheskaja tehnologija. – M.: Pedagogicheskoe obshhestvo Rossii, 2002. – p. 224.

[17] Tolipov U.K., Usmonboeva M., Pedagogik tehnologijalarning tadbikij asoslari. Ukuv kullanma. – Tashkent.: 2006. – p.261.

[18] Tolipov U.K., Usmonboeva M. Pedagogik tehnologija: nazarija va amalijot. – Tashkent.: Fan, 2005. – p.205.

[19] Tojiev M., Zijomuhammedov B. Pedagogik tehnologija: nazarij va amalij ukuv mashgulotlarini lojihalash tazhribasidan metodik tavsijanoma. – Tashkent.: A.Navoij nomidagi «Uzbekiston Millij kutubhonasi», 2013. – p. 64.

[20] Uzbekiston Respublikasi Kadrlar tajjorlash millij dasturi. - Uzbekiston Respublikasi konun huzhzhatlari tuplami. – Tashkent, 2013, 41-son, 543-modda.

[21] Uzbekiston Respublikasining “Ta’lim tugrisida”gi Konuni - Uzbekiston Respublikasi konun huzhzhatlari tuplami. – Tashkent, 2013, 41-son, 543-modda.

[22] Zagvjazinskij V.I. Innovacionnye processy v obrazovanii i pedagogicheskaja nauka / V.I. Zagvjazinskij // Innovacionnye processy v obrazovanii: Sbornik nauchnyh trudov. - Tjumen', 1990. - p.8.

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