

**THE METHODOLOGY OF DEVELOPING THE CHEMICAL THINKING OF THE STUDENTS OF THE  
FIELD OF EDUCATION"**

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**Annotation**

This article outlines and recommends factors for improving the quality of education and the educational functions of topics in the development of chemical thinking for students in the field of uncertainty education.

**Keywords:** education, training, chemical process, teaching process, style, methods, creative thinking, independent thinking, responsibility.

**Introduction**

As the Republic of Uzbekistan gains its independence and advances with bold steps to take its rightful place among the developed countries of the world, undoubtedly the importance of human factors contributing to this independence and its bright prospects has increased and it's going to go. Therefore, since the first moments of our independence, there has been a special emphasis on the preparation of specialists by the government of the republic and the education of young people. For example, presidential decree No. PF-5847 of February 8, 2019 on the concept of developing the National Higher Education System by 2030, August 12, 2020 The adoption and implementation of the Presidential Resolution "On measures to improve the quality and effectiveness of continuous education in the fields of chemistry and biology" requires a fundamental improvement in the professional knowledge of professionals.

The characteristics of students' chemical thinking have been revealed as a prerequisite for the development of innovative policies of universities by expanding integration between universities and various schools in the region, revising and expanding university science. the scope of scientific activity. The role of a chemistry teacher in the development of students' chemical thinking is indicated.

In our country, the chemistry teacher is given special responsibility because the future of the school, the province and, as a result, Russia depends on its quality performance. He was entrusted with the responsibility of forming a student identity. To qualify for this task, the teacher himself must be a person of the highest meaning of the word, and his scientific and technological outlook must be broad. This thesis is very important. First of all, a chemistry teacher shapes the worldview and scientific and technological outlook of a future person. Therefore, he should strive to be premature. A chemistry teacher is a profession required in the region, so he should be professional in the field of chemistry, chemical engineering and technology. However, unlike other chemists, it is not enough for him to know only chemistry and acquire chemical knowledge and skills. To assist individuals desiring to benefit the worldwide work of Jehovah's Witnesses through some form of charitable giving, a brochure entitled Charitable Planning to Benefit Kingdom Service Worldwide has been prepared. to know their ways and tools.

**Adab analysis of** the topic. The educational reforms that are taking place in our country entail bringing up the perfect individuals responsible for the future of our society. Chemistry education also plays a small role in solving this problem, and as part of a continuous effort to build a new Uzbekistan, appropriate road maps have been developed to ensure the implementation of the priorities of the state program for the development of chemistry in our country, improving the quality of education and the effectiveness of science in this direction, and consistent work is being done on the basis of these road maps. After all, in-depth training of our young people in chemistry will contribute to the construction of new manufacturing facilities in the regions, the accelerated development of high-value pharmaceutical, oil, gas, chemistry, mining, and food processing industries, and will prepare a thorough foundation for improving the living conditions and income of our people. This is the purposeful exchange of educational issues and the change of all elements of education aimed at shaping the characteristics of teachers as a result of their social experience

### **Research Methodology**

The chemistry teacher equips students with knowledge of the basics of chemistry, develops their thinking, abilities, and shapes the scientific and technological worldview. The work of a modern chemistry teacher uses many approaches and techniques, we note some of them. In the ideas of developing concepts, a general dialectical method that manifests itself in interconnecting different aspects of the learning process, identifying internal differences, problematic teaching is built on its solution. and more. This methodology is also the basis for improving the content of the methodology. A systematic-structural approach, widely used in the analysis of teaching content, helps to isolate the structural elements of the system, establish relationships between them, identify their functions and integrate them. The essence of the object being studied in new education is explained in connection with life-style examples, and the speaker fully reveals the content of the object being formed using examples and weapons of mass destruction. In explanatory-illustrative education, the speaker explains the facts himself, analyzes them, explains the essence of new concepts, and describes the rules and laws themselves. This method of teaching is a traditional method that is used in teaching today. (Matthew 24:14; 28:19, 20) Today, the effectiveness of these methods in the globalization process does not meet the effectiveness of preparing quality textbooks. The educational process is the main and most effective means of preparing the younger generation for life. At the same time, it plays a major role in the rational development of human experience in the field of manufacturing, technology, and management. In accordance with the provisions of the programme, it is appropriate for us to conduct the knowledge provided to our young people in harmony with science and discipline, programmatically following the lives of our world-renowned ancestors, such as al-Phar'aoh, ibn Sino, and Beroea, who meet modern requirements, prepare competitive qualifications in the world labour market, and develop third renaissance manifestations. The main factor in improving the quality of education is the interaction and interaction of professors and teachers in the teaching process and in research work. The teacher must be not only a transmitter of information but also an organizer, leader, adviser, armed with scientific methods, and have a deep understanding of the laws and mechanisms of the teaching process and manage it. Natural sciences also shape students' intelligence and expand their thinking. Therefore, their educational significance cannot be denied. In the process of teaching chemistry, students are influenced not only by their chemical knowledge but also by their minds,

behavior, and activities. After all, knowledge of the student's personality in the educational process is observed through their interests, activity, diligence and initiative. In view of this, professors and teachers should focus on the educational tasks of the lesson in the development and development of a student person. We have these types of discipline tasks, depending on the educational material; the formation of a scientific outlook; formation of aesthetic attitude to the environment; formation of willpower, physical development, health and strengthening, formation of public relations, self-control in groups and communities, etc. In accomplishing the educational task of the lesson, it is important to achieve the ability of the student to become a means of spiritual development. The lesson should help a student to understand and acquire the spiritual riches of the world. The stronger the impression the student has, the higher his or her educational effectiveness. The basics of personal qualities that are formed in students are based on the relationships that arise among students in the academic hierarchy. Therefore, students need a sense of harmony and the type of discipline associated with mutual assistance. Teaching students to know the world in cooperation with each other and transforming this into the content of each lesson is one of the objectives of modern education. The lesson should focus on creating special conditions for students to work together. In the implementation of chemical reactions, the implementation of independent education is an important issue for students to focus on working in cooperation with their few peers, fostering a spirit of labor culture, especially mutual respect and unity.

A special emphasis on achieving the spiritual development of young people will have effective results, in this regard: achieving a comprehensive solution to educational and educational development characteristics based on the characteristics of academic excellence in each exercise, taking into account the young and personal characteristics of students by ensuring the unity of education; providing national spiritual spirit to the forms, methods, and tools of teaching content, and in this context in every subject make the most of the possibilities of a topic to be studied; implementation of traditional forms, methods and tools of education and training in a small way; interaction and interaction between the types of interdisciplinary, themed spiritual culture, creative communication of schools, families and the community in actively spending the leading time of students; In educating students' spiritual culture, it is necessary to get out of the national crust and accomplish the goal within the framework of human spiritual values. Education and training have been an important problem for the development of all mankind throughout all historical periods. Along with its ethnicity, it has its own nationalities. Current tasks in the field of education and training are extremely broad in terms of content. Of course, it is impossible to detail all the problems in this area within the framework of an article. Taking into account the above points: In the process of developing creative thinking and spirituality in chemistry, it is important to choose such a method that it incorporates all the advantages of all existing scientific and technological approaches and responds to the objective of education and training at a high level.

### **Literature Used**

1. Resolution 4805 of August 12, 2020 on measures to improve the quality and effectiveness of continuous education in the fields of chemistry and biology.
2. School and life. Scientific and methodological journal. -Tashkent. - "Reliable print" LLC. -2010.-No. 4. B.C.E.

3. Continuous education. Scientific and Methodological Journal.-Tashkent.-Sharq.-2009.-No4. b.51-52
4. Basics of Pedagogical Technology./Tashkent: Teacher, 2004. B.246-250.
5. Innovative technologies used to teach chemistry by U.M.Norkulov, H.A.Nasimov, E.A.Ruziyev, I. Ruziyev. Style Manual, Samarkand.: SamDU, 2019. b.160-178.
6. Tilavoldievna, A. M. (2022). KIMYO FANINING FANLARARO ALOQADORLIGI. Conferencea, 196-199.
7. Akbarova, M. (2022). IMPROVEMENT OF CHEMISTRY COURSE ON THE BASIS OF MODERN PEDAGOGICAL TECHNOLOGIES. Scienceweb academic papers collection.
8. Акбарова, М. Т., & Шайзакова, Д. А. (2022). “КИМЁ” КУРСИНИ ЎҚИТИШДА ЗАМОНАВИЙ ПЕДАГОГИК ТЕХНОЛОГИЯЛАРДАН ФОЙДАЛАНИШ УСУЛЛАРИ. Academic research in educational sciences, 3(5), 852-859.
9. Akbarova, M. T. (2022). Kimyo kursini o'qitishda pedagogik texnologiyalar asosida takomillashtirish. Science and Education, 3(5), 2126-2130.
10. Akbarova, M. (2021). Физика йўналиши талабаларига кимё фанини ўтишда “Атом тузилиши” мавзусини семинар машғулотида глоссарий тренинг методи асосида ўтиш. Scienceweb academic papers collection.