

THE USE OF INFORMATION TECHNOLOGY IN THE TEACHING OF
THE TOPIC OF METALMAS

¹Ergashev Vahob Ergashevich, ²Nabiev Abdurakhim Abdukhamidovich,
²Axmedov Mansur Eshmamatovich, ³Shomurotova Shirin Xajiyevna

¹Lower Chirchik, Tashkent region specialized President school chemistry teacher

²Tashkent Institute of Chemical Technology, Tashkent, Republic of Uzbekistan

E-mail: nabiyevabduraxim1979@gmail.com

³Tashkent State Pedagogical University named after Nizomi.

Annotation. This article provides feedback and feedback on the analysis of the results of the research carried out on improving the effectiveness of chemistry education using information technology in teaching the topic of metallmas. The research carried out within the framework of chemistry education is aimed at determining the effectiveness and characteristics of methodological approaches in the modern educational system.

Keywords: Chemistry, metalmas, technology, interactive technology, information technology, Adobe Flash software, Crocodile Chemistry software.

Introduction: in the World, special attention is paid to the improvement of educational materials on the basis of an e-learning environment in accordance with the development trends in the field of Education. In the concept of international education until 2030, adopted by UNESCO, “creating an opportunity for quality education throughout life” is defined as an urgent task. Scientific and practical research is being carried out on the introduction of information technologies into the educational process on a global scale, studying their didactic foundations, improving the methodology and methodological foundations of the development of new methods, tools, modeling reproductive and productive levels of creative cognitive activity in students. Strengthening the role of the educational system in the education of an intellectual potential student, laying the groundwork for the introduction of advanced pedagogical and information and communication technologies into the activities of teachers [1].

The effective use of Information Technology in the teaching of school subjects in the educational system in our country is an urgent issue. Serious attention is paid to improving the system of continuing education in the Republic of Uzbekistan, strengthening the material and technical base of educational institutions, equipping them with modern technical and news media [1, 2].

It is information technology that is considered a universal tool of Education, which allows not only to form knowledge, skills and qualifications in students, but also to develop personal characteristics, satisfy their interest in knowledge.

Information technology refers to various means of information communication – writing, the invention of paper, printed writing, radio, sound recording technical devices, computers [3].

This is what is emphasized in psychological and pedagogical research work, Information Technology has a strong influence on the development of theoretical, creative and reflexive thinking of students. One phenomenon or another in the memory of the student, the figurative expression of the process enriches the educational material and contributes to its scientific assimilation .

The main goal of the introduction of information technology into the educational process is precisely the emergence of new types of educational activities that are characteristic of the modern information environment [4].

Experience part: Have analyzed the current state of Information Technology, now let's dwell on

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its general definitions, practical characteristics, didactic and methodological foundations. What is the concept of “technology” itself at first? Let's think about this: in the National Encyclopedia of Uzbekistan, the definition of “technology” is given as follows:

Technology (techno-art, ingenuity, logos-science) is a system in which the methods of obtaining, processing and processing products in industrial construction, transport, agriculture and other areas are regulated, a science that is engaged in the development, introduction and improvement of these methods.

“Technology” is usually understood as methods of processing materials and the process of production, as well as” a set of their scientific descriptions. “This is how”technology” is commented in the political dictionary:

1) The sum of methods of transformation of the state, feature, shape of processing, preparation of objects, materials, semi-finished items in the production process;

2) The Science of methods of interaction through production weapons in accordance with objects, materials and semi-raw materials.

A close explanation is given in the “comprehensive dictionary”, but it covers it somewhat more broadly: “the task of technology as a science is to comprehensively carry out the laws of physics, chemistry, mechanics and other laws for the purpose of determining effective and cost-effective production processes and using it in practice”.

In one word, technology “is a Greek word meaning”- “techno art, skill”, “logos” doctrine.

Information is some kind of information, some kind of evidence, knowledge, and so on refers to the essence. Until now, a unified definition of information has not been developed. The most commonly used definitions are expressed as follows:

Information-information obtained from it in the process of adaptation to the external environment.

Information provides information about events and events. The phenomenon reveals the essence and essence of events. The term “information” is used in all aspects of human society, on the basis of which the educational process is carried out and pedagogical activity is managed [5].

Information – information about individuals, objects, facts, phenomena and processes, regardless of the form of their presentation;

information sphere-the sphere of activity of subjects related to the creation, processing and use of information;

the owner of information is a legal or natural person who owns, uses and disposes of information within the rights established by law or by the owner of information;

In general terms, “information technology” is the total of methods, devices, methods and processes used to collect, store, trace, process information and distribute it.

Currently, the informatization of the educational process and the import of computer technologies are relevant.

In the case of effective use of interactive techniques in the e-learning environment, the specifics of each discipline are required to be taken into account. In particular, the priority of empiricism in chemistry education (experiments occupy a wide place), the inextricable relationship of laws, theories with formulas that are mathematical expressions, the important place of chemical formulas based on symbolic designations, the importance of the position of expressing chemical processes on the basis of formulas and adhering to conservation laws in this, the vivid expression of

E-learning has a number of advantages over traditional learning .

1. Freedom of entry – the reader can read almost everywhere. Not all e-learning functions are implemented over the Internet.

2. Reducing the cost of education – the reader assumes the cost of the information carrier, but does not bear the cost of methodological literature. In addition, savings are growing due to salaries that teachers do not need to pay, maintenance of educational institutions, etc. The production of e-learning materials does not imply deforestation.

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3. The flexibility of education is the duration and sequence of learning, chosen by the student himself, fully adapting the entire learning process to his abilities and needs.

4. The opportunity to develop with time – users of e-learning courses: both teachers and students and students develop their skills and knowledge in accordance with the latest modern technologies and standards. E-learning courses also allow timely and effective updating of teaching materials.

5. Potential equal educational opportunities-education does not depend on the quality of training in a particular educational institution.

6. The ability to determine the criteria for assessing knowledge – in e-learning, it is possible to establish specific criteria by which the knowledge received by the student in the educational process is assessed.

In reflecting the structure of the molecule of the substance (s) involved in the chemical reaction and the structure of the substance (s) generated from it, the creation of motion using the program is considered very important in keeping the process equation in mind in the school student. As mentioned, motion creation programs for this will help us. One of these programs is Adobe Flash, which is also subject to high school Informatics. The Flash program has the following options that can be used in chemistry education.

Action animation – in the main frames, the beginning and end of the action are drawn, in ordinary frames, action structures are formed on the basis of step-by-step transitions, through the command Motion Tween, they enter a continuous view.

Stop motion animation-it consists only of key frames, each frame is created manually. Obviously, if the action is very dynamic and varied, it is considered logical to introduce such animation.

Figure animation – there is a step-by-step transition of a figure in one form to a figure in another. At the same time, the size, location, color may change.

It is very easy to create an animation of an object along a path in a Flash program.

Creating motion animations in Flash MX software

In order for an object to “capture” its trajectory, its point of change (the circle in the center) must completely coincide with the ends of the trajectory line in the first and last frames. There is an opportunity to develop experimental animations, programmed experimental video footage and even virtual laboratories in chemistry education using these programs [5].

About Crocodile Chemistry program

Through the Crocodile Chemistry program, it is possible to study the chemical and physical properties of all the elements present in the Mendeleev table. It is usually impossible to observe the process (at the molecular level) of transformation of molecules participating in the reaction to another molecule at the time of the occurrence of chemical reactions. But, through this application, it will be possible to observe the dynamics of molecules in the process of reacting a chemical with other substances.

Through this program, it is possible to model chemical processes, conduct various reactions and, most importantly, do it safely.

It can be widely used in teaching chemistry in schools and universities.

Through the application, it is possible to treat a chemical reaction by mixing different reactants with each other using containers of an arbitrary shape. The color of the reagents at the time of chemical reaction, the proportion of substances, the ability to see chemical reaction formulas in a special window gives the opportunity to use as a powerful pedagogical weapon of the program.

Crocodile Chemistry is a chemical reaction process created in an application environment

Conclusion: The organization of chemistry education in the e-learning environment (on the example of the topic “Metalmases” in the 8th grade) provides the opportunity to develop a didactic model, which is formulated as a holistic system based on the integration of interactive technologies.

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