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WAYS TO IMPROVE CHEMISTRY LESSONS USING INFORMATION AND COMMUNICATION TECHNOLOGIES

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Abstract:
The article presents the problems of using information technology in the educational process and ways to solve them in the process of teaching chemistry. The authors used the possibilities of information and communication technology in their own way when teaching chemistry in secondary schools. Methods and techniques for the use of multimedia presentations, virtual laboratories and electronic textbooks have been developed and tested.

Keywords: developmental learning, information and communication technology, chemical experiment, virtual laboratory.

The quality of modern classes does not depend much on the use of new pedagogical technologies, and information and communication technologies (ICT). The use of ICT in the classroom requires information and communication competence and simple computer literacy of both the teacher and the students (students). The use of ICT in the educational process is aimed at personality –oriented learning, where efforts are shifted from the assimilation of knowledge to the formation of competencies. Bringing lessons on the subject of chemistry, determining the content of learning in accordance with the capabilities of students is the primary task of every teacher and requires serious analysis, and finding solutions. Because students do not have a stable motivation to learn chemistry. And the level of complexity of the subject itself causes misunderstanding, and sometimes fear among students.
According to American scientists V. Lewis and F.According to Tildeman, people remember about 10% of what they hear, 30% of what they read, 50% of what they see and 90% of what they do. Questions arise from this:

What should a chemistry lesson be like?
How to spend it, organize it to get the most out of it?
How to achieve high-quality knowledge and skills to use them in everyday life?
How to ensure that students (students) study the subject of chemistry with desire and interest?
Therefore, the purpose of the experiment was: how to organize an educational space so that students (students) could maximize their knowledge and skills; what to do so that students (students) want to learn? Howcan I helpstudentsintheireducation?
The numerous changes taking place in modern education must necessarily be adequately and immediately reflected in the educational process. It is no longer enough to produce traditional paper textbooks and teaching aids, the content of which, often, ceases to be relevant even before they enter educational institutions.
The way out of this situation may be to develop the use of information technology in teaching in almost all disciplines, as well as in chemistry. Their publication in global digital networks or on information media, providing the opportunity for simple operational replication [1].
The use of a digital educational resource in the educational process makes it possible to increase interest in learning, save material resources, effectively assimilate educational material, implement interdisciplinary connections, as well as comprehensively develop skills using information technology.
The effective use of information technology is especially relevant for the subject of chemistry, which provide operational and activity components aimed at organizing practical activities of students (students) to consolidate knowledge, build competence in the subject area using multimedia presentations and electronic textbooks; virtual laboratories as interactive tasks and interactive games.
By applying various forms of work in the classroom, the teacher should strive to arouse the cognitive interest of all children, regardless of the complexity of the material. Try to develop self-confidence even in very weak students, to focus on individual tasks in accordance with the level of education. The independent discovery of the slightest grain of knowledge by a student is a great pleasure, allows you to feel your capabilities, and elevates him in your own eyes.
The result of the introduction of information technologies in the process of teaching chemistry is the mastery of students as a means of cognition of processes and phenomena occurring in nature and used in practical activities. The use of information models makes it possible to reveal the structure and structure of molecules, to reveal more deeply the patterns of chemical reactions, to understand

what the essence of certain processes is, which ultimately leads to better assimilation of the material [2].

The student (student) can investigate the phenomenon by changing the parameters, compare the results, analyze them, and draw conclusions.

Models of chemical reactions, laboratory experiments, chemical devices (computer models) are implemented in the program: «Virtual laboratory. Chemistry. Grades 8-11». Such models are used in cases where, for some reason, it is not possible to carry out laboratory experiments in real conditions and there is no opportunity to get acquainted with the studied chemical processes in reality.

The use of software tools in chemistry lessons has some advantages, which are indicated below as follows:

1) A significant amount of material covering various sections of the school chemistry curriculum;

2) Students show interest in the subject and easily assimilate the lesson material;

3) The visual presentation of the material is improved due to color, sound, volume and movement;

4) The presence of demonstrations of those chemical experiments that are dangerous to the health of students (for example, when experimenting with explosive or toxic substances, flammable and expensive reagents);

5) Acceleration by 20-25% of the pace of the lesson due to the strengthening of the emotional component.

It is advisable to use information and communication technologies in the classroom in order to solve special practical tasks:

-to study new material;

-to consolidate the passed educational material, to practice skills and abilities;

-for repetition, practical application of acquired knowledge, skills;

-for generalization, systematization of knowledge;

-develops the skills of self-study of the material;

-develops skills for evaluating the results of their activities;

-develops the skills of decision-making in a non-standard situation;

-develop group work skills.

It is advisable to use ICT to organize students' independent work on the formation of fundamental knowledge, to correct and take into account students' knowledge.

It is interesting for students to work with simulator programs, working out the topics studied in the lessons, with control programs, tests.

Test control and the formation of skills and abilities using ICT makes it possible to be faster and more objective than with the traditional method. The degree of

assimilation of the material and the ability to apply it in practice are revealed. This method of organizing the educational process is convenient and easy to evaluate in the modern educational system [3].

The use of information technology makes it possible to enhance visibility. Practice shows that, thanks to the use of ICT, the teacher saves up to 50% of the study time than when working at the blackboard. He should not think that he will not have enough space on the blackboard, do not worry about the quality of the chalk, whether everything written is clear. By saving time, the teacher can increase the density of the lesson, enrich it with new content. It should be borne in mind that chemistry teachers will need to prepare in advance for such a lesson and a creative approach.

From the above, if we conclude that the use of information and communication technologies in chemical education, in the chemistry teaching system, is a necessary condition for the development of students. In addition, currently, students achieve several great successes in the field of possession of factual material, where it is necessary to reproduce ready-made knowledge and apply it in a familiar situation.

References

1. Куканбоев И.И.,ЮлдашевУ.М.,Тожибоев Д.Р., Йигиталиева М.А., Очилов Г.М. Инновационные технологии обучения, реализуемые в практике учителей химии. Молодежь и XXI век-2015. 2015. –с.50-55

2. Хамракулова М.М., Коканбаев И.И. Билингвальное обучение на уроках химии, как средство повышения качества образования. Oriental renaissance: Innovative, educational, natural and social sciences. 2022. Том 2. Номер 1. –с.780-783

3.Kukanbaev I.I., Sheralieva Y.B.Using independent work to improve the effectiveness of teaching the topic «Halogens» in the school chemistry course. Asian Journal of Multidimensional Research. 2021. Volume 10.Number 4.pag.172-176

4. Salavatovna, Meliboyeva Gulchehra. "UMUMTALIM MUASSASALARIDA TO ‘GARAK MASHG ‘ULOTLARINI TASHKILLASH YUZASIDAN METODIK TAVSIYA." SO ‘NGI ILMIY TADQIQOTLAR NAZARIYASI 6.9 (2023): 55-58

5.Minovarovna, Kazimova Nafisaxon, et al. "Dependence On The Professional Competence Of The Organizers Of Educational Processes." Journal of Positive School Psychology (2023): 1219-1223.

6.Saidova, Kh. "Organizational and pedagogical features of educational quality control system in advanced foreign countries." Berlin Studies Transnational Journal of Science and Humanities 2.1.5 Pedagogical sciences (2022).

7.Jumanov A.M., Rachmatullaeva G.M., Sidikov D. Methods of solving problems with solutions (methodological manual). Fergana publishing, 2005. – 52.
8. Каримова, Д. Б. Вахобжон Умарович Хужаев, and Мухаммаджон Юсупович Исаков." Определение химического состава парфюмерной продукции методом ГХ-МС." Universum: химия и биология, 11-1.
9. Karimova Dilovar Batirovna, Saidahmedova Nurxon Yusupovna, & Mahmudov Ilhomjon Tolibjonovich. (2022). Research of the chemical composition of perfumery products. Spectrum Journal of Innovation, Reforms and Development, 9, 271–277. Retrieved from https://sjird.journalspark.org/index.php/sjird/article/view/364
10. Mezhlumyan, L. G., Khikmatullaev, I. L., Rakhimova, S. K., Narbutaeva, D. A., Yusupova, S. M., &Aripova, S. F. (2022). Amino-Acid Composition and Hypoglycemic Properties of Proteins from Physalisalkekengi and P. angulata. ChemistryofNaturalCompounds, 58(1), 187-189.
11. Karimova Dilovar Batirovna, & Beknazarov Gulnazar Mamanazarzoda. (2023). Use of assesment technology in teaching the topic "chromium and its compounds". Open Access Repository, 9(3), 106–109. https://doi.org/10.17605/OSF.IO/A8QT3