

THE SIGNIFICANCE OF THE USE OF MODERN TECHNOLOGIES IN TEACHING THE TOPIC "BASIC CONCEPTS AND LAWS OF CHEMISTRY"

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Abstract. *The importance of using modern technologies in teaching the topic "Basic concepts and laws of chemistry" based on the principle of scientific character is shown.*

A didactic analysis of the logical system for mastering the concepts of substance, molecule, atom, element, valency and oxidation state in chemical education was carried out and recommendations were developed.

Keywords: *chemical education, chemical concepts, laws, modern technologies, didactic analysis, learning efficiency.*

Today, when fundamental reforms are taking place in the education system of our republic, it is one of the urgent problems to prepare pedagogues who are mature in all respects, highly qualified, highly moral, cultured and devoted to their profession. [1].

The use of modern and information technologies in the educational system, formation and development of independent thinking and learning skills of our children is one of the urgent tasks facing the representatives of the education sector. Among all educational subjects, the use of modern ped technologies has a great role in the thorough and effective mastering of chemistry. Pupils' understanding of the content of the given topics, chemical concepts, laws, and evidential information reflected in it is carried out with the help of teaching methods. In order for all this to be at the level of demand, the use of modern technologies in chemistry education today has a good effect. In particular, the use of modern technologies in the teaching of inorganic chemistry classes makes it easier for students to understand the theoretical and factual materials of chemistry and helps them to increase their level of knowledge.

The article brought to your attention contains modern technologies suitable for chemistry education and recommendations on their effective use in the educational process.

Before starting a lesson, the teacher should master the systematic application of new methods to each component of the lesson. Accordingly, it is effective to explain the basic concepts and laws of chemistry to students when using the methods of pedagogical technology in organizing and conducting chemistry lessons.

"Venn diagram" and "Sinquain" methods are used in the part of asking the previous topic, "Insert", "Pinboard" and "Staircase" technology elements in the part of explaining the new topic, "3□4 technology" in the part of strengthening the new topic of the lesson and The use of "Concept Analysis" methods, "Blitz-survey" and "Charkhpalak" methods in the assessment of a new topic, and "FSMU" technology element and "Cluster" methods in the homework assignment section serve to increase the efficiency of the lesson. helps to increase students' knowledge. [2].

Pedagogical studies have revealed that students learning chemistry for the first time have difficulty mastering the subject of basic concepts and laws of chemistry. Therefore, we recommend

using the following methods in teaching the subject of basic concepts and laws of chemistry. One of them is the "Auction" method. The advantage of this method is that the Auction method has the ability to develop and educate. As a result of this, interest in chemistry arises among students and the culture of working in groups is formed. It is appropriate to use this method in the part of the lesson to strengthen a new topic. We will use this method in teaching the subject of simple and complex substances. For this purpose, students are divided into three groups and cards prepared by the teacher are distributed to each group [3-4]. (Table 1).

Table 1

Diamond, graphite, fullerene, carbine	Water, table salt, sugar
Simple substances	Compounds
Red, white, black	Rhombic, plastic, crystalline, amorphous
Oxygen, ozone	Allatropy



After the cards are distributed to the members of the group, questions related to the topic are read out in turn (Table 2). The students, in agreement with the group, pick up the card with the correct answer.

Table 2

1.	Show the list of compounds?
2.	Show allotropic forms of sulfur.
3.	What is the phenomenon of the formation of different simple substances from atoms of the same element?
4.	Show allotropic forms of carbon.
5.	What are substances made up of atoms of different elements?
6.	Show allotropic forms of phosphorus.
7.	What are substances made up of atoms of one element?
8.	Show allotropic forms of oxygen.

Each correct answer is encouraged by cards marked Au, Ag, Cu (Table 3).

Table 3.

 Au 5-a'lo 5 - excellent	 Ag 4- yaxshi 4 is good	 Cu 3-qoniqarli 3-sided
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In addition, the "Who am I" method can also be used in teaching the subject. This method allows students to actively participate in the learning process and work with inspiration. It is appropriate to use this method in the questioning part of the subject of the law of conservation of mass or Avogadro's law. [5-8]. The method of who I am is carried out in the following order. the

student goes to the board. A paper cap with a name written on it (for example: A. Lavoisier) is put on their head. Papers with questions related to the discussed topic are distributed to the students who defend the group. They will read out the questions. There should not be more than 13 questions. Students in groups answer "Yes" or "No" and are evaluated based on their answers. We present the method of who I am in the following Table 4.

Table 4.

Questions	Students' answer
Have I discovered the law of constancy of content?	No
Did the Russian scientist Lomonosov try to explain the law I discovered in 1784?	Yes
The definition of the law I discovered is as follows: Any pure substance has a constant composition, regardless of the method and place of its extraction.	No
Did I discover the law of conservation of mass?	Yes

The questions go on and on. Based on the correctness and completeness of the answers of the students of each group, the total score of the group is determined and the winning group is determined. [9].

In conclusion, it can be said that at present, in the teaching of chemistry, like all other subjects, it is possible to achieve the desired results by using pedagogical technologies to increase students' interest in science and strengthen their knowledge.

REFERENCES

1. S.Mizrayeva “Yangi pedogogik texnologiyalar va kimyo” maktabda kimyo 3(27) son 2011, 32 b.
2. B.Bozorov “Kimyoning asosiy tushuncha va qonunlari mavzusini o`qitishda pedogogik texnologiyalarning o`rni”. Umumta`lim fanlari metodikasi ilmiy-uslubiy jurnal N:8 (44) 2014 y. Toshkent.
3. M.Nishonov, Sh.A.Mamajonov , Xo`jaev V.U., Odilhojazoda N.B. Kimyo o`qitish metodikasi.Toshkent. “Fan va tehnlogiyaar”. 2022. 440 b.
4. М.Нишонов, Х. Абдуллажонов, А. А.Хайдаров, А.О. Собиров. Инновационный подход к обучению курса «химия» в направлении «Технология пищевых продуктов» Дата публикации 2019 г. Журнал Universum: технические науки.Номер 12-2 (69). Страницы 33-36.
5. Abdullayeva U.G., Nishonov M.F., Ormonov S.M. Ways of ecological education and training in the training of future chemistry teachers. Дата публикации 2021/2/5 Журнал European scholar journal Том 2. Номер 2. Страницы 94-95 .
6. Abdullaeva U.G., Nishonov M.F., Ormonov S.M. Methods of ecological education and ecological education in teaching metals .Дата публикации. 2021г.Журнал Academicia: an international multidisciplinary research journal том11. Номер1.Страницы 746-748.

7. М.Ф.Нишонов, А.М.Жуманов. Реализация межпредметных связей как одно из направлений в подготовке будущего учителя биологии. Дата публикации 2011г. Журнал Педагогические науки. Номер 4. Страницы 131-134
8. Nishonov M, Yunusov M. M. Preparing future chemistry teachers to introduce reproduction. Дата публикации 2021/9/8, European journal of humanities and educational advancements (ejhea) available online at: <https://www.scholarzest.com> vol. 2 no. 9, september , page 94 -97.
9. М.Ф.Нишонов, М.М., Г. Р. Курбонова. Преподавание темы «Азотная промышленность» нетрадиционным методом. Дата публикации 2020г. Журнал Проблемы современной науки и образования. Номер 12-2 (157). Страницы 39-42