Proceedings of International Scientific Conference on Multidisciplinary Studies
Hosted online from Moscow, Russia
Date: 11th April, 2023
ISSN: 2835-5733 **Website:** econferenceseries.com

METHODOLOGY FOR CREATING SCRIPTED "LESSON CATALOGS" FOR CHEMISTRY TEACHERS

Ahadov Mamurjon Sharipovich
Doctoral student of Navoi State Pedagogical Institute
E-mail: mamurjon.ahadov@inbox.ru
Tel:+998-91-308-88-90

Annotation

In this article, the method of creating scripted "lesson catalogs" for chemistry teachers is given, which can be used by young teachers, future chemistry teachers to organize chemistry lessons, how to organize chemistry lessons, how to achieve an effective result, suggestions and recommendations about what methods, methods and tools should be used to achieve the intended goal from the lesson.

Also, to increase students' interest in chemistry, real-life examples, interesting stories from the life path of chemist scientists, information on the connection of chemistry with other subjects through interdisciplinary integration, PISA studies and methods of using STEAM education in chemistry classes are presented.

Key words: lesson catalogs great story, PISA, STEAM, "A lesson from the ant", "Long storage of fruits and vegetables"

Introduction:

Today, fundamental reform of the education system, ensuring consistency and continuity, and modernization of education using foreign experiences are considered as the most important and urgent tasks.

Development of chemical and biological sciences in our country, increasing the quality of education and the effectiveness of science in these fields, introduction of STEAM education in the fields of chemical education, PISA international studies, in-depth teaching of chemistry and biology, today chemistry education is defined as the most important task facing the teachers.

The main purpose of teaching chemistry in general secondary education institutions: to familiarize students with the most important chemical concepts of chemistry and

the safety of working in the chemistry classroom based on the knowledge they have gained from other subjects and their life experiences;

Formation of students' general competencies related to basic and chemistry subjects; It is necessary to know that chemical changes occurring in nature occur based on certain laws, to be able to use chemical elements, properties, structure, composition, inorganic and organic substances in everyday life, and to continue social life and education. It consists in acquiring knowledge and teaching them to use it in their daily life.

The main tasks of teaching chemistry in general secondary education institutions: connecting the content of chemistry with the current social life and scientific-technical development in the educational process, the contributions of great scientists and chemists to the development of chemistry introduction to; chemical processes in nature, observation and analysis of phenomena, properties of inorganic substances, methods of production, solving problems related to them, conducting experiments, knowledge, skills and abilities about the importance of the most important inorganic and organic substances, the impact of chemical production on the environment to direct the formation of competencies for practical application in their personal, professional and social activities.

Ensuring these goals and objectives is the most important task before us Methodists. We all know that chemistry is included in the list of natural sciences and forms the basis of our life. It is no secret that we do not consider the teaching of chemistry in the majority of secondary schools in our republic to be satisfactory, and we cite the following reasons for this:

- Absence or insufficient laboratory equipment and reagents in school chemistry rooms;
- Inability of chemistry teachers to interest students in lessons;
- Failure to inform students about the secrets of chemistry in our daily life;
- Lack of integration in chemistry lessons;
- That school chemistry textbooks do not meet the requirements and provide shallow knowledge;
- Chemistry is passed from the 7th grade and there are few hours of lessons per week;

Several such problems are the most important and urgent problems facing chemistry teachers in all our republics.

Methods

As a solution to these problems, the method "Creating scripted "Lesson catalogs" for chemistry teachers" that we offer will help chemistry teachers to solve the above-mentioned problems.

The main goal of creating scripted lesson catalogs for chemistry teachers is to increase the professional and pedagogical competence of chemistry teachers, to develop chemistry education by teaching students topics with easy and real examples in an interesting and meaningful way, and to learn from international experiences. (PISA and STEAM) is to bring the state of teaching chemistry in Uzbekistan to the level of international standards.

For chemistry teachers to conduct the lesson in an interactive and interesting way 5 steps:

1. An effective start to chemistry lessons is the key to success.

Always start the lesson in an unusual and interesting way. It is at this moment that you can "fully" use non-standard methods. For example, instead of a boring homework survey, conduct a blitz tournament, a mini-test, organizes a competition. If the topic is new, then you can start the lesson with interesting facts about this topic.

2. Plan the lesson based on the individual characteristics of your students.

Use different options to plan each lesson! You need to attract not only the active ones in the classroom, but also the students who often "yawn" in the lesson, who are lagging behind! Come up with something that works for everyone and use the technique!

3. Add game elements.

A game is a great option at any time and in any class. Such game lessons can equally attract schoolchildren of any age. Dear teacher, try to lead your lesson with games that correspond to different lesson topics!

4. Break the stereotypes!

Do not transfer lessons to the usual framework: lecture, survey, etc. Try to structure the lesson differently. Students' lack of interest in the lesson is often due to the fact that they already know all the stages of the lesson. So don't follow the forms.

5. Involve students in explaining the new topic!

Finding information by looking it up on their own reinforces knowledge more than listening to a ready explanation. Let students work! To do this, give them the task of finding some information about the next topic. Or, during the lesson, refer to the students' own life experiences.

Result

For future chemistry teachers, if they organize their lessons based on the above steps, they will definitely achieve the goals of the lesson.

To organize such lessons, a young teacher lacks experience; the teacher needs features such as relentless research and creativity. For this, the teacher cannot always allocate the necessary time. Therefore, the use of scripted lesson catalogs for chemistry teachers that we offer a good hand will come.

Scheme of creating a lesson catalog:

1-first of all, it is necessary to increase students' interest and passion for chemistry, and to focus their attention on one place, it depends on the teacher's skills:

Based on the essence of the topic, give real-life examples:

- Why does boiling water stop boiling when salt is added?
- What is the reason why apples, quinces, and pears turn brown after a while?
- Why is gold tested?
- Why does the pen leave a black mark on the paper?
- Why do trees turn white in spring?
- Why does ice not sink in water?
- How does the dough rise?
- Why are the leaves green?

If the chemistry lesson is in the last hours, it is possible to increase the students' interest in reading by giving examples from the words of our great grandfathers to concentrate students' attention. For example:

"A lesson from an ant"

One day the owners asked Amir Temur:

"What helped you to rise from a commoner to such a great ruler?"

The great ruler answered: "I did not despair in any case. In this regard, I took an example from an ant.

One day I ran away from my enemies and hid in a ruin. When I lost hope in everything and was depressed, my eyes fell on a strange ant. He used to take a grain of wheat almost twice as big as his body. There was a piece of wood or a piece of wood in his path. The ant tried to climb on top of it, but due to the weight of its load, it could not climb to the end, and its heavier load would fall to the ground. This situation was repeated more than fifty times. Finally, the ant reached its goal. Seeing the determination of this little creature, a hope appeared in my heart. I said to myself that if I don't have an ant's intensity...After that, I didn't fear any obstacle until I reached my goal.

Did you know...Edison, who invented the light bulb, returned home as a child and handed his mother an envelope saying, "Hey, this letter was sent from school." The mother quickly glanced at the letter, then her eyes filled with tears, she began to read the letter to her little son: "Ma'am! Your son is very talented. However, our school does little for his abilities. Let him get an independent education!" Years have passed since then. Edison made some of the greatest inventions in human history. After his mother died, Edison rummaged through her closet and found that letter. Look at the fact that completely different things are written in the letter: "Ma'am! Your son is mentally retarded; he should not go to our school in the morning!" Edison cried for a long time. He could not stop himself for a long time. Finally, he wrote the following lines in his memoirs: "Edison was a grumpy boy. But due to the beautiful service of his mother, he became the owner of a unique talent."

"Scientist who turned himself into a watermelon" "Who is D.I. Mendeleev really", Chemist honey, Composer chemist, Discoveries that appeared in a dream.

You can use such instructive stories and interesting events experienced by great chemical scientists to students at the beginning or in the middle or at the end of the lesson, depending on the situation.

After that, the attention of the students is focused to a certain extent on listening to the teacher, at this time the teacher should have time to explain the new topic to them in 8-12 minutes, because according to statistics, the attention of the student or the time of listening to the teacher It lasts from 8 to 12 minutes. During this period, after explaining the topic, various exercises, auction games, bringing the topics to life, conducting laboratory activities when there are enough reagents and equipment related to the topic can arouse interest.

Discussion:

For example, it is possible to conduct experiments using local raw materials in room conditions.

Experiments with drinking soda; For this, you can use a scale, baking soda, acetic acid (vinegar) flask or a simple glue container.

Step 1: Measure 5 grams of baking soda on a scale.

Step 2: Measure the acetic acid on a scale.

Step 3: Put baking soda in the balloon.

Step 4: Put a ball on the mouth of the flask as shown in the picture and weigh together.

Step 5: put the baking soda inside the balloon into the acetic acid in the flask, the balloon will swell and the mass of the scale will not change.

"Long-term storage of fruits and vegetables"

In winter and spring, one's eyes are happy to see various fruits and vegetables in the markets. They shine as if they were freshly picked. Today, chemicals are used effectively to preserve fruits and vegetables for a long time. For example, when fruits exported abroad are placed in boxes, they are treated with fungicide processed. This substance prevents the fruits from rotting and mold. The fungicide spreads until the mouth of the container where the fruit is stored is opened. Such a fruit should be washed and eaten. Scientists treat the fruit with biphenyl to preserve its freshness. This substance is a colorless crystal. It is soluble in alcohol and ethers.

Paraffin is used for fruits and vegetables that retain a lot of water. Such fruits and vegetables should be eaten after wiping the skin.

You can also try this experiment at home and draw the necessary conclusion. Experiments with matches; Experiments related to the curing process; Experiments with candles; Experiments with toothpaste;

We know that in one class there are students who are interested in every field. Among the students, we often hear the answer "I don't need this subject". In this matter, the teacher should properly implement "Interdisciplinary integration".

It depends on the skill of the teacher to pass each subject of the lesson in an interdisciplinary connection. In the "Integration of Chemistry" part, the connection with the sciences is established:

The flame of a candle gives light; the flame of an alcohol lamp does not give light? (Chemistry and physics)

What is the reason for the leaves to be green? (Chemistry and botany)

7% of nitrogen in the air is 21% of oxygen, but despite the small amount of oxygen in the air, why does it breathe with oxygen? Does nitrogen not take part in breathing? (Chemistry and biology)

What caused the death of Alexander the Great in ancient times (chemistry and history).

Make English words using symbols of chemical elements? LiFe, RuN, WHAtS UP? FUN, PoWEr, HOMe, ThInK, MoThEr, FAtHEr (Chemistry and English)

1. How many elements are there in Time table? Answer : 118
2. When was time table discovered? Answer:1869 year
3. How many periods groups lines are there time table? Answer: 18
4. How many ***s, p, d,*** and ***f*** are there time table? Answer: 14, 36, 38, 24
5. Which is the most solid metal? Answer::osmium
6. Which is the most liquid metal? Answer: mercury
7. Which is the most soft metal? Answer:litium
8. Which is the most easy metal? Answer:
9. When and where was Mendeleyev born? Answer:1834
10. Hov many elements did Mendeleyev describe? Answer: 63

Show the elements called countries? French, American, European, Ruthenium (Russia), Gallium (ancient France), Polonium.

Which Swedish village is named after four chemical elements? Name these elements. (Ytterbium: yttrium, terbium, erbium, ytterbium).

In the "Lesson Catalog" such interdisciplinary connection is given in each lesson.

The "Course Catalog" provides methodical support to chemistry teachers in teaching students STEAM education and PISA international studies.

We guide students to PISA studies through real-life examples from chemistry:

Example-1: We observe the process of kneading dough at home. Measure exactly how much flour, salt, yeast and water are used and record it in your notebook. Write your summary.

Example-2: take apples, pears and quinces, divide them into equal halves and record the time in a notebook. Observe how long it takes to blacken and which fruit has the fastest and slowest blackening time, and writes your conclusion.

Through the examples given above, we can direct students to scientific research and increase their creativity.

Lesson catalogs prepared for chemistry teachers will be posted on the "edu-chem.uz" site and will be used by all chemistry teachers in our country.

Lesson catalogs are regularly updated with new knowledge and competencies, and at the same time, young chemistry teachers will have the following opportunities:

- Methodology for creating "Lesson catalogs" for young chemistry teachers;
- Chemistry classes will be made viable;
- Chemistry lessons are enriched with interesting facts and evidence;
- Chemistry lessons are directed to PISA studies;
- Chemistry lessons are connected with STEAM education
- Interdisciplinary integration is established in chemistry classes;
- A modern methodology of teaching chemistry will be created;
- A chemistry teaching mechanism will be developed based on external education;
- To create an entertaining chemistry study guide in order to arouse interest in chemistry;

In conclusion, we emphasize that the use of the above-mentioned scripted lesson catalogs for chemistry teachers will create enthusiasm, love and interest in chemistry in students. It's no secret that during the research conducted among schoolchildren, the opinions of students about chemistry:

- Chemistry is a very difficult subject - (80-90%)
- Chemistry is not interesting - (60%)
- Chemistry is not passed well - (80 %)
- Experiments in chemistry are not performed - (90 %) such thoughts are embedded in the minds of students.

In order to change their thinking, we need to explain chemical knowledge to students from elementary school with real life examples. Then the results change significantly in higher classes. Chemistry is taught in secondary schools from the 7th grade. By this time, most of the students have determined their direction. Interest in chemistry is very low.

If the educational process is organized using the above-recommended lesson catalogs, students' in-depth study of chemistry will increase the quality and efficiency of education.

REFERENCES

1. Ikhtiyarova G., Bekchanov D., Ahadov M. "Modern technologies in teaching chemistry" textbook. T.: "University" pp. 180-189.
2. "Chemistry we know and do not know" M. Primkulov, R. Ziyayev, B. Akbarov, U. Haydarov "Teacher" publishing house Tashkent - 2011.
3. Book of sharp geniuses. B. Akbarov, M. Primkulov. Tashkent "Uzbekistan"-2015.
4. Olimova Q.T. Theoretical and methodological foundations of creating a new generation of educational literature from special subjects: Dissertation-T.: TDPU; 2005-212b.
5. Rakhmatullayev N.G., Omonov H.T., Mirkomilov Sh.M. Methodology of teaching chemistry. - Tashkent: "Economy - Finance", 2013.