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КИМЁ ЎҚИТИШ САМАРАДОРЛИГИНИ ОШИРИШДА УЙ КИМЁВИЙ
ТАЖРИБАЛАРИНИНГ РОЛИ

THE ROLE OF HOUSEHOLD CHEMICAL EXPERIENCES IN INCREASING THE
EFFICIENCY OF LEARNING CHEMISTRY

РОЛЬ ДОМАШНИХ ХИМИЧЕСКИХ ОПЫТОВ В ПОВЫШЕНИИ ЭФФЕКТИВНОСТИ
ОБУЧЕНИЯ ХИМИИ

R.Kazakov¹¹R.Kazakov

– lecturer at the Department of Chemistry Andijan State University.

Аннотация

Мақолада умумий ўрта таълим мактабларида кимё ўқитишнинг бугунги ҳолати юзасидан маълумотлар, кимё ва кимё sanoatining инсоннинг кундалик ҳаётидаги роли, шунингдек, мақсади ўқувчиларнинг кимё асосларини ўрганишга қизиқишларини ошириш бўлган илмий тадқиқот натижалари келтирилган

Annotation

This article provides information about the current state of teaching methods in comprehensive schools, the role of chemistry and the chemical industry in human everyday life, as well as the results of scientific research, the purpose of which is to increase students' interest in learning the basics of chemistry.

Аннотация

В данной статье приведены сведения о современном состоянии методики обучения в общеобразовательных школах, роли химии и химической промышленности в повседневной жизни человека, а также результаты научных исследований, цель которых состоит в повышении интереса учащихся к изучению основ химии.

Таянч сўз ва иборалар: умумий ўрта таълим мактаби, кимё ўқув предмети, хемофобия, уй тажрибалари.

Key words and concepts: secondary school, chemistry subject, chemophobia, home experiments.

Ключевые слова и выражения: средняя образовательная школа, предмет химии, хемофобия, домашние опыты.

Introduction. The whole world consists of over a hundred elements. The presence of 92 chemical elements in the human body has been scientifically proven.

Currently, a person, along with many natural compounds, comes into contact with various polymers, household items, food products, clothing, perfumes, vehicles, building materials, and various soft drinks of synthetic origin.

This fact shows the vital need for the effective formation of chemical knowledge, skills and abilities in secondary school students. The subject of chemistry in secondary general education schools, along with other academic subjects, performs an important teaching and educational task.

Relevance of the research topic. Chemistry is developing rapidly today. We can

see this in the results of various studies carried out by scientists from different countries.

Many chemical compounds with biological activity, new composite materials, biostimulants, anticorrosive compounds of organic origin, drugs that increase the productivity of agricultural crops and fight their pests, pharmaceuticals and many other chemicals are examples of this.

With the development of society, the needs of a person also grow every day. As a result of a mass media campaign about the harmful effects of chemical compounds on the human body, the environment, people develop a fear of chemical compounds, that is, "chemophobia". It should be noted that all phenomena and transformations are based on chemical processes. Therefore, the importance of chemical knowledge can hardly be overestimated. Lack of chemical knowledge

among members of society leads to a decrease in ecological culture, natural science literacy.

Statement of the scientific problem to be solved. In various countries of the world, in particular in Russia, research is being conducted to improve the effectiveness of methods and means of teaching chemistry. These works include the development of more rational curricula, propaedeutic courses in chemistry for primary school students, etc. ... Scientific articles on the educational role of tasks with practical content are published in scientific and methodological journals.

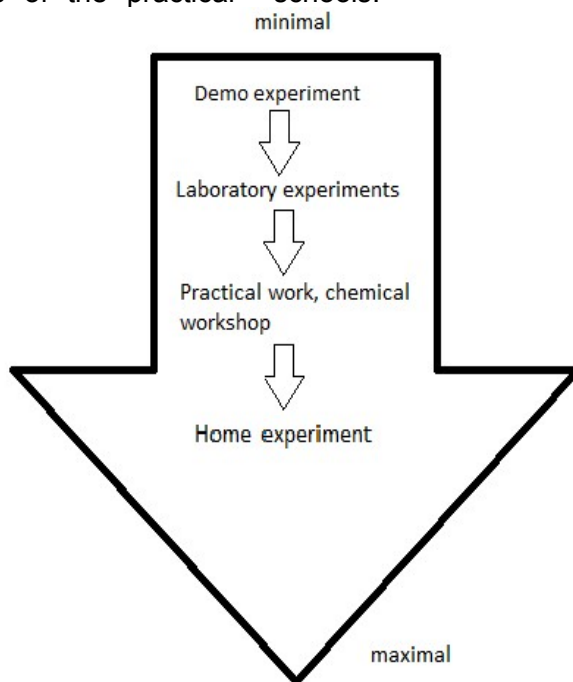
In the Republic of Uzbekistan, over the years of independence, various scientific studies have also been carried out to improve the effectiveness of teaching chemistry in secondary schools using various didactic games, educational information programs for the development of abstract thinking, various interactive methods and teaching aids.

The purpose of the study. is the development of home chemical experiments that can serve as an awareness of the practical

application of the theoretical knowledge of the chemistry course assimilated by students, the development of skills in working in non-standard conditions, and creative thinking.

Research methods. To achieve the goal and solve problems in the course of the research, sociological methods (questioning, conversation, question-answer), modeling, pedagogical observation, mathematical and statistical analysis of the results of a pedagogical experiment and methods of summarizing the results were comprehensively used.

Scientific significance of the article. The scientific significance of the research results lies in the fact that the proposed methodological support makes it possible to implement the important scientific task of increasing awareness and reducing the formalism of knowledge, as well as enrich the scientific and methodological ideas about the peculiarities of using the principle of linking learning with practice in the process of teaching chemistry in secondary schools.



In this structure, each subsequent type of school chemical experiment differs from the previous one by an increase in the degree of independence. The connection between the elements as a whole lies in the fact that they all implement in teaching such a method of cognition as experiment.

In the structure of School chemistry experiments, a home experiment took place. Let us prove that the place of a home experiment in

the structure of SHE is quite justified. For this, let us dwell on the characteristics of the main types of School chemistry experiments.

A demonstration experiment is the most accessible and takes less time than other types of experiment. It allows you to accumulate empirical material in a short time. But even the most ideal formulation of demonstration experiments does not make it possible to create vivid ideas about substances and their

properties in students, teach them how to independently acquire knowledge, and form experimental skills.

The laboratory experiments accompanying the teacher's presentation give, with appropriate guidance, vivid and visual representations. But these experiments are less accessible than demonstration ones: not every experiment can be passed into the hands of students; at present, not every school has the necessary reagents and equipment for frontal work. Laboratory experiments do not sufficiently form independent work skills and experimental skills in students. according to their purpose (to visually acquaint with the material presented by the teacher) are carried out as quickly as possible so as not to lose the thread of presentation, and therefore simplified, with the expense of a minimum amount of time and using the simplest experimental technique.

Practical work and workshops are carried out mainly after studying the relevant issues of the program (before studying these issues, in many cases it is meaningless to carry out practical work) and serve to consolidate, improve, concretize knowledge, and form experimental skills. When performing practical work, chemical workshops, the proportion of students' independence is high, but still not 100%. this type of activity is carried out with the direct participation of the teacher.

A logical continuation of the structure: demonstration experiment → laboratory experiments → practical work is an experiment that is performed by students completely independently, i.e. home experiment.

A home experiment is an individual, practical, independent work that I carry out using substances and household items, carried out under the indirect guidance of a teacher.

A home experiment that objectively exists in the practice of teaching is an extremely important and useful activity.

The features of home experimentation include the following:

First, a valuable feature of a home experiment is its individual performance. By individuality of performance, we mean that the student, in his own way, individually approaches the performance of the task, which can contribute to the manifestation of his abilities and the development of skills, both general educational and experimental. Students have the opportunity to modify or suggest their own options for performing the experience.

Secondly, the implementation of home experiments is not limited by strict time frames, students can redo the experience if it did not work out.

Thirdly, home experimental work has some advantages over other types of SHE (demonstration experiment, practical laboratory work). In home experimentation, students learn to plan their activities on their own, to come to conclusions on their own, which takes more mental effort than observing demonstrations or performing practical work and laboratory experiments under the direct supervision of a teacher.

Fourth, no matter how well organized the process of performing an independent experiment in the classroom, it is less than a home experiment that promotes the manifestation of students' creativity and personal initiative.

Fifth, it allows one to overcome the misconceptions of schoolchildren that it is possible to acquire knowledge in chemistry only in chemistry lessons.

The isolation of teaching chemistry from life, the removal of chemistry from everything that is familiar, understandable and customary by students, affects their perception and is one of the reasons for the formal attitude to chemistry as a subject.

Conducting chemical experiments by students in his home environment, completely independently, is the very methodological technique that can more to solve many of the above problems.

Thus, the home experiment is an element of the school chemistry experiment system.

We have developed home chemical experiments for 8th grade students of secondary schools. As an example of such household chemical experiments, the following experiments can be offered:

The main classes of inorganic compounds Oxides

The purpose of the experiment:

A) Educational goal: Strengthening knowledge, abilities and skills in the class of oxides, their types, some properties;

B) Educational goal: Development of mental and practical skills of students through home chemical experiments on the topic "Oxides";

C) Educational goal: To teach students to draw conclusions about the meaning of

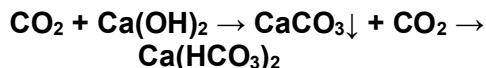
concepts on a given topic in everyday life, which will contribute to the formation of an ecological culture.

Equipment and substances: gas hose or cocktail tube, carbonated drink, lime water

Methodical instructions: The teacher must first of all give instructions on safety measures when working with lime water. You can use plastic cocktail straws as a vent tube. Oral instructions are given on the implementation of the experiment and the preparation of a detailed report with the equations of the corresponding reactions, drawings of the assembled device.

Lime water interaction with carbonated drinks

Take a carbonated drink and use a gas outlet to run the evolved gas through the lime water. Explain why the solution becomes cloudy at first, then the solution becomes clear?



Lime water, sediment, Dissolution of sediment

Make up the equations of the phenomena occurring and write a detailed account of the experiment. Make a drawing of the assembled device for the experiment.

The effectiveness of the developed domestic chemical experiments using household items for the assessment, development and consolidation of chemical knowledge,

experimental skills and abilities was revealed by formative experiments.

The analysis of our research has shown that the use of home chemical experiments in extracurricular activities effectively affects the assimilation of chemical knowledge, abilities and skills on the topics covered in the corresponding courses of 8th grades of secondary schools.

Mastering in the interconnection of theoretical knowledge, practical skills, skills in basic chemical concepts and laws, theories allows drawing conclusions on the basis of inductive and deductive methods. Home chemical experiments lead to understanding the role of chemical knowledge in life, which ultimately leads to an increase in the degree of assimilation of chemical knowledge and skills.

Concrete conclusions and practical suggestions. Based on the above data, it can be concluded that the use of home chemical experiments in the 8th grade of secondary general education schools serves for the effective development of theoretical knowledge, practical skills in chemistry, awareness of the practical role of chemical concepts in everyday life, the role of chemistry and chemical production in development of modern society. At the same time, our research makes it possible to expand the scientific worldview, get rid of the influence of "chemophobia", gradually form and develop ecological culture, scientific and natural literacy of students.

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(Reviewer: I. Askarov – Doctor of Chemical Sciences, Professor).