CASE TECHNOLOGY IN CHEMISTRY LESSONS

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ABSTRACT

Recently, technologies of active learning, for example, design, ICT, technology for the development of critical thinking, case studies, etc., have become widespread. The article presents the methods used in Chemistry lessons.

Keywords: technology, case study, Chemistry, method.

INTRODUCTION

Recently, technologies of active learning have become widespread, including design, ICT, technology for the development of critical thinking, etc. Let's take a closer look at the use of case technology. The name comes from the Latin term "casus" - a confused or unusual case. In addition, the term “case technology” is sometimes used as a folder with educational materials.

A case is a set of training materials in which practical problems are formulated, suggesting a collective or individual search for their solution, this is a description of a problem situation based on real facts, cases that can be translated into task status, and then solved with a subsequent reflection of the course and resources of the solution.

METHODS AND MATERIALS

As texts you can use any texts (materials from newspapers, magazines, the Internet, etc.). Cases can be practical (for fixing ZUN), training (for solving educational and educational tasks), research (for carrying out research activities and the formation of research competence). The case method is designed to obtain knowledge on disciplines, topics in which the truth is ambiguous.

Case Requirements:

1. statement of the actual problem, which can be discussed and which does not have an unambiguous solution;

2. The text is consistent with the educational objectives and the topic of the lesson (section) within which it is proposed;

3. the availability of sufficient information to analyze and find solutions to the research problem;

4. lack of author's assessment of the problem.

The goal is to teach:

• analyze information,
• sort it to solve a given problem,
• identify key issues,
• generate alternative solutions and evaluate them,
• choose the optimal solution and formulate action programs, etc.

In addition to these goals, when applying situation analysis, additional effects are achieved in which the trainees:

• receive communication skills;
• form interactive skills that allow you to effectively interact and make collective decisions;
• acquire expert skills;
• learn to study, independently develop various problems;
• analyze situations;
• evaluate alternatives;
• choose the best solution;
• draw up a plan for the implementation of decisions;
• learn to work with information.

RESULTS

Stages of using cases:

1. The preparatory phase - the creation of a case and questions for its analysis; preparation of methodological support for the upcoming lesson.

2. Introductory stage (the teacher organizes the work in the classroom, students get acquainted with the situation, its features);

3. The analytical phase

The purpose of the stage: to analyze the case in the group and work out a solution.

Activities:

- highlighting the main problem;
- any suggestions for its solution;
- analysis of the consequences of making a decision.

4. The final stage (the teacher evaluates the contribution of students to the analysis of the situation, leads to a general conclusion).

Methods used in case technology:

1. Incident Method

An incident (from lat. Incident) - an incident, incident, collision.

This is a deep and detailed study of a real or simulated situation.

The purpose of the method is to search for information for decision-making by the listener himself, and, as a result, learning to work with information: communicate it, organize, analyze.

As an example, consider the case of a chemistry lesson in grade 9: “Properties of phosphorus and its compounds”:

DISCUSSION

At the beginning of the lesson, the teacher reads out a quote (known to all chemistry teachers) from the novel by A. Conan Doyle “The Hound of the Baskervilles”: “The monster lying before us could truly frighten anyone with its size and power. His enormous jaws still glowed with a bluish flame, wild-looking, deep-seated eyes surrounded by circles of fire. I touched this luminous head and, taking my hand away, saw that my fingers also lit up in the dark. “Phosphorus,” I said. " It is proposed to investigate this fact. A set of cases for working in groups:

Case No. 1 "Phosphorus, its chemical properties" (4).

Case No. 2 “Phosphorus, allotropy, physical properties, effects on the body” (7).

Case No. 3 “Oxides and hydroxides of phosphorus, their chemical properties and preparation” (8).

Case 4 “The Mysterious Light and the Production of Phosphorus” (10.11).

2. The method of playing roles.

In the form of a staging, a true situation is created, which is then evaluated by the students. When “playing out situations”, participants play the role of independently determining a behavior strategy, scenario, and planned result. An example of such a lesson is Mazilkina N.V. (8): At a chemistry lesson in grade 9 on the topic “Metals. The biological role of metals in the human body ”, the teacher acts as the editor-in-chief of the newspaper, and the students as correspondents.

3. The method of "Group discussion".

Usually lead the discussion

Names	Unit Measurement	Cost
Methane (n.o.)	1L	11 rub.
Oxygen (n.o.)	1L	4 rub.
Synthesis of gas (n.o.)	1L	8 rub.
Chloromethane (liquid)	1L (density 2.31 g / l)	80 rub.
Sodium hydroxide (tv.)	1 kg	2 rub.

Case No. 3 “Task for Technologists”: Having analyzed the methods for producing ammonia and sulfuric acid, we propose a technological scheme for the

production of methanol from CO and H2. Sources - technological schemes and a description of the production of sulfuric acid and ammonia.

Case No. 4 “The Task to Ecologists”: To analyze the possibilities of environmental threats in the production of methanol, to propose methods to prevent this. How to most effectively use natural resources and energy in this production. (You can use Internet resources).

CONCLUSION

The development and implementation of cases in teaching is a complex and time-consuming task, requiring good knowledge of Internet resources that greatly facilitate the preparation of cases. The teacher's activity involves creative work on creating a case and questions for its analysis and discussion, assessing the contribution of students to the analysis of the situation. But the time spent is justified by the development of students' mental activity, more solid knowledge, and, of course, increasing interest in the subject.

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