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USING CASE-STAD TECHNOLOGY IN TEACHING CHEMISTRY

Annotation. *This article suggests approaches to the implementation of the case method as one of the leading teaching methods. To achieve this goal, an analysis of the scientific literature was carried out, which made it possible to identify the possibilities, advantages and advantages of this method, the purpose of its application and give examples of case classification. The article provides examples of training situations that can become the basis for the development of cases.*

Key words: *case, chemistry, lesson, case-study, case technology*

Анотація. *У статті запропоновано підходи до реалізації кейс-методу як одного з провідних методів навчання. Для досягнення поставленої мети було проведено аналіз наукової літератури, який дав змогу виявити можливості та переваги даного методу, мету його застосування та навести приклади класифікації випадків. У статті наведено приклади навчальних ситуацій, які можуть стати основою для розробки кейсів.*

Ключові слова: *кейс, хімія, урок, кейс-стаді, кейс-технологія*

Introduction. Improving the effectiveness of the lesson is the main task of the teacher. The success of its solution largely depends on the teaching methodology, which allows to equip students with deep and solid knowledge, teach them to work

with interest and independently. It is obvious that their interest in studying and creativity makes them more active in the educational process, which leads to greater motivation, the manifestation of their talents and the achievement of success in the study of science [2]. In the organization of this kind of activity, the so-called case-study technology becomes one of the promising learning technologies. This technology is a synthesis of problem-based learning, information and communication technologies, and the project method.

The aim of the article is to reveal the use of case-stad technology in teaching chemistry.

Research results. The introduction of case technology has shown high efficiency when working with students, increased their interest in studying chemistry, improving academic performance in the subject, developing analytical abilities and, finally, most importantly: awareness of the need to study such a science as chemistry in terms of an integral part of the knowledge of the world, the surrounding reality and practical application.

Case technology is a modern educational technology based on the analysis of a problem situation. It combines both role-playing games, the project method, and situational analysis.

Case technology is not a repetition of a teacher, not a retelling of a paragraph or an article, not an answer to a teacher's question, it is an analysis of a specific situation that forces you to raise the layer of knowledge you have gained and put it into practice.

This technology helps to increase students' interest in the subject being studied, develops such qualities as social activity, sociability, the ability to listen and express their thoughts competently.

The case method is widely used in studying abroad. It was first used in the educational process at the Faculty of Law at Harvard University. The first collections of cases were published in 1925 in the reports of Harvard University. The problem of introducing the case method into the practice of school and higher professional education is currently very relevant, which is due to two trends: the first follows from

the general orientation of the development of education, its orientation not only to obtaining specific knowledge, but also to the formation of competencies, skills and skills of mental activity, the development of personal abilities, among which a special attention is paid to the ability to learn, the ability to process huge amounts of information, etc.; the second follows from the development of requirements for the quality of a specialist, who, in addition to meeting the requirements of the first trend, must also have the ability to behave optimally in various situations, differ in consistency and effectiveness of actions in conditions of continuous changes in social, professional and other spheres of life.

The authors [1] used the so-called case method, that is, the method of specific situations, in their laboratory and practical classes in methodological disciplines (and sometimes during lectures). Analysis and discussion of real situations arising in chemistry lessons based on the use of video clips of lessons based on the results of pedagogical practice increases the responsibility of students and contributes to their self-development. This technique is used in higher education as a teaching technique that uses a description of real events taking place in chemistry lessons or during extracurricular activities. The essence of the method is that students should accept this situation, analyze it, identify obvious and hidden problems (for the chemistry teacher and for students), offer variable solutions and choose the most optimal (best) of those listed by them. Despite the fact that the case method has found the greatest application in the field of business, its application in the methodology of higher education brings students as close as possible to professional development.

The objectives of the case method: firstly, the activation of cognitive activity of students, which, in turn, increases the effectiveness of learning. Secondly, increasing motivation for the learning process. Thirdly, the development of skills of working with information, including the ability to request additional information necessary to clarify the situation. Fourth, the ability to draw the right conclusion based on a group analysis of the situation. Fifth, the acquisition of skills for a clear and accurate presentation of one's own point of view orally and in writing, to convincingly defend and defend one's point of view. Sixth, the development of skills of critical assessment

of various points of view, the implementation of introspection, self–control and self-assessment [3].

The essence of the case method is as follows:

1. Selection of tasks for the possibility of using different solutions.

2. Block–modular construction study of new material.

3. Organization of independent work of students in preparation for the lesson, when working with the case.

4. Communication, exchange of answers between students.

5. Concentration of all types of activities by stages of work [4].

There are a number of attempts to distinguish and typologize this method. Regarding the display of the material of the situation, the type of receiving and processing information, the decision–making process, problem solving and solution evaluation, there are four types of case method (according to O.G. Smolyaninova) [5, p. 42 - 44].

Case– Study– Method. This type is distinguished by a large amount of material, since, in addition to describing the situation, the entire volume of information material that students can use is also provided. The main emphasis in the work on the case is on the analysis and synthesis of the problem and on decision-making.

Case– Problem– Method. In this variant, the problems are clearly named during the description of the case. Thus, there is more time to develop solutions and discuss them in detail.

Case– Incindent– Method. This option differs in that the focus is on the process of obtaining information. For this reason, the situation is often not displayed in full, but with spaces. Although this form of work requires a lot of time, it can be considered especially close to practice, because in practice it is the receipt of information that makes up an essential part of the entire decision-making process.

Staded– Problem– Method. A characteristic feature of this option is the provision of ready-made solutions and their bases. The task of students is primarily to familiarize themselves with the structure of the decision-making process in practice,

to critically evaluate the decisions made and, if possible, to develop alternative solutions.

Formation of an understanding that there are situations when self-control is necessary to achieve a positive result, especially in group work situations. Examples of cases on the chemistry course of grades 8-11 «Separation of mixtures of substances». Grade 8 In the process of life of a modern person, a huge amount of household waste is generated. Urban garbage contains many valuable substances: aluminum (milk bottle caps, tea foil, sweets), tin (cans) and even gold (unusable radio components, shards of plates with a gold border). However, the recycling of garbage in order to isolate useful materials and substances in the urban economy is almost not engaged. This is due to the fact that garbage is a completely unique mixture in terms of the number of components. The isolation of substances from it in its pure form is a very time–consuming and expensive matter. Effective and simple ways of recycling garbage have not yet been found. This is a matter of the future, but you can already offer methods for separating some waste components. You have been given a mixture of table salt, sand, iron powder, polyethylene granules, modeling garbage, as well as components of this mixture in its pure form. Try to find simple and effective methods of separating this mixture. Determine the mass fraction of each component in the mixture.

Conclusions. Case technology contributes to:

- the development of personal qualities of the student, the ability to develop;
- solutions, to argue and defend their point of view;
- development of the student's communicative qualities;
- development of the student's initiative.

Thus, the case method is a good tool for organizing classes on the formation of meta–subject competencies.

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