

USING THE CASE STUDY METHOD IN TEACHING CHEMISTRY

Saydakhmetova Shakhnoza*; Fakhriddin Khayitov**

* Associate Professor Ph. D,
Tashkent State Pedagogical University Chemistry,
Teaching Methodology, etc,
UZBEKISTAN

Email id: Saydaxmetova_shaxnoza77@mail.ru

**Head of the Department of General Education Sciences,
Academic Lyceum at Tashkent State Law University,
UZBEKISTAN

Email id: fahriddin_hayitov7777@mail.ru

DOI: 10.5958/2249-7315.2022.00362.8

ABSTRACT

In the light of the modernization of education in Uzbekistan, the position of the teacher is fundamentally changing. It ceases to be, together with the student, the bearer of "objective knowledge", which he is trying to convey to the student. Its main task is to motivate students to show initiative and independence. Teacher must organize independent activities of students in which everyone could realize their abilities and interests. In fact, it creates conditions, a "developing environment" in which it becomes possible the development by each student at the level of development of his intellectual and other abilities of certain competencies, in the process of realizing his interests and desires in chemistry, the efforts made, taking responsibility and taking actions towards the goals set.

KEYWORDS: *Case-Technology, Technological Features, Case Development Criteria, Pedagogical Activity, Presentation, Independence Of Thinking.*

INTRODUCTION

In the organization of this kind of activity, one of the promising learning technologies is the so-called case-technology (case-study). This technology is a synthesis of problem-based learning, information and communication technologies, and project method. The introduction of case technology showed high efficiency when working with students, increased their interest in studying chemistry, improving academic performance in the subject, developing analytical skills, and, finally, most importantly: awareness 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 some problem situation. It combines role-playing games, the project method, and situational analysis at the same time.

Case technology is not a repetition after the teacher, not a retelling of a paragraph or an article, not an answer to a teacher's question, it is a concrete analysis situation, which makes you raise the layer of acquired knowledge and apply them in practice. This technology helps to increase students' interest in the subject being studied, develops in schoolchildren such qualities as social activity, communication skills, the ability to listen and correctly express their thoughts.

Case technologies are a tool that allows you to apply theoretical knowledge to solving practical problems. This technology contributes to the development of students' independent thinking, the

ability to listen and take into account an alternative point of view, to express their own reasonably. Using this method, students have the opportunity to demonstrate and improve analytical and evaluative skills, learn how to work in a team, and find the most rational solution to the problem. Being interactive method of teaching, the case technology method wins a positive attitude from students, ensuring the development of theoretical provisions and mastering the practical use of the material; contributes to their maturation, forms interest and positive motivation in relation to learning.

At the same time, this method also acts as a teacher's way of thinking, his special paradigm, which allows him to think and act differently, to renew his creative potential. When using this technology and teaching, as practice shows, the classic defect of traditional teaching, associated with the "dryness", not the emotionality of the presentation of the material, is overcome. Classification of case technology and its features. Case - the presentation contains a story about any situations, problems, ways to solve them, conclusions. Case - illustration contains a small amount of data used for confirmation. Case - a practical task contains a small or medium amount of information in digital form or in the form experiment. A case with structured questions contains a list of questions after the main text.

Cases are "dead" and "live". "Dead" cases include cases that contain all the information necessary for analysis. To "revive" the case, it is necessary to build it in such a way as to provoke students to search for additional information for analysis. This allows the case to develop and remain relevant for a long time. According to the type of result obtained, cases are divided into problem and project cases. In problem situations, the result is the definition and formulation of the main problems, sometimes the formation of a problem field and always an assessment of the complexity of the solution. For project cases, the result is a program of actions to overcome the problems that have arisen in the situation. According to the source of information. In this case, the description of real situations taken from practice, literature or the experience of a teacher is of great interest.

At the same time, often in educational practice, descriptions of situations are used that are conditional, developed by teachers for didactic purposes. According to the subject of presenting information about the situation. In some cases, it can be a teacher, in others it can be a student or an entire decision educational group, representing the case of interest for analysis and making within the educational process. Technological features of the method:

1. Represents a specific type of research analytical technology, i.e. includes operations of the research process, analytical procedures.
2. Acts like technology of collective learning, the most important components of which are work in a group (or subgroups) and mutual exchange of information.
3. It consists in the preparation of procedures for immersing the group in the situation, the formation of the effects of knowledge multiplication, insight, the exchange of discoveries, etc.
4. Integrates developmental learning technologies, including procedures for individual, group and collective development, the formation of diverse personal qualities of students.
5. A specific kind of project technology, in which the formation of a problem and ways to solve it on the basis of a case, which simultaneously acts as a technical task and a source of information for understanding options for effective actions, takes place.
6. Concentrates in itself significant achievements in the technology of "creating success". It provides for activities to activate students, stimulate their success, and emphasize the achievements of students. It is the achievement of success that one of the main driving forces of the method, the formation of stable positive motivation, the increase in cognitive activity.

Requirements for the case and criteria for its development. The basis of case technology is a ready-made case (situation), as a set of interrelated facts and phenomena corresponding to reality. Case requirements: correspond to a clearly defined purpose of creation; have an appropriate level of difficulty; illustrate several aspects of the problem being solved; be up to date and today; illustrate typical situations; develop analytical thinking; provoke discussion; have multiple solutions. Case development criteria:

correspondence of the problematic of the case to the content and didactic goals of the subject; definition of educational topics on which this case is based; sufficient level of knowledge of students in the subject area of the case. Pedagogical activity when working with case technology. There are 3 possible strategies for the teacher's behavior in the course of working with a case: 1. The teacher will give clues in the form of additional questions or (additional) information; 2. Under certain conditions, the teacher will give answer; 3. The teacher can do nothing (remain silent) while someone is working on a problem. It is recommended to solve cases in 7 stages: 1. Familiarization with the plot. (3-5 minutes) 2. Problematization - the discovery during a group discussion of a contradiction in the plot, the definition of what its "strangeness" is. (3-4 minutes) 3. Formulation of the problem and selection of its best formulations (frontal brainstorming followed by discussion). (3-4 minutes) 4. Proposing hypothetical answers for a problematic question (brainstorming within small groups) 3-4 minutes. 5. Testing hypotheses based on plot information and other available sources (group work). Up to 15 minutes. It is necessary to provide students with the opportunity to use any literature, textbooks, and reference books. In some cases, the teacher may be required to prepare a printout with the information necessary to solve the case that is not available in textbooks and reference books available to students. However, the volume of such a printout should not exceed 1-2 pages of text. 6. Presentation of the solution. No more than 3 minutes per group. 7. Reflection of the progress of the case solution. (3-4 minutes) The case technology method develops the following skills: 1. " Analytical skills. These include: the ability to distinguish data from information, classify, highlight essential and non-essential information, analyze, present and extract it, find gaps in information and be able to restore them. Think clearly and logically. This is especially important when the information is not of high quality. 2. Practical skills. Forms the ability to use theoretical knowledge in everyday practice. 3. Creative skills Solving problems that cannot be found logically. 4. Communication skills.

The case method allows demonstrating academic theory from the point of view of real events. It allows students to be interested in studying the subject, promotes the active assimilation of knowledge and skills in collecting, processing and analyzing information that characterizes various situations. " A good case, as a rule, teaches us to look for non-trivial approaches, since it does not have the only correct solution. " I especially appreciate the independence of thinking in the method of working with " cases," says Peter Ekman.in business, there are five or six ways to solve a problem. And although there is a classical solution for every situation, this does not mean at all that it will be optimal. You can make a good decision, and its results will lead to bad consequences. You can make a decision that everyone around you consider unsuccessful, but it will lead you to the desired results.

LIST OF REFERENCES:

1. Mirziyoyev Sh.M. Together we will build a free and prosperous, democratic state of Uzbekistan. – T .: " O'zbekiston" , 2017. - 32 p
2. Mirziyoyev Sh.M. The rule of law and the protection of human interests are the key to the development of the country and the well-being of the people. – T .: " O'zbekiston" , 2017. - 48 p

3. Semenov I. N., Maksimov A. S., Makarenya A. A. Chemistry and scientific and technical development: a book for students of 9-10 grades. - M.: Marifat, 1988. - 176 p: ill.
4. Legasov V. A. Problems of the development of chemistry: an achievement for the future - M.: Bilim, 1987. - 32 p.: sick - (Innovation in life, science, technology)
5. Chemistry and modernity: a guide for teachers / Yu. Under the editorship of D. Tretyakov. - M.: Education, 1985. - 224 p. - (B-ka chemistry teacher).
6. Ershov, Yu.A. General chemistry. Biophysical chemistry. Chemistry of biogenic elements: Textbook / Yu.A. Ershov, V.A. Popkov, A.S. Berland. - Lyubertsy: Yurayt, 2015. - 560 p.