

## INTERACTIVE LEARNING METHODS USED IN THE EFFECTIVE ORGANIZATION OF TECHNOLOGY COURSES

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### ANNOTATSIYA

Maqolada Texnologiya fani mashg'ulotlarini samarali tashkil etishda foydalaniladigan ayrim intrefaol ta'lim metodlariga to'xtalib o'tilgan. "SWOT-tahlil", Xulosalash (Rezyume, Veer), "Keys-stadi", «FSMU», "Tushunchalar tahlili", Venn Diagrammasi metodlari texnologiya faniga mos namunalar bilan asoslab berilgan.

**Kalit so'zlar:** Interfaol, metod, "SWOT-tahlil", Xulosalash (Rezyume, Veer), "Keys-stadi", «FSMU», "Tushunchalar tahlili", Venn Diagrammasi.

### ABSTRACT

The article focuses on some interactive educational methods used in the effective organization of technology classes. "SWOT-analysis", Summarizing (Resume, Veer), "Case-study", "FSMU", "Concept Analysis", Venn Diagram methods are justified with examples suitable for technology science.

**Keywords:** Interactive, method, "SWOT-analysis", Summary (Resume, Veer), "Case-study", "FSMU", "Concept analysis", Venn Diagram.

**Аннотация:** Статья посвящена некоторым интерактивным образовательным методам, используемым в эффективной организации технологических занятий. Методы «SWOT-анализ», «Подведение итогов», «Кейс-стади», «ФГМУ», «Концептуальный анализ», «Диаграмма Венна» обосновываются примерами, подходящими для технической науки.

**Ключевые слова:** Интерактив, метод, «SWOT-анализ», Резюме (Резюме, Вир), «Кейс-стади», «ФГМУ», «Концептуальный анализ», Диаграмма Венна.

### INTRODUCTION

Currently, modern teaching methods are widely used in the educational process. The use of modern teaching methods leads to high efficiency in the teaching process. It is appropriate to choose these methods based on the didactic task of each lesson. While preserving the traditional form of the lesson, enriching it with various methods that activate the activity of the students will lead to an increase in the level of mastery of the students. Today, in a number of developed countries, the methods that form the basis of great experience in the use of modern pedagogical technologies guaranteeing the effectiveness of the educational process are called interactive methods. Interactive educational methods are currently the most common and widely used methods in all types of educational institutions. At the same time, there are many types of interactive educational methods, suitable for the purposes of implementing almost all tasks of the educational process. In practice, it is possible to select the ones that are suitable for specific purposes and use them accordingly. This situation has created the problem of choosing the right interactive educational methods to achieve certain goals.

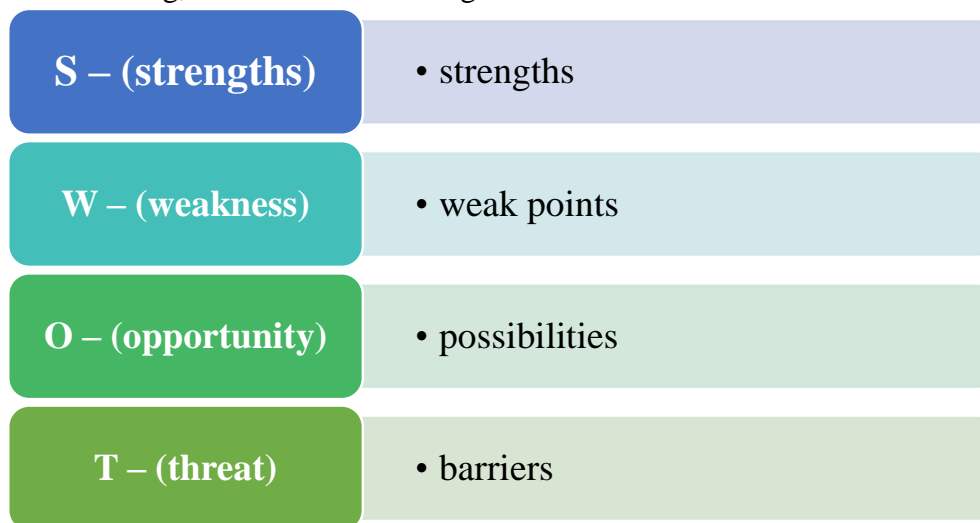
For this purpose, the lesson process should be organized rationally, the teacher should increase the interest of the learners and constantly encourage their activity in the educational process, divide the educational material into small pieces, and open their contents intellectually. It is required to use methods such as attack, small group work, debate, problem situation, guided text, project, role play and encourage learners to do practical exercises independently. The interactive method is to solve an activity or problem in a mutual dialogue, in the course of thinking in a mutual debate, with unity. The advantage of this method is that the entire activity teaches the student to think independently and prepares him for an independent life.

When choosing interactive methods of teaching, the purpose of education, the number and capabilities of students, the educational and material conditions of the educational institution, the duration of education, the pedagogical skills of the teacher, etc. are taken into account. Below we will touch on some interactive educational methods used in the effective organization of technology classes.

## MAIN PART

### "SWOT-Analysis" Method.

The purpose of the method is to find ways to solve problems by analyzing and comparing existing theoretical knowledge and practical experience, strengthening knowledge, repeating, evaluating, forming independent, critical thinking, non-standard thinking.



Example: Download the SWOT analysis of types of saws in this table.

<b>S</b>	Strengths of using dast saw types	The large number of users...
<b>W</b>	Weaknesses of using saw types	The saw quickly becomes dull, the handle breaks...
<b>O</b>	Possibilities of using saw types (internal)	Lots of choice...
<b>T</b>	Barriers (external)	Failure to follow safety techniques...

### Summary (Resume, Veer) method.

The purpose of the method: This method is aimed at studying complex, multifaceted, problematic topics as much as possible. The essence of the method is that it provides the same information on different branches of the topic, and at the same time, each of them is discussed in separate aspects. For example, the problem is studied in terms of positive and negative sides, advantages, virtues and disadvantages, benefits and harms. This interactive method provides an opportunity to successfully develop critical, analytical, clear logical

thinking and to systematically express and defend students' independent ideas and opinions in written and oral form. The "Summary" method can be used in lecture sessions in the form of individual and pair work, in practical and seminar sessions in the form of small group work in order to strengthen, analyze and compare knowledge on the subject.

**Procedure for implementing the method:**



the trainer-teacher divides the participants into small groups of 5-6 people;



after familiarizing the participants with the purpose, terms and procedure of the training, distributes handouts to each group containing the parts necessary to analyze the general problem;



each group thoroughly analyzes the problem assigned to it and makes a written statement of its opinions for distribution according to the recommended scheme;



at the next stage, all groups will make their presentations. After that, the trainer summarizes the analysis, fills in the necessary information and concludes the topic.

**Example:**

Wood materials					
Physical property		Chemical property		Technological property	
Advantage	Disadvantage	Advantage	Disadvantage	Advantage	Disadvantage
<b>Summary:</b>					

**"Case-study" method.**

"Case-study" is an English word ("case" - specific situation, event, "stadi" - to study, analyze) aimed at carrying out teaching based on the study and analysis of specific situations is a method. This method was first used in Harvard University in 1921 in the order of using practical situations in the study of economic management sciences. In a case, open information or a specific event can be used as a situation for analysis. Case actions include: Who, When, Where, Why, How, What.

**Stages of implementation of the "case method".**

The work stages	Form of activity and content
<b>Stage 1:</b> Introducing the case and its information support	<ul style="list-style-type: none"> <li>✓ individual audio-visual work;</li> <li>✓ familiarization with the case (in text, audio or media form);</li> <li>✓ generalization of information;</li> <li>✓ information analysis;</li> <li>✓ identifying problems</li> </ul>
<b>Stage 2:</b> Clarifying the case and defining the educational task	<ul style="list-style-type: none"> <li>✓ individual and group work;</li> <li>✓ determining the priority hierarchy of problems;</li> <li>✓ definition of the main problem situation</li> </ul>
<b>Stage 3:</b> Searching for a solution to the educational task by analyzing the main problem in the case, developing ways to solve it	<ul style="list-style-type: none"> <li>✓ individual and group work;</li> <li>✓ development of alternative solutions;</li> <li>✓ analysis of opportunities and obstacles of each solution;</li> <li>✓ choosing alternative solutions.</li> </ul>
<b>Stage 4:</b> Formulation and justification of the case solution, presentation.	<ul style="list-style-type: none"> <li>✓ individual and group work;</li> <li>✓ substantiating the possibilities of alternative options in practice;</li> <li>✓ preparation of creative project presentation;</li> <li>✓ to highlight the practical aspects of the final conclusion and solution of the situation</li> </ul>

**Case.** A defect occurred during the process of cutting wood material. What do you do in this situation?

**"FSMU" Method**

The purpose of the technology: This technology serves to draw specific conclusions from the general thoughts of the participants, assimilation and conclusion of information by comparing and contrasting, as well as forming independent creative thinking skills. It is recommended to use this technology in lecture classes, reinforcement, when asking about the topic, giving homework and analyzing the results of practical training.

Technology implementation procedure:

- participants are offered a final conclusion or idea related to the topic;
- each participant will be distributed papers with the stages of FSMU technology;
- the relationships of participants are presented individually or in groups.



FSMU analysis is the basis for faster and successful assimilation of professional and theoretical knowledge by participants based on practical exercises and existing experiences.

Sample.

**Opinion:** "In carpentry, more hardwoods are used."

**Task:** Analyze your attitude to this idea through FSMU.

**"Analysis of concepts" method.**

The purpose of the method: this method is used in order to determine the level of mastery of the basic concepts of the subject by students or participants, to independently check and evaluate their knowledge, as well as to diagnose the level of preliminary knowledge on this new subject. Procedure for implementing the method:

- participants are introduced to the training rules;
- students are given handouts with the names of words and concepts related to the topic or chapter (individually or in groups);
- students provide written information about the meaning of these concepts, when and in what situations they are used;
- at the end of the set time, the teacher will listen to the correct and complete explanation of the given concepts or show it through a slide;
- each participant compares his personal attitude with the given correct answers, identifies the differences and checks and evaluates his level of knowledge.

**Example:** "Analysis of basic concepts in the module"

Concepts	What do you think this concept means?	Additional Information
Machine tool		
Detail		
Compound		
Extension		

**Note: The second column contains comments from participants.**

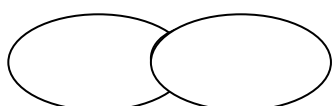
**Venn Diagram Method.**

Purpose of the method: This method is a form of organizing teaching through a graphic image, which is represented by the image of two intersecting circles. This method makes it possible to consider the analysis and synthesis of various concepts, bases, ideas through two aspects, to determine their common and distinguishing aspects, and to compare them.

Procedure for implementing the method:

- the participants are put into pairs of two and they are invited to write down in circles the specific, different aspects (or opposites) of the considered concept or basis;
- at the next stage, the participants are divided into small groups of four, and each pair introduces its analysis to the group members;
- after listening to the analysis of pairs, they get together, find the common aspects (or differences) of the problem or concepts under consideration, summarize and write in the intersecting part of the circles.

**Example:** By types of manual and mechanical tools



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