



INCREASING STUDENT ACTIVITY IN LECTURES ON THE SUBJECT OF STRUCTURAL MECHANICS

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Annotation:

This article shows that it is possible to use interactive methods of "brainstorming", "working in small groups", "role-playing games" in the organization of lectures on the subject of structural mechanics.

Keywords: construction mechanics, brainstorming, small group work, role-playing games, student, static uncertainty level, external and internal static uncertainty frame.

Today, the education system is on the verge of major changes. The coronavirus pandemic, which shook the whole world, was a major blow to the education system in particular. The traditional educational process in schools, lyceums, vocational colleges, institutes and universities is no longer possible. Classes are transferred to the modular system, which is conducted via the Internet. Professors need to use more interactive methods to make lessons more understandable to students. Classes in interactive methods allow students to think creatively, actively solve the information received, express themselves freely, take personal initiative, find solutions to problems in groups, work together, express themselves in writing in a fluent manner. The main goal of the interactive method is to create an environment for active, free thinking of the student by creating the most favorable conditions for the learning process. It fully demonstrates its intellectual potential and ensures the quality and effectiveness of teaching [1-6].

Research on the application of interactive methods in the educational process is presented in the works [1-10]. Evidence for a method of increasing student activity in theoretical mechanics classes is given in [1-2]. The results of the application of the Venn diagram to the educational process are described in [3,5,9]. The transition of lectures using the cluster method is given in the article [6]. The results of the basics of technical sciences are shown in the works on the production of electricity [7,8,10].

In the organization of education through the Internet, enriching it with methods that activate the activities of a variety of learners, giving the learning material to the student in the traditional form, leads to an increase in the level of mastery of learners. To do

this, the lesson process should be organized rationally, the teacher should constantly stimulate the interest of students in the learning process, divide the teaching material into small pieces, open their content, brainstorm, work in small groups, debate, problem situation, orientation. is to use methods such as text, project, role-playing games.

The “brainstorming” method is a method of gathering free thoughts and opinions expressed by learners on a problem and using them to come to a definite solution. There are written and oral forms of the "mental attack" method. Each student expresses his / her opinion orally to the question asked by the educator in oral form. Learners state their answers clearly and concisely. In the written form, students write their answers to the question on paper cards in a short and visible way. The answers are fastened to the board (using magnets) or to the “pinboard” board (using needles). In the written form of the method of "mental attack" it is possible to group the answers according to certain characteristics. When used correctly and positively, this method teaches a person to think freely, creatively and non-standardly.

The following (Figure 1) shows the application of the mental attack method to the subject of the science of structural mechanics. Using the method, the edges of the static indeterminate frame subject are revealed to the students.

The method of "work in small groups" is a creative work in the classroom, aimed at learning the learning material or completing the task, dividing students into small groups in order to activate them.

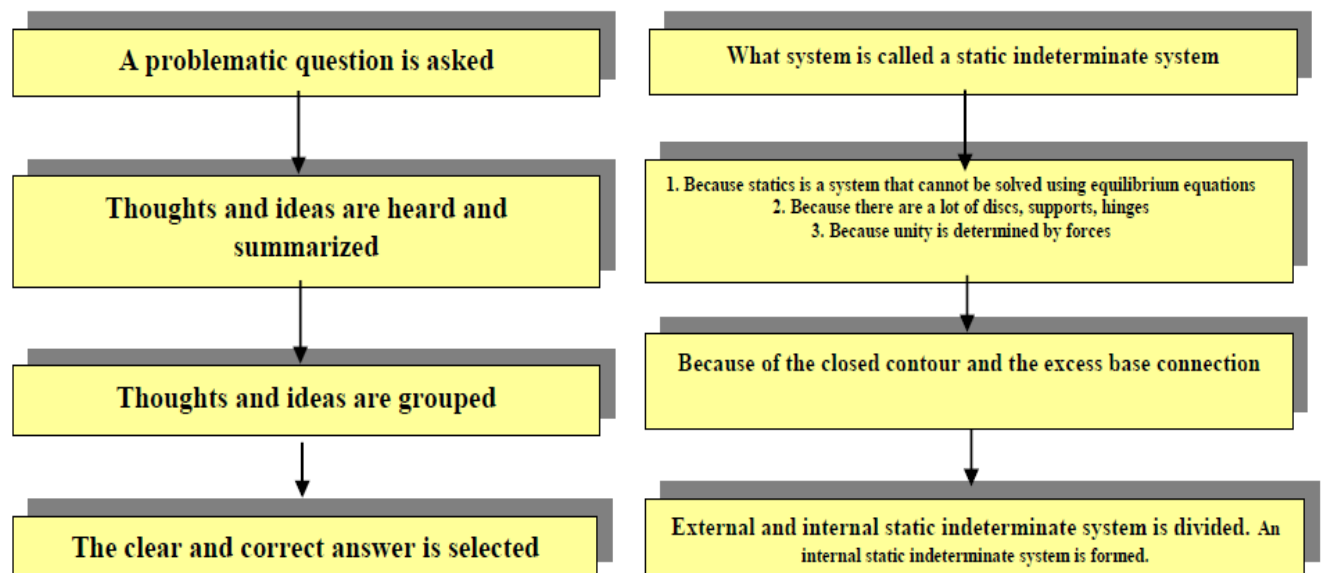


Figure 1. The structure of the method of "mental attack"



When this method is used, the learner has the right to work in small groups, to actively participate in the lesson, to take the lead, to learn from each other and to appreciate different perspectives.

When using the “work in small groups” method, the educator is able to save more time than other interactive methods. Because the educator is able to engage and evaluate all learners on the topic at the same time. The structure of the method of "Working in small groups" is given below for the topic of construction mechanics "Calculation of static indeterminate frames by force" (Figure 2). As a result, students will be able to break down the topic into components, find the connection between them, and identify the most important ones.

The role-playing method is a method in which learners demonstrate different life situations by staging them.

The difference between role-playing games and business games is that there is no evaluation. At the same time, while role-playing learners are content to play roles in a scenario developed by the educator, role-play learners are free to decide what tasks to perform in a given situation. In a role-playing game, the participants work together to solve a problem, such as a business game. Role-playing games develop interpersonal skills in learners.

The role-playing educator should have prior knowledge of the learners. Because in playing roles, the individual character and behavior of each learner plays an important role. The topics chosen should be appropriate to the level of mastery of the learners. Role-playing games help to motivate learners in the learning process. The structure of the role-playing method is given above for the subject of structural mechanics (Figure 3).

In short, the use of interactive methods such as "brainstorming", "working in small groups", "role-playing games" in teaching students the subject of structural mechanics increases the level of understanding, improves mastery, and ultimately improves the quality of education.



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