

A Way To Increase Student Activity In The Organization Of Lectures

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Abstract – At the heart of the great work carried out in the field of education in our country is the important task of training highly qualified specialists in the national economy, educated in accordance with modern requirements. Solving this problem requires a number of important tasks for university professors. The organizers of this task are to educate students on the basis of modern pedagogical technologies, to form the ideological immunity of young people, to ensure the formation of a harmonious and mature person. Special attention should be paid to these aspects, especially in the training of engineers who are planned to work in the leading plants of the country after graduation. Therefore, increasing the effectiveness of training future engineers in all aspects is an urgent task today.

Keywords – Lecture, pedagogical technology, theoretical mechanics, independent preparation, question-answer, quality of education, summarizing, crossword puzzle.

I. INTRODUCTION

The basics of the method under study and the initial results of its application are detailed in the works [1,2]. In the given works [4,5] the examples of application of the Venn diagram in the organization of lectures on theoretical mechanics are given. The importance of the effective use of the cluster method in the teaching process is also described in [3].

II. MAIN PART

At the Department of "Resistance of Materials and Mechanics" of the Institute for students of most disciplines, the subject of theoretical mechanics is taught to future engineers at a high level. Below we would like to share some ideas about the elements of advanced pedagogical technology and the results of their application in the lectures on theoretical mechanics in the field of construction of buildings and structures, construction of engineering communications and electrical engineering.

Students of the specified directions of study study the subject of theoretical mechanics in 1-2 semesters. Several methods can be used to teach students the basics of science in lecture sessions. The author uses a number of methods to increase student activity. One such method is the independent preparation for the lesson and the question-and-answer method. To use this method, at the beginning of the semester, the lecturer provides students with detailed information about the rating system, intermediate and final control, as well as the criteria for obtaining their scores. From the second lesson, the student reads each new topic independently at home several times, summarizes the topic based on what he / she understands and composes 5-10 questions on the topic. The session begins with a question-and-answer session based on a new topic prepared at home. The oldest, fair student or group leader in the group is assigned to record the results of the question and answer participants. The student brings the topic to the attention of his / her classmates and one of the students in the group answers it, then moves on to the next question after making sure that the answer

is correct. If no one can answer the given question, then the student who asked the question answers his own question. The teacher's involvement in the audience in this case is passive management of the process. Within 15-20 minutes, the repetition of the new topic at the level understood by the students is completed and the teacher assigns points to the students who actively participated in the lesson [1,2]. Then the professor begins to explain the new topic. He dwells less on the part of the new topic that the students understand better, explains in detail the part of the subject that is less clear to them, explains the lesson to the students with problematic situations and questions. At the end of the lesson, the speaker announces the topic of the new lesson and gives his methodological recommendations on how to prepare for it, what features to focus on, which sites to use on the Internet.

A number of positive aspects of this method of organizing lectures are based on the results of pedagogical experience. The faculties of construction and power engineering allow us to draw the following conclusions from the results of this experiment in the lectures conducted by the author in the field of education:

- The student develops the ability to study science independently and develops the skills of independent learning.
- The student has the experience of summarizing the basics of science.
- The student develops the ability to ask questions on some parts of the subject.
- As a result of the student's participation in the question-and-answer discussion, he develops the skills to express his opinion and defend it.
- The teacher will be able to assess students more during the lesson. These assessments then serve as the basis for the intermediate and final evaluation scores.
- The fact that the student makes a syllabus makes it possible not to waste time for students to write in class and to provide additional materials during this time.
- This method gave the best results when there were 40-50 students in the stream.
- In some separate groups of 20-25 students, the use of this method gave high results.
- As a result of using this method in the classroom, student mastery was 15-20% higher than in other groups.
- There are some shortcomings in the application of this method to all subjects of science.

Here it was possible to draw much broader conclusions than in the previous [1,2] studies.

Thus, the question-answer method develops students' independent thinking skills, encourages them to study the subjects in advance, teaches them to formulate questions from the subject, teaches them to express their thoughts with questions, develops students' skills of independent work with science and leads to increased student activity.

Some shortcomings of this question-and-answer method have also become apparent. In particular, the use of this method in lectures with groups of 70-90 students is much less effective. Because some students around 10-20 percent do not actively participate in the lesson. Some 25-30 percent of students are very active. Therefore, after a certain session, the teacher should try to add inactive students to the list of active students. Active students are given individual assignments that go deeper into the basics of science, include them in the list of gifted students, involve them in science circles, teach them the basics of research. Inactive students can be added to the ranks of activists by preparing for a given topic in advance. In this case, the student is given a homework assignment to prepare for an easier topic of their choice, and it is listened to in the next lesson.

In order to increase the level of knowledge of students in the subject, the teacher suggested them to create a "crossword puzzle" consisting of key words and phrases of theoretical mechanics. This method is characterized by the fact that students strive for independent research, require more advanced knowledge in all areas of science, fully mobilize their intellectual potential.

The author used this method for students of the above areas of study from the end of the semester of the academic year. As a result, 25-35% of the students in the group successfully completed the crossword puzzle and handed it to the teacher. If we take into account that 20-35% of students in the group master well and excellent grades, then it turns out that the crossword puzzle is formed mainly by students with high grades [1,2]. In practice, it turned out to be the same.

III. CONCLUSIONS

In short, as a result of students' independent preparation for the lesson and the use of question-answer method, the level of knowledge of the trained specialists will increase in quality, gain in-depth knowledge, and he will become a comprehensively mature specialist.

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