

APPLICATION OF PEDAGOGICAL TECHNOLOGIES IN THE TEACHING OF THE SUBJECT “CONSTRUCTION MECHANICS”

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Abstract. *In the educational process of higher education, students are shown the role of the use of innovative pedagogical technologies in the development of the subject “Construction Mechanics”, as well as some methods with examples are given.*

Keywords: *innovative methods, Construction mechanics, “brainstorming”, “lily flower”.*

Today, in higher education, students should be informed about the selection of modern educational technologies in the course of classes, the goals that are carried out using active technologies and the tasks, features of the main educational program, as well as the content of a particular subject to the student contingent. As a result of the ability to use modern teaching and diagnostic methods and technologies, the teacher must apply innovative pedagogical technologies (developing, interactive teaching methods and techniques).

The disciplines of “Engineering Dynamics”, “material resistance”, “structural mechanics”, “building and structure earthquake resistance” and “priority dynamics” are of great importance in conveying mature, competent structural engineers in the construction industry. The teacher should make extensive use of innovative pedagogical technologies in the delivery of these subjects to students during the course of the lesson. As a result of the use of innovative pedagogical technologies in the course of the lesson, the following problems can be solved:

- active involvement of each student in the process of mastering education;
- teaching successful communication skills: listening and hearing, building dialogue, asking questions to understand;
- increase motivation;
- development of independent activity skills;
- ability to work in a team.

With interactive educational technology, all students are involved in the educational process. The use of this technology is based directly on the communication between students and the teacher. In the process of interactive teaching technology, the teacher loses his central role and becomes the organizer of the educational process. Cooperation goes to the first place.

An example of interactive technology is a master class, in which the teacher acts as a master, consultant, organizer, and also reveals the creative potential of the student in the delivery of creative educational activities, knowledge. On the example of this, we can see in the lesson of the science of “construction mechanics” on the topic “bending moment, construction of transverse force and longitudinal force epics in the calculation of a static fuzzy frame in a force method”, “mental attack”, “lily flower”, as well as the widespread use of color presentation and dispensing materials.

When the "mental attack" method is used, students are asked a question by the teacher, and in a short time the students respond. In this process, mutual cooperation between the teacher and the student goes to the main place. When using this method, the following questions can be used:

1. What is said to be a static indeterminate system?
2. What is Rama?
3. Why is it called the method of power?
4. How is the degree of uncertainty determined by the power method of a static fuzzy system?
5. What is the main system and how is it selected?
6. How many will be the main system in the power method?
7. What does the number of canonical equations depend on?
8. What are the proportions of the canonical equation and free terms?
9. How are unit and external epics built?
10. Write down the formulas of Mor, Vereshagin and Simpson.

With this method, students' opinions and honors are concentrated in the lesson, past topics are remembered, and students' interest in the lesson increases. One of the most optimal and most commonly used methods is "lily flower". We can use this method to repeat past topics and evaluate their knowledge. The procedure for applying this method to the subject is as follows:

- formation of small groups;
- distribution of ready-made "lily flower" to each group;
- take the time to complete;
- work on errors.

In the science of "construction mechanics", we can observe the structural "lily flower" "on the topic" in the power calculation of static irregular systems".

The use of the "lily flower" method is recommended at the stage of mastering any topic. Therefore, the student must independently study the material, as well as complete the "lily flower" based on the basis of the graphic work he is calculating. In organized small groups, students should listen and observe the feedback of their mutual partners. This method requires basic definitions, the procedure for performing work on account graphics work, memorization of past topics, as well as group work.

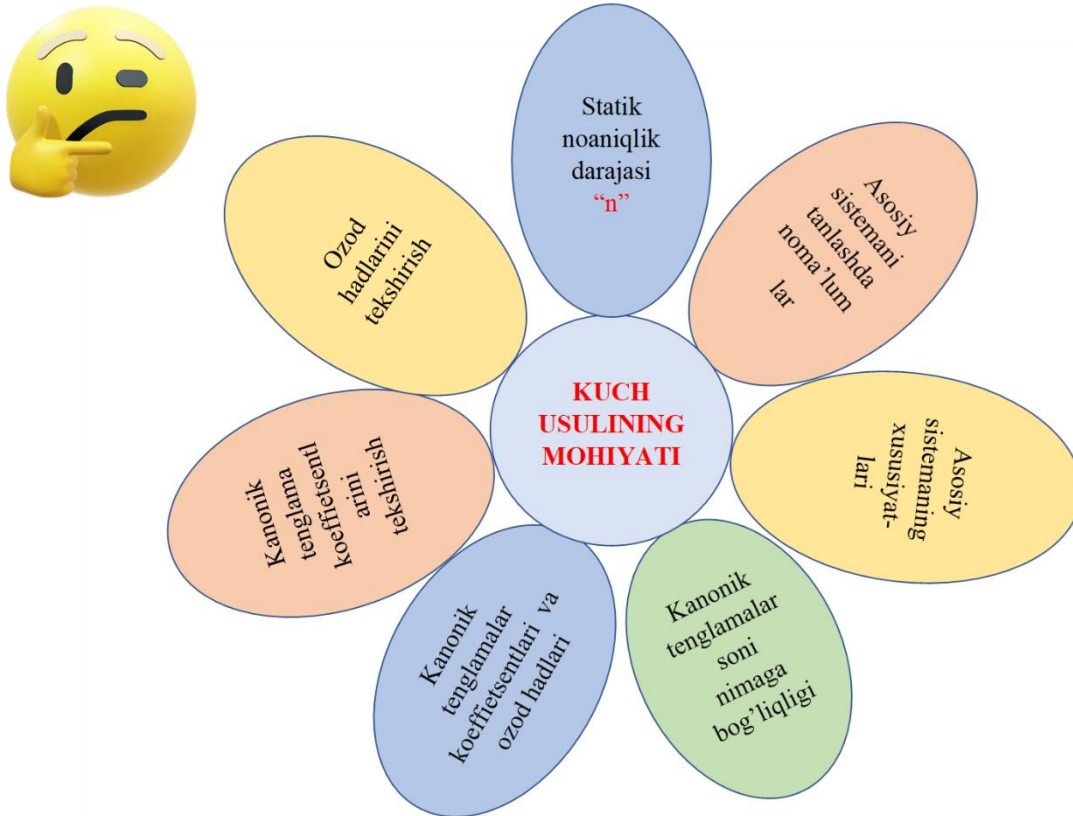
During the lesson, the use of color presentation and handouts can significantly enhance the effectiveness of explaining the subject matter. These visual aids can help students better understand the topic and retain the information being conveyed.

Color presentation involves using visuals such as PowerPoint slides or whiteboards with different colors to highlight key points or emphasize important concepts. By incorporating color into the presentation, teachers can make the material more engaging and visually appealing, capturing students' attention and keeping them focused throughout the lesson. Colors can also be used to categorize information, making it easier for students to organize and comprehend complex ideas.

Handouts, on the other hand, provide a tangible resource for students to refer to during and after the lesson. These can be in the form of printed materials, worksheets, or even digital files that can be accessed and downloaded. Handouts usually contain summarized information, diagrams, or charts that serve as a supplement to the teacher's explanation. This allows students to have a

physical reference that they can revisit at their own pace, reinforcing their understanding of the subject matter.

The use of color presentation and handouts complements each other in delivering a comprehensive learning experience. While color presentation grabs students' attention and provides a dynamic visual representation of the material, handouts provide a more in-depth and detailed explanation. Together, they cater to different learning styles and reinforce students' understanding of the topic.



the essence of the strength method

1. static uncertainty level
2. unknowns in choosing a main system
3. characteristics of a main system
4. the depending of the number to canonical equations
5. canonical equations, coefficients and free terms
6. checking the coefficients of the canonical equation
7. checking the free terms

Moreover, these visual aids can also assist students with special learning needs or language barriers. For example, color-coding information in a presentation can help students with dyslexia or visual impairments to visually differentiate between different concepts or categories. Handouts can also benefit students who have difficulty processing information in real-time or may require extra time to digest the material.

Incorporating color presentation and handouts into the lesson requires careful planning and consideration. Teachers need to ensure that the visuals are clear, organized, and effectively convey

the information. Additionally, the use of color should be purposeful and not distracting. Handouts should be concise, well-structured, and aligned with the lesson objectives.

These visual aids engage students, facilitate comprehension, and serve as valuable resources for review and reinforcement. By incorporating these techniques into teaching practices, educators can create a more engaging and inclusive learning environment.

Attention was drawn to foreign literature and presentations on the topic "construction of epics of torque, transverse force and longitudinal force bending static Fuzzy Systems in a force method".

Overall, integrating innovative pedagogical technologies into the teaching of "construction mechanics" will greatly benefit students. By incorporating these technologies, students will have a better understanding of the subject matter and be able to apply their knowledge more effectively.

One of the main advantages is that students will be able to make good use of their time. Innovative pedagogical technologies allow for asynchronous learning, where students can access resources and lessons at their own pace. This flexibility enables students to study when it suits them best, resulting in improved time management skills.

Another benefit is that students will have the opportunity to review past topics more easily. With innovative technologies, students can access previous lessons or materials anytime they need clarification or a refresher. This helps reinforce their understanding of the subject matter and allows for easier retention of information.

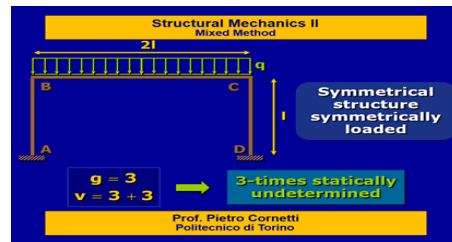
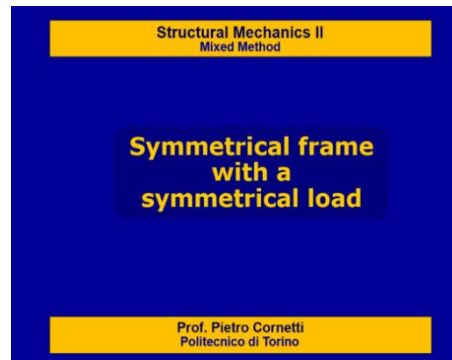
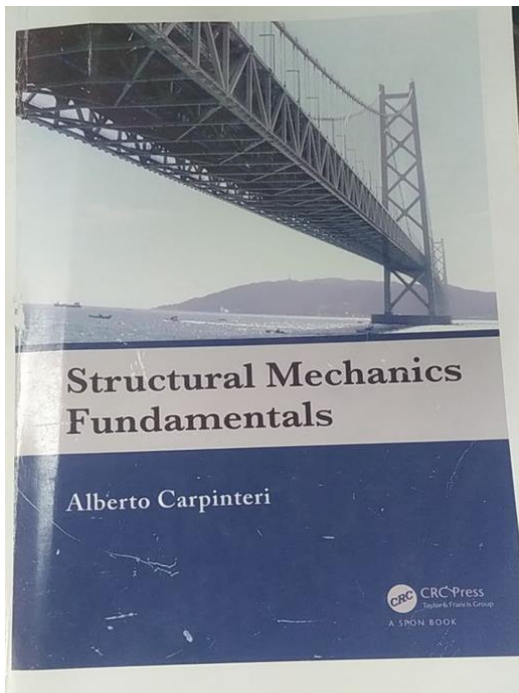
Collaborative learning is also promoted through the use of innovative pedagogical technologies. Students can work in groups, either in person or virtually, to solve problems or complete projects together. This not only enhances teamwork skills but also encourages peer-to-peer learning, where students can learn from each other's perspectives and experiences.

Additionally, the use of innovative pedagogical technologies can make the lesson process more interesting and engaging for students. Interactive presentations, simulations, and virtual labs can bring the subject matter to life and make it more enjoyable for students to learn. This can spark their curiosity and encourage them to explore the topic further.

Lastly, students will have the opportunity to work more independently. With access to online resources and interactive tools, students can take ownership of their learning journey. This promotes self-directed learning skills and fosters independence in studying, which are important skills for lifelong learning.

Integrating innovative pedagogical technologies into the teaching of "construction mechanics" will benefit students in various ways. They will be able to manage their time effectively, review past topics easily, collaborate with peers, have an interesting and engaging learning experience, and develop independence in their studies. These technologies enhance the learning process and enable students to master the subject matter more effectively.

In conclusion, students will be able to apply innovative pedagogical technologies in mastering the science of "construction mechanics", make good use of time, repeat past topics, work in groups, have an interesting course of the lesson process and work more independently.



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