

TEACHING THE SUBJECT OF NOISE AND VIBRATION ON THE BASE OF NEW PEDAGOGICAL TECHNOLOGIES

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Abstract: *This article reveals the content and essence of the subject using the new pedagogical technologies «Venn diagram», «Squinain» and the method of working in small groups on the example of the phrase noise and vibrations.*

Key words: *New pedagogical technology, small group work, venn diagram, sink vein, technological approach, noise, vibration, vibration frequency, amplitude, practical skill*

Pedagogical technology is the most optimal process of knowledge assimilation by creating and applying teaching and learning methods, bringing them into a single system, using all the possibilities of human potential and technical means. Several methods are widely used to achieve mastering levels of educational material in the educational process, in which problems related to the topic are organized on the basis of pedagogical technology.

Developmental education is an educational theory that ensures the educational, educational, spiritual, mental and physical development of students at a certain time, as well as their adaptation to society and life in a rapidly changing world. Every country thinking about its future should be able to purposefully direct all the social influences affecting the person in the life of the society for the development of the person, for him to realize and express his identity. When developing educational technologies are used, the interest of students increases, knowledge turns into skills, and the quality of knowledge increases.

Technologies of developmental education include Boomerang, FSMU, Venn diagram, Fish skeleton, and methods of brainstorming, group work, presentation and reflection.

Developmental educational technologies and methods for teaching can be applied to almost all subjects, including Life Safety. This article reveals the content and essence of the subject in the teaching process using the interactive methods of «Venn diagram» and «Sinkway» using the phrase «Noise and vibration» from the science of life safety. In addition, the use of the method of working in small groups was shown in the teaching of this subject.

1. With the help of «Venn diagram», the signs or characteristics of 2 concepts that are unique and common to both are determined. Here's how to create a Venn diagram using the concepts of «Noise» and «Vibration»:

Noise	Common aspects	Vibration
Reasons for its formation 1. As a result of the operation of machine tools, the shock, friction and sliding of hand tools, the sound is spread in the air.	1. Noise and vibration in its physical nature are mechanical vibrations of solid bodies, gases and liquids.	Reasons for its formation 1. When vibration affects the human body or some of its body parts, it spreads through the tissues and causes the whole body to vibrate.
2. The amplitude of	2. Physical hygienic	2. Vibration frequency is

<p>mechanical vibrations in noise is the largest indicator of pressure changes during compression and rarefaction, and the frequency is 1 s. number of complete oscillations. Sound pressure is measured in bars. A sound wave has a certain mechanical energy measured per 1 cm²</p> <p>3. Effects of noise on the body</p> <p>Harmful effects of noise include dizziness, changes in the nervous and cardiovascular system, stabbing pain in the heart area, and some people experience sore throat and heavy sweating when talking.</p> <p>4. Noise prevention preventive measures - the student fills in</p>	<p>description.</p> <p>The common aspects of noise and vibration are the frequency and amplitude of vibration.</p> <p>3. General aspects of the impact of noise and vibration on the body</p> <p>Noise and vibration have a negative effect on human performance. Gets an occupational disease. It leads to accidents as a result of reduced attention and severe fatigue.</p> <p>4. The student finds common and different aspects of noise and vibrations.</p>	<p>measured in hertz, amplitude in micrometers or millimeters. A point oscillating with a certain frequency and amplitude moves with a continuously varying speed and acceleration.</p> <p>3. Effects of vibration on the body.</p> <p>Fluctuation is primarily observed in neutrotrophic and hemodynamic disorders, occurrence of spastic-atonic conditions in blood vessels, loss of sensitivity of fingers and palms, and changes in bone joints.</p> <p>4. Preventive measures for vibration prevention - the student fills in</p>
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2. Sinkvain - interactive method helps to develop students' thinking ability based on a different approach to the problem in the process of disseminating and summarizing information.

1. ___ noun (who, what);
2. ___ ___ quality (how, what);
3. ___ ___ ___ verb (task, function);
4. ___ ___ ___ association (imagination, what came to mind)
5. Synonym (similarity) of the noun ___.

«Sinkway»

For example: Let's make a syncline to the phrase «oscillation amplitude»:

1. The level of pressure and force of drumming
2. The harder it is, the greater the sound pressure and the louder the sound;
3. Sound pressure is measured in bars;
4. When speaking in a whisper, the sound pressure is about 0.01 bar at a distance of 1m;
5. Oscillation frequency

The method of working in small groups is important in the process of teaching students. That is, discussion and evaluation is an important factor. At the final stage, the groups will provide information on the results of the work. For this, each group appoints its own captain. If necessary, the opinions expressed on the results of the activity will be recorded by the pedagogue.

The results of working in small groups are evaluated by the pedagogue. In this case, correct and accurate performance of activities, time consumption is the main criterion. We will consider the advantages and disadvantages of the method of working in small groups.

It is important to clarify the rationale of the problem solution in the group. If there is enough time, groups can also ask each other questions while arguing this or that point.

Advantages of working in small groups:

- leads to better mastering of teaching content;
- improves communication skills;
- there is an opportunity to save time;
- all students are involved;
- Self- and peer-assessment will be available.

Disadvantages of the method of working in small groups:

- since there are weak students, strong students are also likely to get low marks;
- the ability to control all students will be low;
- mutual negative competition between groups may appear;
- a conflict may arise within the group.

Below is an application of the “Working in small groups” method in the teaching of “Noise, Vibration and Radiation” topic:

1. The direction of activity is defined. Interrelated issues are determined by the topic:

- How is noise generated?
- Humans perceive sounds with frequencies in the range of Hz.
- What preventive measures are developed to prevent noise?

2. Small groups are defined. Students can be divided into groups of 3-6 people: each group gives itself a name (for example, “Noise”, “Vibration”, etc.)

3. Small groups begin to perform the task. They write their thoughts on the given issue on a sheet of paper (for example, what preventive measures are developed to prevent noise?)

4. The teacher gives clear instructions and directs (what to pay attention to when finding a solution to the problem).

5. Small groups make a presentation (each group explains the information written on the sheets on solving the problem on the board).

6. Completed tasks are discussed and analyzed.

7. Activity of small groups is evaluated (students of the group and the activity of the small group as a whole are evaluated. Actively participating students are encouraged)

Boredom aspects of students should also be taken into account during the lesson. One of the main reasons for this is the uniformity of the teaching style. That's why it is necessary to choose various types of teaching methods as mentioned above in the organization of the lesson process.

In conclusion, it can be said that the selection of methods of new pedagogical technologies encouraging independent thinking as much as possible, on the basis of ensuring students' activity in the learning process, has a good effect. Even in order to repeat the previous lesson, to strengthen the new topic, it is possible to choose the right pedagogical technology methods, and it requires the teacher to be knowledgeable. Therefore, from the time of

organizing each lesson, the teacher himself should make careful preparations, even knowing in advance the questions that the students may ask based on the theory of probability, and find a thorough answer to these questions.

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