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ANALYSIS OF MODERN PEDAGOGICAL TECHNOLOGIES IN TEACHING THE STRUCTURE AND PRINCIPLE OF OPERATION OF TRANSFORMERS

Submission Date: May 11, 2024, **Accepted Date:** May 16, 2024,

Published Date: May 21, 2024

Crossref doi: <https://doi.org/10.37547/ajast/Volume04Issue05-06>

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ABSTRACT

The use of interactive methods in the educational system and educational process is an innovative method that increases the effectiveness of education. The head of state explained that teaching young people to work and think in a new way is the need of the times. Nowadays, interactive methods are being used in the teaching process in all educational institutions.

KEYWORDS

Technology, seminar, interactive, methodical, material, integral, component.

INTRODUCTION

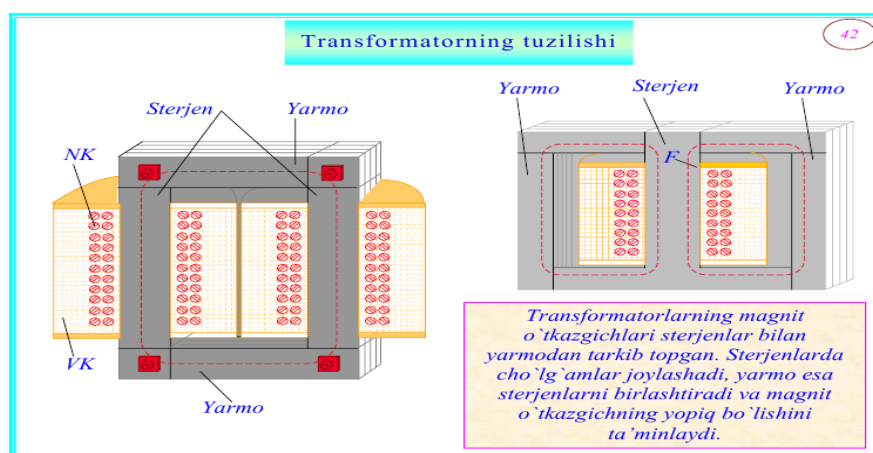
It is known that the sources of meeting the demand for pedagogues and engineer-pedagogues of new types of educational institutions are the training of pedagogues in higher educational institutions, the improvement of the qualifications of pedagogues and engineer-pedagogues who have been working in vocational educational institutions until now and are training institutions.

The rated mode of transformers is the mode specified in the passport prepared by the manufacturer. Nominal values of transformers-power,

voltages, currents, frequency, etc. is indicated in the passport of the transformers, and it also applies to other values indicating the nominal mode of the transformers, for example, the coefficient of useful work. The nominal power of transformers is the power measured in Volt-Amperes in the secondary circuit and indicated in the passport. Nominal primary voltage of transformers is the voltage specified in the passport; if there are primary circuit breakers, then the nominal voltage is indicated separately. The nominal secondary voltage of transformers is the nominal voltage in the primary winding, and the secondary voltage when

working without load; if there are secondary connections, its nominal voltage is indicated separately. To determine whether a three-phase voltage or current system is symmetrical or asymmetrical, their vectors are divided into a sequence of positive and negative phases. If the reverse sequence of vectors is equal to or less than 5% of the correct sequence of vectors, the system is considered symmetric, and if it is greater than 5% - the system is symmetric.

Transformers consist of main and auxiliary parts. The main part of transformers consists of coils that create electromagnetic processes and a magnetic core that strengthens the magnetic current. The auxiliary parts consist of several dozen parts depending on the power, voltage, types and components of the transformer. Among them are oil transformer tanks, insulators connecting the network and pipes, etc.



Transformer magnetic conductor - Magnetic conductor refers to a complex of electrotechnical steel tins that form a magnetic circuit. Depending on the types of magnetic conductors, transformers are divided into pole and shell transformers. In columnar magnetic conductors, in transformers, the coils of the transformer are installed on the magnetic cores. Such magnetic cores are used in almost all medium and large power transformers. In sheathed magnetic conductors, the coils are partially surrounded by cores. Such transformers are used in small power circuits. The magnetic core is assembled from special electrotechnical steel sheets with a thickness of 0.35 or 0.5 mm. Modern transformers are mainly made of two types of transformer steel: hot-rolled

(goryachekatanaya) and cold-rolled (kholodnokatanaya) steel. Cold rolled transformer steel has several times better magnetic properties than hot rolled steel in the direction of rolling. But the technological process of assembling such a magnetic core is quite complicated.

The windings of transformers must meet a number of requirements. The main ones are:

- taking into account the scarcity of copper used for chulgam, the costs of its production should be minimal and the efficiency of the transformer should be as high as possible;

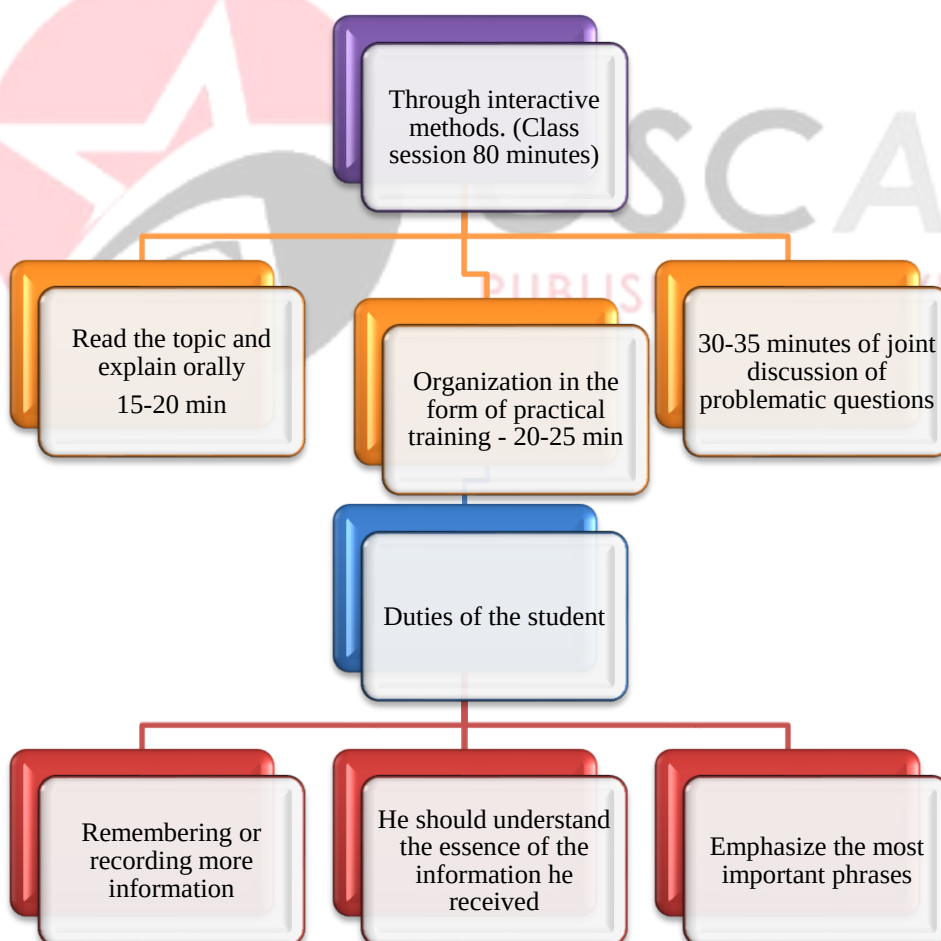
- the process of heat separation of the tank must meet the standard requirements, if the temperature of the tank exceeds this condition, the life of the transformer will be shortened sharply;
- the effect of electrodynamic forces on the circuit caused by an accidental short circuit of the transformer should not be harmful;
- the electrical and mechanical resistance of the circuit board to accidental overvoltage must be present.

These requirements are often contradictory. For example, if the cost of copper is reduced, the current density in the coil increases, the power loss in it

increases, and due to this, the useful work coefficient decreases. If the temperature rise of the coils is made at a higher target, the capacity (size) of the transformer will decrease, therefore its life will be shortened. That's why the current structures of current transformers, especially the structure of high-voltage transformers, are the product of long-term research, tested in experiments.

According to the location of high-voltage (high-voltage) and low-voltage (low-voltage) currents relative to each other, currents are divided into two types:

- concentric and b) exchange coils.



BOOMERANG technology

Description of technology:

This technology allows the audience to work with various literature and texts during the lesson, outside of the lesson, to remember the learned material, to speak, to express the opinion freely, to have a lot of information in a short time, and during the lesson, the teacher aims to evaluate all the students.

The purpose of the technology:

During the educational process, students will absorb the distributed materials individually and in groups, fully convey the read information to each other, and control and evaluate the extent to which the texts in the distributed materials have been mastered through discussion and various questions, as well as to create an opportunity for each student to acquire their own grades during the educational process.

Application of technology. It can be used individually, in small groups and as a team in practical, seminar or laboratory classes, as well as in conversation-discussion classes.

Training procedure:

Formation of small groups;

Introducing the purpose and procedure of the lesson;

The screening of the film is requested to bring out the topic and content of the training based on this film.

Handouts on the subject are distributed to each listener.

The given texts are studied individually.

New groups are formed.

New group members explain their learned texts to the group members.

The level of mastering the content of the explained texts is determined by mutual control.

Gather into the first formed group, and the groups create questions to help determine mastery of their text.

A question-and-answer session will be held between the groups.

Group performance is assessed.

Ways to increase the effectiveness of education and its formation by organizing classes based on interactive education are developed and put into practice. The results of the qualification work can be used as a guide in the organization of methodical support through the use of interactive methods in the process of increasing the effectiveness of education.

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