Published Date: - 25-07-2025
Page No: - 272-277

USING DIDACTIC ENERGY-TECHNOLOGICAL DEVICES AND TOOLS IN THE PROCESS OF TECHNICAL HIGHER EDUCATION

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ABSTRACT
In the process of technical higher education, didactic electronic devices and tools, their classification, their role in the educational process, types, possibilities, as well as complexes composed of didactic electronic devices and tools are considered.

KEYWORDS
Pedagogy, didactic electronic device, integration, television, classification, equipment, sound and visual representation.

INTRODUCTION
Engineering education process dadidactic electronic devices and tools their classification, their capabilities in the educational process. In the process of engineering education, teaching using didactic electronic devices and tools is considered one of the most effective pedagogical processes, providing the opportunity to train competitive engineering personnel with interdisciplinary integrative knowledge skills and qualifications.

The options within the disciplinary integration of pedagogical disciplines can be different: theory - the history of pedagogy, pedagogy - methodology, pedagogy (or methodology) – the basics of skill, etc. We see the optimal variant of such convergence in the following paradigm: history of the issue - its theory - methodology and technology of implementation theory - teaching practice. In our opinion, such a logic of studying pedagogical disciplines allows avoiding duplication, seeing the effectiveness of theory, making it possible to actually implement the principle of connection between theory and practice, to actualize professional knowledge in activities, without waiting for the accumulation of experience for decades [1]

First of all, we need to formulate in future engineers the types of didactic electron devices and tools, the possibilities of integrating disciplines and the provision of knowledge about existing complexes and their use in the educational process.

Sultan-Ali Mashhadi, a contemporary of Alisher Navoi, is a prominent Hatton Mashhadi scholar who played a major role in the development and maturation of the script. In 1514, he wrote”Sultan Ali's treatise on writing". He showed in the brochure the necessary tool equipment for writing, the methods of their preparation, the laws and rules of letter writing and the method of study of writing culture [2].

To achieve this goal, the following tasks are initially carried out:

1. to get acquainted with the types of didactic electronic devices and tools, to determine the didactic capabilities of these materials, to train them and learn how to use them in training;

Published Date: - 25-07-2025
Page No: - 272-277

2. the types of tools used in the use of didactic electronic devices, the principle of Operation, their structure and the study of their use and determination of their didactic capabilities;
3. to get acquainted with the existing methodological guidelines, compiled from didactic electronic devices and tools, to identify the possibilities of didactic interdisciplinary integrative teaching in the content of the study, to analyze and learn how to draw up methodological guidelines for teaching.

From the performance of these tasks, it can be seen that the use of didactic electronic devices and tools in improving the skills of future engineers forms the necessary qualifications, teaches knowledge that is also important for the activities of teachers. The essence of this is that as we study subjects, we understand them more deeply. Engineer educators use some tools to do each job. Including in professional education, we use some kind of electronic devices and devices. Therefore, these are what we call didactic tools.

The choice of types of electronic means of training in each training session is an individual creative process. Each teacher performs it taking into account the knowledge of the content of his subject, the peculiarities of the students themselves, their level of training, their attitude to the subject of study. [3].

What are didactic electronic devices and tools?

To more accurately answer this question, let's first remember the meaning of the word "tool". As we have already said, in order for us to do something qualitatively and efficiently, we will definitely use the appropriate devices and tools. For example, when working on soil, we use tools for loosening it, these are small loosening shovels for a flower on a canvas, and when working on soil in a garden, we use hoe and shovels, and on several hectares of arable land, we use tractors. Now imagine how difficult it would be to do these things if there were no tools, or even some of them could not be done in practice.

With the help of electronic devices, using the example of integrating the process of operation of the X-ray apparatus, which is not available in most educational institutions but is present in production, with the science of materials science, it is possible to put into practice experimental training, which is applied to many disciplines, for example.

In fact, the process in practically existing X-ray tubes will be as follows.

a) generation of Free electrons;

b) providing free electrons with great kinetic energy

C) interaction of rapidly volatile electrons with anode atoms.

X-ray tubes are classified according to their symptoms as follows:

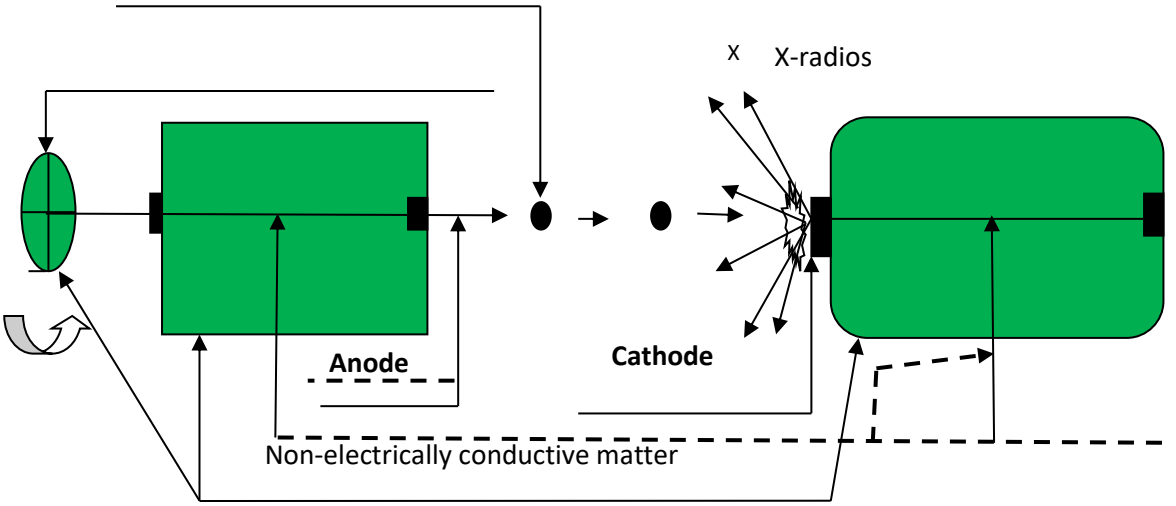
1) the method of obtaining free electrons.

2) according to the way vacuum is generated and maintained.

We can also reveal the process in such X – ray devices from different TV parts by creating a simple 25-30 kV built-in electronic equipment as follows.

Rotating distance switch

Published Date: - 25-07-2025
Page No: - 272-277



1 – image. Didactic electron device created from TV parts

With this device, future engineers are performing experimental exercises, depending on the ion Avalanche Lavina written in some sources or the movement of electrons in our tassavur, in general, on charged unknown particles, for example, hundreds of tiny electric holes of dielectric substances, diffraction of particles, various exercises. Like the processes of formation of X-rays.

Picture 2 video lesson. Practical integration video lesson movement of a charged particle in an electric field. The possibility of performing the work of a vertual laboratory in the physical science program in practice.

- practical integration (comprehensive review of various process or technical products: antibiotics, synthetic substances, biotechnology, computers, etc.). Cluster structure for the subject of mechanical electrical and magnetic properties of materials science in devices made on the basis of television and comps, taking into account the integration in the same section of the integration. Pay attention to the device created charged particles visible to the eye. This gives rise to the following science integrations. In physics, the properties of electric charge in the chapter on electricity and magnetism and coulomb's law. The topics of mechanical electrical and magnetic properties of materials in materials science are integrated by combining the scientific direction of a whole magnetic field.

Using an electric arc device, the following laboratory exercises can be performed.

1. Electric current in gases.
2. The work and function of the contour.
3. Electrical perforation of dielectrics.

4. Alternating reactive and reactive currents.

In the preparation of a similar product, it is necessary to use gaskets, transport in cargo transportation, media in the dissemination of information to the public, etc.k. we use.

Just as we also use didactic electronic devices and tools when teaching. Didactic tools can be those that are familiar to us, found in our lives, even those that we use. That is, not all of them have to be exactly the means produced for teaching. In this respect, it is easier to learn to use didactic tools when taking. It is only necessary to determine the didactic capabilities of the tool being used.

For example, if we take television it is a household appliance that is used to relax in our marriage, it is a media outlet in carrying out propaganda work among the population. But we also use it extensively in education.

For example, in distance learning, it is used as a didactic tool. Didactic means occupy an important place in the educational process. Because they are considered one of the main organizers of the educational process. Didactic tools are the closest assistant to teachers in the educational process.

The following works are carried out in the educational process:

- in theoretical training, we use it in works such as explaining, demonstrating, analyzing educational materials on the subject to give engineers new knowledge;
- in practical training, we use the work performed as an example, to train, to build skills and skills for engineers to perform tasks related to their chosen profession;
- we use various tests and programs to assess the knowledge of Engineers in control training;

Now let's imagine to what extent the teacher could only give information to future engineers by an oral method about the principle of operation of any technological machine or equipment in training. If in this work the teacher uses the principled scheme of this technological machine or equipment-whether it is a virtual or exactly a model, a video material on it-it will be easy for future engineers to understand it, to imagine it. The result is clearly noticeable when we compare these two situations. Of course, in the second situation, the effect will be higher.

In the training carried out in the process of engineering education, we use all kinds of educational information, not only with an explanation by an oral method. These can be in numerical and written form, in sound and pictorial form, in khajmi and moving form, in electronic and other forms of clairvoyance. It follows from this that, knowing the capabilities of each didactic electronic device and means, we will find out which of them is more effective to use in what task, how to implement it.

To do this, it will be advisable that we first familiarize ourselves with the classification of didactic tools.

Classification of didactic tools. First of all, we divide didactic means into three directions. These are didactic materials, didactic tools used for their use, as well as complexes designed to carry out education using didactic materials and tools. Each direction has their respective types of longitudinal.

In the training carried out from the process of engineering education, we use all kinds of educational information, not only with an explanation by an oral method. They can be in digital and written form, in sound and pictorial form, in the form of hajime and moving, in electronic and other forms of clarity. We divide them into separate groups, depending on when and for

what purpose we apply them. We use didactic tools when applying and preparing these materials.

For example, posters, diapositives, photographs, audio, television and video materials, information technology-based materials, etc.k.z.

In turn, we will also class tools according to their structure, principle of operation and didactic capabilities. From this we apply several types of didactic materials during the training, for which we use the appropriate didactic electronic devices and tools. Together, these are a complex of didactic tools compiled for the same training. Exhibition, distribution educational literature and sample materials, model, layout, stand, photo, aydio and projectionmaterials televidiomaterial.

Electronic material.

* Photography, audit and projection tool. Television and vidio tools. Computers, exercise tools
* Lecture hall, science cabinet, computer room laboratory and workshops • TV studio, Creativity Center, production plot
* materials
* tools
* equipment

In the implementation of each task, in order to achieve a good effect, it is desirable that we approach it complex, that is, complex.

It follows from this that our work is much more efficient if we also provide the training information that is given during the training with the formation of a complex. For example, if the topic under study is about the principle of operation of some technological machine or equipment, when giving information on it, we first give a beginner and general information on the structure of its structure using its principled scheme. And using his model we will give information about what details it is made of, geometric shape and dimensions.

And with the help of video materials on the topic, we give concrete information, such as its role in production, the principle of Operation, what technological operations it performs. As a result, we will have a complex of didactic tools on the topic of studying the principle of operation of a technological machine.

This is the complex we have compiled:

- diopositive of the principle scheme of the technological machine and the projection motor;
- a functional model of a technological machine and a table for its display, a current source, etc.k.z. device consisting of;
- a demonstration of a technological machine, consisting of video communication and video communication, will consist of a workspace.

We go deeper and deeper into the essence of the complex of didactic tools as we study the topics.

CONCLUSION

In conclusion, the creation of didactic electronic educational devices and tools facilitates the assimilation of interdisciplinary integrative educational materials and provides a great opportunity to improve the methodology of training future engineers for professional activities.

Published Date: - 25-07-2025
Page No: - 272-277

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