FREZALASH STANOKLARIDA METALLARGA ISHLOV BERISH TEXNOLOGIYASINI VA UNI INNOVATSION USULDA O'QITISH

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Annotatsiya: Mazkur maqolada Texnologiya darslarida Frezalash stanoklarida metallarga ishlov berish texnologiyasini amalga oshirish, hamda dars jarayonida ushbu mavzuni innovatsion usulda tashkil etishga doir fikr-mulohozalar bayon etilgan.

Kalit so'zlar: Kesib ishlash, mexaniqaviy ishlash, kuyim, asosiy va yordamchi xarakatlar, freza, bosh xarakat, surish xarakat, ranadalsh uyish.

TEACHING TECHNOLOGY OF METAL PROCESSING ON MILLING MACHINES AND ITS INNOVATIVE METHODS

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Annotation: This article discusses the implementation of the technology of metalworking on milling machines in technology classes, as well as ideas for the organization of this topic in an innovative way during the course.

Keywords: Cutting, machining, casting, main and auxiliary movements, milling, head movement, push movement, ranadalsh

Today, one of the urgent tasks of our country is to educate students, that is, to train them at the level of highly qualified specialists who meet the requirements of comprehensive state educational standards. This is stated in the National Program of Personnel Training: "Man, his all-round development and well-being, the

creation of conditions and effective mechanisms for the realization of individual interests, changing outdated patterns of thinking and social behavior in the Republic. is the main goal and driving force of the ongoing reforms. An important condition for the development of Uzbekistan is the formation of a perfect system of training based on the rich intellectual heritage of the people and universal values, the achievements of modern culture, economy, science, engineering and technology.

The science of technology serves not only as an object of study of tools and processes, but also as a demonstration tool, didactic material, a technical means of education that activates the practical work of students. There are specific aspects of the use of modern teaching methods, pedagogical and information and communication technologies in the teaching of technology. The use of advanced and modern teaching methods, the introduction of new information and pedagogical technologies are important for students to fully master the science of technology. The use of textbooks, manuals, handouts, electronic materials, virtual stands and models and models of machines in working condition in the study of science, television and radio broadcasts on the science of technology, the work studied to be able to use information sources (television, radio, audio-video recording, telephone) to perform didactic tasks using the media in the search for information in magazines and newspapers, to find terms related to the science of technology; adherence to media culture is important when opening files.

When we use modern information and communication technologies in the teaching of this subject, students gain a deeper understanding and knowledge through visual demonstrations when we use modern computer technology to make presentations in practical science classes. In our opinion, the use of information and communication technologies in technology lessons gives a great positive result. Because in the past, the students were given a one-on-one demonstration of the process of making items during practical classes in technology classes, which was time consuming and sometimes had to be re-demonstrated by the teacher. .

Today, video lessons of labor operations recorded using information and communication technologies are available to students, allowing them to be easily monitored by the teacher, significantly increasing the level of knowledge of students.

Milling machine - a machine that cuts the outer and inner surfaces of parts (flat and shaped surfaces), grooves and grooves, surfaces of rotating bodies, threads and gear teeth. The principle of milling originated in the 16th century when Leonardo da Vinci sketched a round milling cutter. It is known that in 1665 in Beijing was built a rotary lathe. Copies of the modern milling machine began to appear in the 19th century. Depending on their function and structure, milling machines can be divided into several types.

The universal milling machine has a cantilever, the axis of the spindle is horizontal, and it has a suspension that holds the milling cutter. Works with a variety of cutters. The turntable on the lathe can be moved longitudinally, transversely and vertically. The horizontal milling machine is similar to the universal milling machine, but its table does not rotate. Vertical Milling Machines differ from horizontal and universal milling machines in the vertical position of the spindle axis. The longitudinal milling machine is designed for processing large workpieces. The template milling machine is used for machining various flat profiles (templates, cubes, etc.) or spatially complex surfaces according to the template. Threading The milling machine is designed to produce external and internal threads using comb, disc, worm, finger cutters or special threading heads. Dowel The milling machine is used to open dowel grooves. In this case, the rotary milling machine moves forward; one and many spindles. The Carousel Milling Machine is used to process cast, hammered and stamped workpieces with torets cutters. The drum milling machine is currently designed for milling two torets of the workpiece and opening grooves. Various software-controlled milling machines are used in industry.

Woodworking The milling machine has a rotating vertical spindle that secures the milling cutter. It is used for cutting blanks. There are simple, carousel (single and double spindle) and patterned varieties.

There are the following types of milling cutters: cylindrical or axial milling cutters, split cutters, angle cutters, torets, barmoksimon, figured, comb, modular milling cutters.

Milling cutters are divided into the following types depending on the shape of the teeth:

a) Cutters with sharp teeth.

b) cutters with serrated teeth.

Sharp-toothed cutters are re-sharpened on the back surface, and sharp-toothed cutters are re-sharpened on the front surface.

There are 2 different methods of milling:

1. Thrust milling. In this case, the direction of rotation of the milling cutter is on the same side as the direction of thrust.

2. Milling in the opposite direction to the thrust. In this case, the direction of rotation of the milling machine is opposite to the direction of thrust.

Comparing counter-milling with milling, it can be noted that in strip milling, each tooth of the milling cutter cuts a layer of metal of a certain size to a maximum, resulting in the greatest stress on the milling tooth when it comes in contact with the milling surface. Therefore, it is not recommended to use the path milling method when milling a dense metal shell or when laying a laid layer.

There is currently a lot of research being done on milling in the education system. Technology classes also covered topics related to metalworking on milling

machines. Teaching this topic to students in an innovative way increases the effectiveness of the lesson and develops practical skills in students.

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