

To Develop Students' Understanding of Robotics in High School Physics

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Abstract: This article aims to promote creative activity in the field of robotics and popularization of engineering specialties among students during the high school physics course, popularization of technical modeling among students of educational institutions, identification of gifted and talented young people and support them, involve them in creative activities. Definitions and concepts on the topic are presented in sequence.

Keywords: Physics, Rabotechnics, Electrical Engineering, Automation.

Introduction

The rapid development of science and technology in recent years has reached such heights that its use has radically changed the way of life of mankind, in particular, the development of physics is opening up enormous opportunities in science and technology. Physics is taught in high school from the 6th grade. First of all, in the introductory part, what is physics and what does physics is taught. Physics is one of the basic medical sciences that studies the laws of inanimate nature and teaches mechanical, molecular, gravitational, electromagnetic processes, as well as intra-atomic and intra-nuclear processes, which are the simplest and most common forms of motion of matter.

Materials and Methods

The interaction of physics with other sciences, the basic terms and concepts are considered. From the same topics, students should develop the concept of robotics. The development of physics is a clear example of the development of robotics. It works according to the laws of physics so as not to deviate from the law. All mechanisms work at the expense of some force. Robots work mainly with electricity. The robot's sound, hearing, camera, vision are all physical devices. A robot (Czech: robot - "labor") is an artificial mechanical device. It is usually an electromechanical system that performs human labor. The word robot can also refer to virtual software agents, but they are accepted as bots. The robot can also be called a machine that partially or completely performs the function of a person in hazardous conditions for human life (high levels of radiation, high temperature, etc.), in objects that are difficult for humans to reach (under water, in space). Czech writer Karel Chapek used it in his play "RUR" (Rossum universal robots). Robots are mainly divided into 3 types: a robot based on a strict program, a human-controlled robot and artificial intelligence (integrated). Depending on the type of robotic work, the robot is divided into manipulators, information-transmitting robot, stepping robot and etc. Both the appearance and behavior of robots are reminiscent of humans, i.e. they are anthropomorphic (room msimon) machines and differs from other machines by this feature. Robots have two main areas of technology: industrial robotics and robotics used in extreme conditions. Industrial robots, Mas, Robot manipulators "mechanical arms and external control panel or a built-in software control device, a computer. Often the robot is equipped with an automatic control system. Robot manipulators are used in "extreme" conditions, which are mainly dangerous to human health. This is the most effective result of automation.

Discussion

The use of robots is expanding. Mac, a robot that can work at depths of up to 6,000 meters in Japan, a robot that can "read" a note "geologist", a robot that can "read" a note and play an electric guitar, a "trained" Australian sheep In the United States, robots work in the police. In all developed countries, including Uzbekistan, robots are involved in assembling cars, especially in welding. A variant of such a robot was created in Volkshshagenzd (Germany). This robot, nicknamed "Klaus", was introduced in 2000. It has 3 arms and 3 legs, not 2 arms and 2 legs like other robots. The robot also participated in the 2002 show, but has yet to be put into practice. Experiments on such robots are also being conducted in Japan.

Robots are often thought of as helpers who can talk like humans and do all the work. But this is a relatively broader concept. In fact, these are the apps on your device: google translator, dictionaries, and so on.

Exactly what machines Robot, a typical robot should have the following qualities.

- Not natural, that is, made by a conscious being.
- Able to observe the environment.
- Able to interact with the environment.
- Some kind of smart. That is, he can make decisions.

- Can be programmed.
- Able to rotate or move with parallel axes.
- Able to perform dexterous manipulations.
- Can show his will.

Conclusion and Acknowledgements

Knowledge gained in youth is like a pattern carved in stone. Therefore, every parent cares about the future of their child and strives to provide him with a good and quality education from an early age. In today's world of technology, robotics is one of the most promising areas. In many countries, robotics courses have already started. The school is included in the curriculum and is considered a purely natural science, but in Tashkent this robotics course is a novelty. Integer Education School has created such an opportunity. In the robotics course, software for robots is developed and mechanics are introduced. and its basic principles include many other questions, such as the creation of robots.

The words of the great English physicist Isaac Newton are as follows: only much knowledge draws one closer to God, and little knowledge draws one away from it: Indeed, one who has much knowledge imagines that his knowledge is relative. or there seems to be nothing left to know.

References

1. I.Ya. Perelman's book "Interesting physics". . Publishing House of the National Library of Uzbekistan named after Alisher Navoi. Tashkent-2009
- 2.H.N.Nazarov. Book of robotic systems and complexes. "Economic-financial" publishing house.100003, Tashkent, Amir Temur street, 60.
- 3.N.Sh.Turdiyev. 6th grade textbook for secondary schools. Published in the publishing house "Uzbekistan" of the Press and Information Agency of Uzbekistan. 100011, Tashkent, Navoi Street, 30.
4. AP Remkevich. The book "Collection of problems in physics". Tashkent - "Teacher" -1987
- 5.M.Kh.Olmasova, J.Kamolov, T.Lutfullayeva .Physics Book 1 Mechanics, molecular physics and heat.Tashkent "Teacher" 1997.
- 6.M.Kh.Olmasova.J.Kamolov, T.Lutfullayeva.Physics Book 2 Fundamentals of Electrodynamics.Vibrations and waves.Tashkent "Teacher" 1997