

ISSUES IN TEACHING “TECHNOLOGY” IN SCHOOLS AND FOREIGN EXPERIENCES

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Abstract: Increasing students’ interest in the science of technology allows us to prepare mature specialists who will create the basis for the development of our country and socio-economic development. Students’ interest in this science increases when they realize that science is important not only for students, but also for every person in society. The article examines the experience of a number of developed countries Norway, the USA, Great Britain, China in implementing technological sciences in schools.

Key words: Technological education, polytechnic education, labor education

INTRODUCTION

Currently, the use of artificial intelligence is developing in manufacturing, agriculture, household and other areas. During such a period, questions often arise about why it is necessary to teach “Technology” subject to schoolchildren, teach them to value people and work, develop creative abilities in creating things from available materials, teach them to use equipment and technology.

For several years now, “Labor education” has been considered labor education not only for schoolchildren, but also for parents due to the lack of specialists in teaching “Technology”, teachers of other subjects and, of course, first of all, due to the lack of material and technical base, their interest in science has declined, leading them to view it as a secondary or tertiary science.

METHODOLOGY

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As a result of different views on the importance of this subject in society, we often encounter opinions that this subject should be integrated into schools or the number of hours reduced.

The main problem is that schoolchildren's interest in this subject is declining. Because the science of technology is a science that is of paramount importance in the development of new developments, technical creativity in creations, technological consciousness and engineering abilities that educate people for life, ethically and aesthetically.

Disadvantages and errors in the field of technological education lead to crisis phenomena in the entire education system and problems of socio-economic development of society.

Therefore, we will study the development of technological science in our country and the process of education in foreign countries.

RESULTS AND DISCUSSION

The introduction of technology as a subject in schools of the Republic of Uzbekistan is associated with the introduction of the science of labor education into the curriculum, based on the tasks of polytechnic education in the formative years of former Soviet schools.

During these periods, the science of labor education was combined with production labor. Since 1920, labor education began to be taught not as a subject of the school curriculum, but on the basis of a comprehensive system, and then a project system. In the labor program (1927), “polytechnic education” was formed in order to introduce technology in schools, study the basic scientific principle of any work and become familiar with the basic materials, tools and equipment, and cultivate a conscious attitude towards work. in production work. This is mainly woodworking, metalworking, electrical engineering, household, agricultural work, etc.

In 1932, by decree on the curriculum and regime of primary and secondary schools, subject teaching of the fundamentals of science was developed in schools. Along with other academic subjects, labor education was included in the curriculum as an independent subject. During this period, labor education as an independent subject was discontinued in schools in 1937 due to the lack of labor education teachers and the lack of material and technical base, and in 1939 the question of preparing schoolchildren for practical work was raised. Since the 1954/55 academic year, the subject has been restored in grades 1-5 of secondary school, and since 1956/57 - in all other grades. “Manual labor” in elementary grades (1 hour per week), industrial practice in educational workshops in grades 5-7 (2 hours per week), industrial practice in the basics of mechanical engineering, agriculture and electrical engineering in grades 8-10. training was introduced. In the second half of the 50s, in grades 8-10, the course “Fundamentals of Production” was taught, which included: in city schools - the basics of mechanical engineering, industrial production (using the example of an enterprise), automotive engineering, electrical engineering, and in rural schools - agriculture, mechanical engineering, basics crop production, livestock farming, electrical engineering and agricultural power supply.

In 1958-65, industrial training was introduced into the curriculum (12 hours per week in grades 9-11), in which each student mastered a specific profession. The course “Basis of

Production” was abolished as an independent course; its sections were organically included in the professional curricula of students in grades 9-11. In 1966, due to serious shortcomings in the organization: the necessary material base, lack of qualified teachers, difficulties in highlighting the various professional interests of schoolchildren, compulsory industrial training was abolished. Industrial education was preserved only in schools with appropriate conditions.

Starting from the 1967/68 school year, 2 hours per week were allocated for labor lessons in each class. For secondary and high schools, several program options have been developed with two goals: to provide the opportunity to create labor education in schools in accordance with the working environment and the existing material and technical base; taking into account the interests of students and taking into account the possibilities of including them in work at local enterprises. Vocational training in high school is organized primarily in the form of polytechnic workshops in school settings. First of all, from the production base, interschool training and production complexes (TPC) and training workshops of collective and state farm enterprises were also used.

In 1977, the hours of labor training in grades 9-10 were increased (up to 4 hours per week), which included more than 20 profiles of labor education, including electrical engineering, radio electronics, metalworking, gas processing, woodworking and others. The basis was the training of workers according to profiles. Starting from the 1986/87 school year, during the transition to the new curriculum, 2 hours per week in “Technology” were established for grades 1-7, 3 hours per week for grades 8-9 and 4 hours per week for grades 10. -11 (12) grades. In grades 8 and 9, the increase in the number of hours in the subject “Technology” is associated with the introduction of “Fundamentals of Production”. Career choice was included (1 hour per week) (1984).

During the transition to new economic market relations, attention was paid to the labor market and entrepreneurship, labor knowledge, professional skills, etc., starting with work and professional training of specialists received at school, and attention was also paid to improving economic training. schoolchildren.

In the first years of our country’s independence, “Labor education” was taught as in previous years.

In the state standard of general secondary education, approved by Resolution of the Cabinet of Ministers of the Republic of Uzbekistan No. 390 of August 16, 1999, 12 hours are allocated for labor science. Based on the state educational standard, educational work was carried out on the basis of a national program in 5 areas.

In 2010, the state educational standard and curricula were mutually integrated in the areas of labor education, and 5 areas were reduced to 3, namely: the areas “Gasification Technology” and “Basis of Cooking” were summarized in content, Service Maintenance, Woodworking Technology and “Metalworking Technology”, and also developed the content of the “Technology and Design” direction. The course “Basis of Agriculture” has been modernized to meet modern requirements, and its content has been supplemented with knowledge on the basics of production and choosing a profession and career path.

In the general education school curriculum, labor training is allocated 1 hour per week in grades 1-4, 2 hours in grades 5-7 and 1 hour in grades 8-9. The teaching load includes a total of 407 hours of training per year. In grades 8-9, in the sections “Folk Crafts” and “Basis of

Production,” students became familiar with the preparation of folk crafts in the form of modern design and market relations.

At a time when science is rapidly developing, technology is being improved or new technologies are being created, our country needs mature specialists who are not only hardworking, but also fluent in new technologies and can apply them in practice for the development of our country. Of course, the training of specialists begins with school technology.

In schools of the Republic of Uzbekistan, the subject “Labor education” in the curriculum was changed to the subject “Technology” based on the Resolution of the Cabinet of Ministers of the Republic of Uzbekistan dated April 6, 2017 No. 187 “Public education of general secondary education and secondary special, vocational education” on the approval of standards” and state educational standard of general secondary education.

When we study the teaching of technology in foreign countries, we see that in a number of developed countries special attention is paid to the teaching of this science. For example, in Norway, school education is taught in three periods: junior school (Barneskole), middle school (Ungdomsskole) and senior school (Videregående skole).

In junior schools, technology is considered a core subject. Home economics is taught in high school. In high school, some subjects are compulsory and some are elective. Such subjects are aimed at preparing for university studies or career guidance. About one in five Norwegians prefer to focus on vocational training - in this case, training can last up to five years: 2 years of study and 2-3 years of practice.

Germany is a country with the highest economy and education system among European countries. Germany is an economically developed country in industrial production and services. A feature of the educational system of Germany is that technological education is not taught on the basis of a single state standard, since the characteristics of each region are taken into account, and technology is taught to schoolchildren in accordance with social requirements.

In Germany, the structure and content of the system of technological education for schoolchildren was created depending on the characteristics of the economy and the regional focus on industry, agriculture and the service sector. In the system of basic technological education for schoolchildren in Germany, much attention is paid to the study of technology and home economics, regardless of gender. In addition, teaching creative project activities is an important part of practical learning, and separate days are allocated in the school timetable. An important feature of the German technological education system is the opportunity for schoolchildren to receive primary vocational education. Such mixed (dual) education in secondary schools and vocational education organizations requires an increase in the duration of training and allows for a relatively high level of training of graduates necessary for work through the system of certification of labor specialties.

The most important feature of the technology training system in the UK is that its teaching is based on the development of general innovative technical and design activities (design) in a unique way, and not based on the needs of the economy of each region.

Technology is one of the core subjects in school and should be studied by both boys and girls. The main goal of technological education in the country is to form an entrepreneur, a creative person, an initiator, capable of change and development, meeting the needs of a person, the impact of technology on society and culture, studying labor processes and products. Preparing students to master the rapidly changing technologies of the future.

In the UK, project-based learning is widely used, taking up 60% of school time. Experience shows that the technology education system in this country is aimed at nurturing a creative, critical thinker, active individual, capable of solving problems and creating real value, taking into account personal and social needs.

In accordance with the standards adopted in the USA, technological training is carried out according to the principle of a spiral, that is, at each stage of training different sections are taught, but in high school each module is taught in depth. The main sections of technological education are based on universal concepts and include theoretical information and practical training in all major areas of the country's economy. In the United States, the concept of technology education is based on a number of key ideas: technology should be a core subject from kindergarten through high school and beyond. Technology is a compulsory subject for girls and boys at every stage of education. When creating a technology education curriculum, it is necessary to take into account local conditions, wishes, interests and abilities of students; the ultimate goal is to ensure students' technological readiness.

The leadership of the People's Republic of China believes that technological education not only teaches the younger generation to work, but also lays the foundation for the technological development of the entire country. For this purpose, the technology for teaching schoolchildren is included throughout the entire school period (3 or more hours per week). In the primary grades, the subject “Moral qualities and life”, related to everyday life, is taught in grades 1-2, and “Labor and Technology” - in grades 3-6. In the middle grades (7-9) in the subject “Labor and Technology”, basic technologies and technological processes, design work, design, assembly, repair and evaluation, and practical skills are mastered. Inventive and creative activities related to materials, scientific research, electronics and robotics using tools and equipment, service delivery and solving everyday and social problems to improve public welfare, traditional art, design, business fundamentals and professional technological experience are taught.

In secondary schools (10-12), the subject “Technology and Design” is compulsory. General technology electives such as Electronic Control Technology, Construction and Engineering, Simple Robot Design, Home Economics and Life Skills, Automotive Maintenance, etc. (36-72 hours). Such a system allows students to gain experience in product development and production, master general design methods, and deepen technological literacy in understanding issues.

The study of China's general education system shows that it is created in accordance with socio-economic conditions, therefore the system of economics, production and technological education is one of the important conditions for the effective development of the country.

CONCLUSION

An analysis of the content and organization of technological education in the countries under consideration shows that technological education in most developed countries is closely related to the progressive post-industrial economy and developed multifaceted production. In the advanced countries of Europe, Asia and America, technological education is innovative in nature with the aim of forming a creative, free personality, benefiting themselves and society, practically preparing the younger generation for active participation in socio-economic development. Analysis of international experience allows us to determine certain patterns and trends in the development of the technological education system: The study of technological education of schoolchildren is one of the important components of the general education system in developed countries and is carried out throughout the entire period.

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