

Technological education and labor upbringing of schoolchildren in Russian Federation in 2023 year

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Annotation : The article examines the evolution of the content of technological education of schoolchildren in the Russian Federation since the development of the concept in 1992. to date, and the problems of labor education of schoolchildren in the framework of technological education.

キーワード : Technology, technological education, technological culture, All-Russian Olympiad of schoolchildren in technology, labor education.

The technological development of our country requires the training of a large number of highly qualified engineering and technical personnel. The Message of the President of the Russian Federation Vladimir Putin to the Federal Assembly on February 21, 2023 says: "There is a huge demand for graduates of colleges and technical schools. The task is specific - over the next 5 years to train about a million specialists of working professions for the electronics industry, robotics, mechanical engineering, metallurgy, pharmaceuticals, agriculture and defense industry, construction, transport, nuclear and other industries.

There is also a shortage of engineering personnel. Speaking on February 3, 2023 in Rybinsk, Secretary of the Security Council of the Russian Federation Patrushev noted that the aviation industry alone lacks more than 14,000 engineers, designers and technologists, which indicates failures in personnel training in past years.

An important role in the career guidance of young people for further work in the technological field is played by the subject area "Technology", which is the successor of the subject "Labor" in the Soviet school.

Labor training in the Soviet school included two important components that were included in the content of technological education of schoolchildren in the Russian school:

1. The study of material technologies — technologies for processing and using wood, metal, fabric, food and electricity.

2. The variability of the preparation of the labor training program in the following areas: for urban schools — technical labor and service labor and rural labor for rural schools.

Interschool educational and production complexes (UPC) were created for the labor training of schoolchildren of schools nearby to the UPC.

In 1992, at the suggestion of the Ministry of Education of the Russian Federation, a temporary labor collective "Technology" (executive officer Y.L.Khotuntsev) began working at the Department of General Technical Disciplines of Moscow Pedagogical State University.

The concept and program of a new subject (subject area) "Technology" were developed. The concept assumed the polytechnic education of schoolchildren, the use of material and information technologies in the learning process, the variability of the study of "Technology" and the creative development of students. The Technology program was published from 1996 to 2010. The program retains two areas of "Technique and technical creativity" and "Home Culture and decorative and applied creativity", corresponding to the "Technical work" and "Service work" of the labor training program.

The program "Technology" included sections:

technologies for processing structural materials and elements of machine science, home culture, technologies for processing fabric and food, artistic processing of materials, construction and finishing works, electronic technologies (electrical engineering, radio electronics, automation), information technology, graphics, branches of public production and professional self-determination, production and environment, elements of the home economy and the basics of entrepreneurship, technical creativity, introduction to artistic design. The Technology program included the implementation of projects from grades 2 to 11. On The fourth quarter in each class was allocated for the implementation of projects.

In 1993, a new subject was included in the Basic Curriculum of general education institutions of the Russian Federation, 2 hours a week were allocated for its study from grades 1-7, 3 hours in grades 8 and 9, and 2 hours in grades 10 and 11. In the Basic Curriculum of 1998, 2 hours a week were allocated for the study of technology from grades 1 to 8 and in grades 10-11, in grade 9 — 3 hours a week. In the Basic Curriculum of the Russian Federation 2004, 1 hour a week was allocated for the study of "Technology" from 1st to 4th grade, 2 hours - in grades 5-7 and 1 hour — in 8th grade, in grades 9-11 "Technology" was an elective subject. This has limited the opportunities for technological and creative development and vocational guidance of students in technological areas of further education in conditions of a shortage of personnel for the development of the country's economy.

In the federal educational program of basic general education approved in 2023, it is recommended to allocate 2 hours a week in grades 5-8, 2 hours a week and 3 hours in grade 9 to study technology.

On May 31, 2021, the Order of the Ministry of Education of the Russian Federation No. 287 "On the Establishment of the Federal State Educational Standard of Basic General Education (FGOS LLC) was signed [1].

In section 37.10, the subject results on technology are formulated. They must provide:

1) formation of a holistic view of the technosphere, the essence of technological culture and labor culture; awareness of the role

of technology and technology for the progressive development of society; understanding of the social and environmental consequences of the development of industrial and agricultural production technologies, energy and transport;

2) formation of ideas about the current level of technology development and understanding of technological development trends, including in the field of digital technologies and artificial intelligence, robotic systems, resource-saving energy and other priority areas of scientific and technical development of the Russian Federation: mastering the basics of analyzing the laws of technology development and skills of synthesis of new technological solutions;

3) mastering the methods of educational, research and project activities, solving creative tasks, modeling, designing and aesthetic design of products, ensuring the safety of labor products;

4) mastering the means and forms of graphic execution of graphic documentation;

5) the formation of skills to establish the relationship of knowledge in different academic subjects for solving applied educational tasks;

6) the formation of skills to apply technologies of presentation, transformation and use of information, to assess the possibilities and areas of application of ICT tools and tools in modern production or service sector;

7) the formation of ideas about the world of professions related to the studied technologies, their demand in the labor market.

The achievement of the results of mastering the basic general education program is ensured by including in the specified program the subject results of mastering the modules of the educational subject "Technology", the organization has the right to independently determine the sequence of modules and the number of hours for students to master the modules of the educational subject "Technology" (taking into account the capabilities of the material and technical base of the Organization).

On August 25, 2022, the Approximate work program of basic General Education "Technology" was approved by the decision of the Federal Educational and Methodological Association for General Education.

The program contains invariant modules:

"Production and technology"
"Materials and food processing technologies"
"Robotics"
"3D modeling, prototyping"
"Computer graphics, drawing"
And variable modules
"Automated systems"
"Animal Husbandry (Cattle breeding)"
"Crop production"

The production and use of electric energy-the foundations of modern civilization- is studied in the variable module "Automated Systems", i.e. not by all schoolchildren.

The study of home economics and the basics of entrepreneurship is included only in the variable module "Automated Systems"

On August 28, 2021, the order of the Ministry of Education of the Russian Federation No. 590 was signed "On approval of the list of teaching and upbringing tools corresponding to modern learning conditions necessary for equipping general education organizations, which states that the technology cabinet contains:

Part 1. Home economics (cutting and sewing)
Part 2. Home Economics (cooking)
Part 3. Joinery
Part 4. Metalwork

Part 5. A universal workshop for working with wood, metal and performing design work for schoolchildren (based on the technology room for boys), including CNC machines and a 3D printer, as well as a Specialized engineering and technology class with 3D printers, robots, quadcopters and virtual reality equipment.

There is no equipment for studying electrical engineering, electronics and automation.

In recent years, much attention has been paid to the introduction of robotics, 3D CNC machines into the subject area of "Technology", educational centers "Quantoriums" and "Points of Growth" are being created. In 2022, 13,000 "Growth Points" and 300 "Quantoriums" were created in our country, while it is important to preserve material technologies (manual labor) in the subject area of Technology, which form the materialistic thinking of students and allow them to master vital skills.

Labor upbringing plays an important role

in the activities of the whole school. The State Duma of the Russian Federation is discussing the introduction of labor education in school (Izvestia, 12.1.2023). On February 13, 2023, the round table "Labor education at school" was held in the State Duma of the Russian Federation

If the subject "Technology" primarily provides technological knowledge, skills, competencies, then labor education forms a positive, respectful, interested attitude to various types of work in all lessons and extracurricular activities. Already studying in- classes at school and at home – there is work. At the lessons of "Technology", work activity is primarily associated with the creation of material values, in particular when performing creative projects, and schoolchildren should be interested in this activity when creating free projects primarily for kindergartens, schools, the sick and the elderly, but work activity should not weaken polytechnic education and the creative development of students To do this, you can use extracurricular hours.

At school, in particular, the work activity is volunteer work.

There is an active life in the field of technological education in our country. There are many conferences on the problems of this education. On November 21-24, 2022, MPSU and Bauman Moscow State Technical University held the XXVIII International Scientific and Practical Conference "Modern Technological Education".

On March 1-2, 2023, MPSU held the IX International Scientific and Practical Conference "Physics, Mathematics and Technology Education: problems and prospects of development".

On March 2, 2023, the Ishim branch of Tyumen State University held a conference "Problems and prospects of technological education in Russia and abroad".

On March 14-15, 2023, Tolstoy Tula State Pedagogical University held the XX All-Russian Scientific and Practical conference "Technological and Economic Education: achievements, innovations, prospects".

The Decade of Natural Science and Technology Education was held in Moscow and St. Petersburg from March 28 to April 7 this year.

On March 28-30, 2023, the All-Russian Scientific and Practical conference with

international participation "Technological education: theory and innovative practices/ k 45.to the summer anniversary of the Department of Technological Education of A.I.Herzen Russian State Pedagogical University".

The VII All-Russian Scientific and Practical conference "Technological Education in the School-College-University system: Traditions and Innovations" was held on March 30, 2023 at the Voronezh State Pedagogical University.

On November 20-22, 2023, the XXIX International Scientific and Practical Conference "Modern Technological Education" was held at the Moscow State University and Bauman Moscow State Technical University

All-Russian Olympiads of schoolchildren in technology are held annually. The Olympiad includes 4 stages: school for students of grades 5-11 until November 1 of each academic year, municipal for students of grades 7-11 until December 25, regional for students of grades 9-11 until March 1 and final for students of grades 9-11 until April 30.

On April 18, 2022, the Ministry of Justice of the Russian Federation registered our Interregional Association of Technological Education.

Goals and objectives of the Association:

1. Uniting the efforts of citizens and legal entities in the formation of a wide range of specialists, including the public, representatives of state authorities and local self-government, understanding the importance and necessity of developing and improving technological education, primarily schoolchildren.

2. Consolidation of the forces of teachers, teachers and all comers in order to form an interest in technological education among schoolchildren and other students.

3. Creation of a unified information space necessary for the dissemination of modern and promising production and pedagogical

technologies in the professional community and their approbation.

4. Maintenance and development of Russian technological education.

5. Promotion of peace, friendship, mutual understanding in the multinational and ethno-cultural space of the Russian Federation, cooperation with national, regional and international organizations of technological education.

The association's website has been prepared. It includes:

1. Documents on the establishment of the association.

2. The latest official documents on technological education of schoolchildren: concept, program, material support, federal list of textbooks.

3. Information about the latest methodological measures;

4. Materials of recent conferences held in different cities of the Russian Federation.

5. The decision of the last XXIX conference "Modern technological education"

6. Planned events on technological education, in particular the XX scientific and practical conference "Russian culture in the subject area"Technology".

7. Educational and methodological support of "Technology".

Information about cooperation with other organizations.

Cooperation agreements have been concluded with the Association of Technical Universities.

It would be advisable for our association, together with other technological associations, to publish the journal "Technological Education", which would be published electronically once every 2 months.

I invite technology teachers and university teachers who train technology teachers to join our association.

Literature:

1. Order of the Ministry of Education of the Russian Federation dated May 31, 2021 No. 287 of the Federal State Educational Standard of LLC 2022 .rtf "On approval of the Federal State Educational Standard of Basic General Education".