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Research Article

THE HISTORY OF SCIENCE OLYMPIADS FROM EDUCATIONAL SUBJECTS IN THE EDUCATIONAL SYSTEM AND THE CURRENT STATE OF THE STAGES OF ITS ORGANIZATION

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ABSTRACT

Science Olympiads are a high level of knowledge competition for gifted students. In this sense, special methods of organizing science olympiads and working with students have been formed. Science Olympiads have gone through long-term evolutionary stages of development until they became today. A look at the history of science olympiads provides information about the gradual development of education in different periods. This article details the history and current state of the Science Olympiads.

KEYWORDS

Science Olympiads, history of science Olympiads, International Biology Olympiad, Olympiad stages, main Olympiad, additional republican Olympiads, online Olympiad, prestigious international Olympiads, Regional International Olympiads.

INTRODUCTION

In order to analyze and evaluate the current state of science olympiads, it is appropriate to look back at the long history of science olympiads. Since our country was part of the former union until 1991, the educational processes were reformed by this administration.

If we turn to history, the first Olympics, their organization and holding were first implemented in the Russian state, which went through its historical stages.

As an example of the first science Olympiads, the "Student Youth Olympiads" organized by the "Astronomy Society" in the 19th century can be cited.

The history of science Olympiads in Russia allows us to see how the Russian (former USSR) education system has been emphasized for more than half a century. At the same time, based on the demands of the society, the approaches to defining the content of education in

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secondary school were also changing. The long history of Science Olympiads reflects the evolution of approaches to defining educational content in secondary schools.

Over the years, science olympiads in mathematics, physics, chemistry, and astronomy, which are considered subjects of general secondary education, have been rapidly developing since the middle of the 20th century, based on the ideas of combining the knowledge and interests of students with science and production processes.

Research reports that the first Science Olympiad was organized in Romania in 1886 for academic high school students in mathematics. After that, in 1894, at the initiative of the Hungarian Physico-Mathematical Society and Nobel laureate L.Eo'tos, an open Olympiad in mathematics was organized. After that, it has been held every year until now, except for some interruptions due to the Second World War caused by the former USSR and Germany.

The first mathematics Olympiad in Russia was organized in 1934 in Leningrad in the form of a city Olympiad. The following year, the city Olympics were held in Moscow. Later, Olympiads in physics and chemistry were held in Moscow and Leningrad universities. According to historical data, before the war, the Olympics were held every year and became popular rapidly.

After World War II, science Olympiads were revived and were initially held only in large cities with large, prestigious universities.

Since the end of the 50s - the beginning of the 60s of the last century, conducting science Olympiads in mathematics has become traditional for many cities. In the former union, science olympiads were conducted by pedagogical institutes and other universities together with authorized educational bodies.

In the former Soviet Union, scientists, university professors, graduate students, researchers and students who have been striving to identify talented young people and help them develop over the years have united based on the common idea of effective organization and development of science olympiads. It should be noted that this social phenomenon was noticed and supported by the state.

The first mathematics Olympiad, in which several regions of the Russian Federation participated, was organized in Moscow in 1960. This Olympiad was called the All-Russian Mathematical Olympiad for schoolchildren under the name "Start". Since 1961, the registration of science olympiads organized by official numbers has been popularized.

Teams from almost all regions of the Russian Federation participated in the first All-Russian Mathematical Olympiad. Teams from the Union republics were also invited to the science competition. Over time, the status of these Science Olympiads changed and became All-Union Science Olympiads, where the winners of the Republican Olympiads participate. Since 1967, this Olympiad has remained in the history of Olympiads, receiving the official name "All-Union Olympiad for School Students in Mathematics".

The All-Russian Mathematics Olympiad for schoolchildren was organizationally formed in 1974 by the initiative of the Ministry of Education of the Russian Federation, the Ministry of Higher Education of the Russian Federation, the "Znanie" Society of the Russian Federation and the Central Committee of the All-Union Leninist Young Communists. In this regard, the Central Organizing Committee of the All-Russian Physics, Mathematics and Chemistry Olympiad for schoolchildren was formed and started its activities.

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According to the Regulations on the Olympiad adopted by the Organizing Committee, until 1992, the All-Russian Scientific Olympiad in mathematics for schoolchildren was held in four stages: school, district (city), region (province, republic) and zonal. The final stage of the All-Russian Olympiad was awarded the status of the All-Union Mathematics Olympiad.

In 1992, in connection with the disintegration of the Soviet Union, the All-Union Olympiad began to be held under the name of the Inter-Republic Science Olympiad. The final stage of the All-Russian Mathematical Olympiad was held in 1993 in the Krasnodar region (the city of Anapa).

The first Chemistry Olympiads for schoolchildren were held in Moscow and Leningrad in 1938. The founder of chemistry Olympiads for schoolchildren is the well-known organic chemist Alexander Petrovich Terentiev

Due to the long Second World War, the organizational issues related to Science Olympiads were stopped. But since 1944, on the initiative of the Faculty of Chemistry of the Moscow State University, the pre-war traditions began to be revived, and in the same year the Moscow City Olympiad was held.

Since 1960, the Moscow Region Olympiad has been held simultaneously with the Moscow City Olympiad. In addition to the Faculty of Chemistry of Moscow State University, a number of organizations are involved in the organization and conduct of these Olympiads, including: Mosgorono, Mosoblono, Moscow city and regional teacher training institutes, Moscow Palace of Pioneers and Schoolchildren, Moscow Institute of Chemical Technology, Moscow Institute of Fine Chemical Technology , Moscow Institute of Chemical Engineering, Moscow State Pedagogical Institute, Institutes of the system of the Academy of Sciences of the Former Soviet Union were very active.

In the 40s and 60s of the 20th century, the methodological and organizational foundations of the Olympics were created. In 1964, the Minister of Education of the Russian Federation, the founder of the Department of Chemistry of Natural Compounds of the Faculty of Chemistry of Moscow State University M.V. Lomonosov, Mikhail Alekseevich Prokofiev, correspondent member of the Academy of Sciences of the USSR, signed the order approving the state system of science olympiads for schoolchildren. In the same year, the All-Russian Chemistry Olympiad for schoolchildren in chemistry was recorded in history as the year of its official status.

Since 1975, the republic stage was introduced in all republics of the USSR, that is, another qualifying stage appeared. As a result, the number of participants in the final stage decreased by almost four times. A sharp reduction in the number of participants led to an increase in the quality and level of preparation of participants in the final stage. Relatively simple tasks and questions were removed from the list of tasks, the level of complexity of experimental type tasks was increased.

By 1975, it was accepted that the five-stage All-Union Olympiad would be held in the following sequence:

1. School;

2. District (city);

3. Region (province);

4. Republic - V final.

It should be noted that the Olympiads in mathematics, physics and chemistry took a traditional shape and took leading positions. At a time when a scientific and technical revolution was expected in the country, the state needed scientists in various fields, including natural sciences. During this period, the organization of Olympiads in biology and geography and the

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achievement of students' participation in them gradually began to take on a traditional character.

Since 1961, Science Olympiads have been regularly held throughout the former Soviet Union. The first All-Union Olympiad for schoolchildren was held in February 1962 at the initiative of the Moscow Institute of Physics and Technology. More than 6,500 schoolchildren from 58 cities and districts took part in it. In the same year, scientists of the Siberian branch of the Academy of Sciences of the USSR organized the first All-Siberian Olympiad for high school students.

In 1963, Moscow State University held an international Olympiad for schoolchildren. Since 1964, the only All-Russian Olympics have been held. The Ministry of Education of the Russian Federation undertook the coordination of the implementation of organizational issues. These Olympiads were called the All-Russian Physics and Mathematics Olympiads. Teams from all union republics were also invited to the final stages.

All-Union Olympiads for schoolchildren in physics, mathematics and chemistry were held in 1967. Since the XI All-Union Science Olympiad, the program of competitions in physics has included not only calculation, but also experimental issues.

By the mid-70s of the 20th century, the structure and organizational principles of holding the All-Union Olympics were developed. Since 1988, methodical commissions for subjects have been established under the Central Organizing Committee under the leadership of well-known scientists, professors and teachers of higher educational institutions.

In the fall of 1987, the first organizational meeting was held at the Ministry of Education of the USSR. At the meeting, it was decided to hold the country's first computer science Olympiad for schoolchildren in the spring of 1988 in Sverdlovsk, now Yekaterinburg.

At the first organizational meeting, the regulations on conducting the Olympiad in Informatics were agreed upon, and the chairmen of the program committee and the jury were appointed.

The first Olympiad in informatics held in Sverdlovsk from April 13 to April 20, 1988 was called All-Union, not All-Russian, and 80 schoolchildren from all Union republics took part in it.

One thing should not be forgotten, at that time there was no experience of organizing such science Olympiads either in the country or in the world. In order to decide the methodology and content of the Informatics Olympiads, advanced school informatics teachers, the best experts in the field of science Olympiads of their time, one representative from each of the Union Republics and each region of the Russian Federation were invited as members of the jury. As a result of long debates, the rules that are the basis for the rules of conducting the modern Olympics were formed.

The origin and past of science olympiads in biology have a rich history. Initially, the Olympiads were held in individual schools and cities. Since 1950, the Olympiad has been organized by the Faculty of Biology and Soil Science of Moscow State University. This Olympiad was very popular, not only Moscow schoolchildren, but also students from other regions of the former USSR took part in it. Since 1967, after the establishment of the Ministry of Education, which was the only one in the former system, the All-Union Biology Olympiad was also integrated into the single system. The first All-Russian Olympiad for schoolchildren in biology was held in Barnaul in 1979 by order of the Ministry of Education of the Russian Federation.

The first six Olympiads were held within one year, and the seventh was held in 1991. This Olympiad has been held annually in the Russian Federation since 1991, and

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the International Biology Olympiad for schoolchildren has been held since 1990. The main reason for this is that the participants of the International Biology Olympiad should only be the winners of the national Olympiad of that year.

In connection with the need to improve the preparation of the national team for participation in the International Biology Olympiad, the All-Russian Olympiad for schoolchildren is being held according to the model corresponding to the IBO. In this regard, the Olympiad tasks were significantly enriched with theoretical, practical and experimental components.[1]

It should be noted that the development of school, district and regional Olympiads played a major role in the development of the first All-Union Olympiads. Actively worked in cooperation with the leading higher educational institutions of the Union, school students and teachers, significantly strengthened relations between scientists working in various fields of educational subjects of general secondary schools.

After the independence of our country, science Olympiads were first organized by the Ministry of Higher Education, and then by the Ministry of Public Education, and they are being held regularly.

According to the sources known to us, in 1992-2010 science olympiads were organized in 4 stages for students of 9-11th grade, academic lyceums and vocational colleges. That is, it was implemented step by step, first at the school, then at the district, regional and republic stages.

In 2011-2019, science Olympiads were changed to the 5th stage, that is, a regional stage was added to the above-mentioned stages. In the requirements of the regional stage, the students of schools located geographically close to each other served as a stage of competition for admission to the 3rd stage. All stages of the biology science Olympiad consisted of 3 rounds. They consist of:

1. Written assignments. In these tasks, 4 questions of the same level of difficulty and 1 question from genetics are presented. Each answer is allocated a maximum of 8 points;

2. Laboratory training. The selected laboratory work should be in accordance with the State educational standards and curriculum, presented in the textbooks of the higher education schools and recommended by the Ministry of Public Education. A maximum of 10 points is allocated for laboratory training;

3. Test assignments. The student is presented with 40 test tasks of different levels of difficulty. In 10 out of 40 tests, the correct answers were open-ended and required to be written. 1.25 points are allotted for each correct answer.

4. Pupils who took 1-3 places in the republic stage were admitted to state higher education institutions on the basis of a state grant.

In addition, in 2008-2015, a 4-stage knowledge competition Olympiad was organized for 5th-8th grade students. In 2016-2018, an innovative biology Olympiad was organized for 8th grade students.

In recent years, consistent measures have been taken in our country to support promising young people, to realize their talents, to create additional conditions for effective scientific research and innovation activities.

At the same time, it is one of the urgent issues to identify talented young people and improve the continuous system of training highly qualified personnel in order to increase the enthusiasm and intellectual potential of the growing young generation to acquire knowledge, as well as to increase the prestige of our country in the international arena [2].

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For this purpose, on May 3, 2019, the Presidential Decree "On measures to identify talented young people and establish a continuous system of highly qualified personnel training" was adopted. As an implementation of this decision, in order to make young people an active participant in the reforms that are being implemented this year, to increase their motivation to master science, to widely involve them in the activities of curiosity and creativity, and to raise a generation worthy of the ancestors who spread the word of our Motherland on a global scale: the designated states of the system of the Ministry of Public Education of the Republic of Uzbekistan "Department of work with gifted students on Science Olympiads" consisting of 14 state units was established within the framework of this ministry. The main tasks of the department are as follows:

- to identify talented young students, support their activities scientifically and methodologically, popularize best practices in the field and develop recommendations and manuals for educational institutions based on them;
- organization of local and international, including non-governmental science Olympiads among students of general secondary schools, academic lyceums and vocational colleges, ensuring their participation in international Olympiads;
- development of permanent new control materials for the Olympiads with the involvement of highly qualified specialists;
- training participants of international Olympiads with the involvement of highly qualified specialists, including scientists, professors, and foreign specialists, organizing special courses for the purpose of forming communication skills in English and Russian;
- taking measures to monitor and support the future activities of talented students who have recorded high results in the Olympiads.

Umid Rakhmanov, who won the first medal on behalf of our country at the International Mathematical Olympiad and two-time Olympiad laureate, was appointed the director of this department. On the basis of this decision, major reforms related to science olympiads were implemented, and this measure served as a determining factor for the development of science olympiads in our country.

From the sources studied during the research, it can be seen that in the content of this decision, the issues of giving high attention to the participants of science olympiads and their teachers and encouraging them were raised.

Currently, science olympiads are regulated on the basis of Cabinet of Ministers decision No. 562, adopted on September 9, 2021, "On improving the system of conducting science olympiads among gifted students and introducing a system for determining the best school for teaching foreign languages." In this decision, the regulation on organizing and holding science Olympiads among students of general secondary schools, academic lyceums and vocational schools, as well as the procedure for selecting participants of international Olympiads and encouraging the winners is established. This Regulation defines the procedure for organizing and conducting general education Olympiads among students of state and non-state general secondary education organizations, academic lyceums and vocational schools (hereinafter referred to as schools), selection of participants of international and regional Olympiads, and promotion of Olympiad winners. In this regulation, the Olympiads are divided into 5 groups. They consist of:

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The main Olympiad is an Olympiad systematically organized annually among schools on a republican scale by the Ministry of Public Education of the Republic of Uzbekistan (hereinafter referred to as the Ministry) in general education subjects (Table 1);

Additional republican olympiads - olympiads held on their own initiative by local government bodies, ministries and agencies, state and non-state educational organizations, in addition to the main olympiads (table 3);

Online olympiad - olympiads aimed at testing students' knowledge and forming skills to prepare for the main olympiads and conducted only through information technologies (computer, tablet, phone, etc.);

Prestigious international Olympiads - international Olympiads specified in the decision of the President of the Republic of Uzbekistan "On measures to identify talented young people and establish a continuous system of highly qualified personnel training" dated May 3, 2019 PQ-4306;

Regional international olympiads are international olympiads that are not included in the list of prestigious international olympiads, are included in the list approved by the Cabinet of Ministers of the Republic of Uzbekistan, and the status of their winners is equal to the winners of the republican stage of the main olympiads.

During the 2022-2023 academic year, a total of 728,260 students from 14 regions took part in the 1st-3rd stages of the main science Olympiad, 71,997 of them are biological science participants (Table 1).

Table 1

№	Regions	1- stage	2- stage	3- stage
1	Karakalpakstan Republic	7005	1847	252
2	Andijan	6582	3571	109
3	Bukhara	2760	1129	133
4	Jizakh	3932	1209	205
5	Kashkadarya	6633	2107	215
6	Navoi	2500	762	209
7	Namangan	5368	2003	152
8	Samarkand	10657	3726	205
9	Surkhandarya	5276	2626	185
10	Syrdarya	1891	417	108
11	Tashkent Region	7414	3041	151
12	Fergana	3909	3021	248
13	Khorezm	4314	1391	193
14	Tashkent city	3756	987	145
Total in Republic		71997	27837	2510

Table 1. Information on the participation of students in the 1st, 2nd, 3rd stages of the main biology Olympiad in the 2022-2023 academic year.

The development of the Olympiad movement worldwide led to the organization of international biology Olympiads, the first of which was held in 1990 in the Czech Republic. 6 countries participated in it[7]. Since July 13-20, 1997, Uzbekistan has been participating in the 9th International Biology Olympiad

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held in Ashgabat, Turkmenistan. 108 students from 28 countries participated in this Olympiad. In this Olympiad, 4 students from the name of our country:

1. Hudayberdiev Sharaf,
2. Kasimov Akmal,
3. Turniyazov Zahid,
4. Jalilov Heydarli,

participated for the first time, and Hudayberdiev Sharaf brought the first IBO bronze medal to our country.

Table 2.

№	Name and surname	Address	Participation year	Medals
1	Khudoyberdiyev Sharof		1997-1998	Bronze 1997, Bronze 1998
2	Kasimov Akmal		1998	Bronze
3	Aliyev Alisher		1999,2000	Bronze 1999, Silver 2000
4	Aziz Ashurov		2000	Bronze
5	Turgunov Jakhongir		2000	Bronze
6	Valijonova Saida	Tashkent city	2019,2020	Bronze 2019, Gold 2020
7	Egamov Khusan	Navoiy region	2019	Bronze
8	Kudratova Khosiyatkhon	Tashkent city	2019	Bronze
9	Tojiboyev Sardor	Jizzakh region	2020	Silver
10	Karimov Ravshanbek	Bukhara region	2020	Silver
11	Turdiboyev Yorqinbek	Navoiy region	2021	Silver
12	Abduvaliyeva Aziza	Tashkent city	2021,2022	Gold 2021, Bronze 2022
13	Norbekov Khumoyun	Jizzakh region	2021	Gold
14	Egamberdiyev Mukhammadibrokhim	Tashkent city	2023	Bronze
15	Sharifov Golibjon	Bukhara region	2022,2023	Bronze 2023
16	Tursunov Bekhruz	Tashkent city	2022,2023	Bronze 2023

Table 2. List of winners of the International Biology Olympiad (1997-2023)

It should be noted that the national team of Uzbekistan won a total of 20 (3 gold, 4 silver, 13 bronze) medals in 1997-2023 (Table 5). Unfortunately, the national team of Uzbekistan did not participate in the international biological science Olympiads organized in 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2017. It is now known that the main reason for this is financial cost issues. Because, every International Olympiad of science is financed by the

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state. In it, the full cost estimate of each student and team member is drawn up. These costs must be supported by the state in every Science Olympiad.

Studies show that in some years it is also known that the expenses of the members of the national team were financed on the basis of sponsorship. The analysis shows that 13 of the 20 medals won in the last 26 years including 3 gold, 3 silver and 7 bronze medals were won in the last 4 years. These results are the result of reforms implemented in connection with the development of gifted students and Science Olympiads.

Qualifying Olympiads to form the national team of Uzbekistan participating in the International Biology Olympiad in our country have been held since 2012 in two stages.

Professor O. Eshonkulov, Doctor of Biological Sciences, G. Umarova, D. Tokhtaev, M. Muammedova, N. Abdurakhmonova, Z. Rozikulova, D. Goyibova, B. Abduvahitov, H. took the most active part in working with talented schoolchildren. Egamov et al. On their initiative, science olympiads of all levels of biology and 3-level exams for qualifying for international olympiads are organized at a high level. The training of students participating in the International Olympiad was effectively started with the participation of local and international trainers and teachers. Followers of the Olympiad movement are still making significant strides in developing interest and skills in biology[8].

Today, special schools of preparation for science olympiads have been formed. In particular, they include the academic lyceum of the Tashkent Institute of Pediatrics in the city of Tashkent, the academic lyceum of the State Pedagogical University of Jizzakh in the city of Jizzakh, the boarding school specializing in certain subjects in the city of Navoi, and the Karakol academic lyceum in the Bukhara region. O. The chemistry-biological science Olympiad school of the academic lyceum of the Tashkent Pediatric Institute under the leadership of Eshankulov won more than 70 medals in the international regional and international science Olympiads. Students of this academic lyceum won 5 bronze and 2 gold medals at the International Biology Science Olympiad. Valijonova Saida, a student of this academic lyceum, won the first gold medal in the history of the International Biology Science Olympiad of our country.

In the academic lyceum of the Jizzakh State Pedagogical Institute in the city of Jizzakh, the activity of the biology science Olympiad school has been effectively launched. This academic lyceum teacher B. Pupils trained by Abduvahitov won 1 first and 2 third places in the Republican Science Olympiads, 1 gold, 1 silver and 1 merit certificate at the International Biology Science Olympiad in 2019-2022. Norbekov Humayun, a student of the academic lyceum, won the highest score on the global scale in 2021 and recorded the highest result in the international biology science Olympiad of Uzbekistan.

In 2021, the 32nd International Biology Olympiad was held in Lisbon (Portugal), in which 300 students from 76 countries participated. In the history of biology olympiads in our country, our students won the highest result, 2 gold and 1 silver medals. At the same time, serious changes took place in the preparations for the Olympics. In 2021 - 2023 I. M. Professors and teachers from Lomonosov Moscow State University were involved to train students of the national team. In order to develop the skills of students to work with the laboratory, training and practical exercises are conducted by local professors and teachers at the center of advanced technologies of the National University of Uzbekistan named after Mirzo Ulugbek, the Genomics Research Institute of the Academy of

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Sciences and the laboratories of several higher education institutions.

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