

The Establishment and Historical Development of the Academy of Sciences System in Azerbaijan

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Abstract

Today, the history of science is studied on the one hand within the framework of separate branches of science (the history of physics - in the physical sciences, the history of mathematics - in the mathematical sciences, the history of linguistics - in the linguistic sciences, etc.), on the other - the history of science is the subject of the study of philosophy as a certain unit (sets of the history of science of the main subsystems). A more popular long-term term in the philosophy of science was the positivist interpretation of the history of science. The principles of the positivist history of science were given by V. Vevel in the work "History of Inductive Science". In the positivist methodology of the process of the development of science, there is a process of gradual and continuous accumulation of knowledge. It was critically perceived by leading historians of science.

Azerbaijan is one of the oldest centers of science and culture in the world. The inhabitants of its historical territory created a rich cultural and material heritage for thousands of years. There are many scientific works among the ancient monuments of culture. In the first half of the 20th century, A. Koire assumed the role of a scientific revolution in the history of science, as a result of which the scientific picture of the world and the scientific way of thinking changed. In his opinion, important factors in the development of science are internal scientific factors. At that time, his contemporary D. Bernal considered production-technical, socio-political, religious and other factors to be decisive for science. T. Kuhn presented the history of science as a time of scientific revolution, which led to a change in scientific paradigms, and assessed the positivist history of science as facts that contradict history.

The Azerbaijan People's Republic (1918-20) played an important role in recognizing Azerbaijani science and its intellectual values as national wealth.

Keywords: science, history of science, Azerbaijan, National Academy of Sciences of Azerbaijan

Створення й історичний розвиток системи Академії наук в Азербайджані

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Анотація

Сьогодні історія науки вивчається з одного боку в рамках окремих галузей науки (історія фізики - у фізичних науках, історія математики - в математичних науках, історія лінгвістики - в лінгвістичних науках, та ін.), з іншого - історія науки є предметом дослідження філософії як певної одиниці (сукупності історії науки основних підсистем). Більш популярним довгостроковим терміном у філософії науки було позитивістське тлумачення історії науки. Принципи позитивістської історії науки дав В. Вевель у праці «Історія індуктивної науки». У позитивістській методології процесу розвитку науки виникає процес поступового і безперервного накопичення знань. Його критично сприйняли провідні історики науки.

Азербайджан є одним з найстаріших центрів науки і культури в світі. Жителі його історичної території протягом тисячоліть створювали багату культурну та матеріальну спадщину. Серед давніх пам'яток культури не мало наукових праць. У першій половині 20 століття А. Койре приймає роль наукової революції в історії науки, в результаті якої змінюється наукова картина світу і науковий спосіб мислення. На його думку, важливими чинниками розвитку науки є внутрішньонаукові фактори. На той час його сучасник Д. Бернал вирішальними щодо науки вважав виробничо-технічні, соціально-політичні, релігійні та інші фактори. Т. Кун представив історію науки як час наукової революції, яка призвела до зміни наукових парадигм, і оцінив позитивістську історію науки як факти, що суперечать історії.

Азербайджанська Народна Республіка (1918-20) зіграла важливу роль у визнанні азербайджанської науки і її інтелектуальних цінностей національним багатством.

Ключові слова: наука, історія науки, Азербайджан, НАН Азербайджану

Introduction.

Azerbaijan is one of the oldest centers of science and culture in the world. The inhabitants of its historical territory have created a rich cultural and material heritage for millennia. Among the ancient cultural monuments, the number of scientific works is not small.

The Azerbaijan People's Republic (1918-20) played an important role in recognizing Azerbaijani science and its intellectual values as national wealth. The establishment of Baku University, the sending of Azerbaijani students to European universities, the spread of the national language and culture were among the factors that had an important impact on the development of Azerbaijani science as a whole. In the early 1920s, scientific research in the republic was mainly centered in Baku University. In 1920-22, a scientific association consisting of humanitarian, medical and natural departments was organized and operated here. The association aimed to provide comprehensive assistance in researching problems in various fields of science, training and development of scientific personnel. At the end of 1921, the Society of Naturalists and Doctors was established at the university, and a little later, the Society of Orientalists and Doctors. In 1920, a higher technical education school - Baku Polytechnic Institute began to operate. Scientific research in the field of engineering, economic sciences and agrochemistry was carried out here.

Analysis of research and publications.

During the research, publications in the Azerbaijani language were used. There are many publications in the Azerbaijani language in the direction of the establishment, structuring and activity of the Academy of Sciences. Among these sources, the publications that resonate with more topics and contain more fundamental information about the establishment and activity of the Academy of Sciences are mainly: "World experience in the field of automation of library-bibliography processes" by Abbasov A., "Modern philosophy and Azerbaijan: history, theory, teaching", "Research of development regularities of science and relevant methodological issues" by Khalilov, "Modern philosophy and Azerbaijan : history, theory, teaching", "Electronic science: goals, tasks and development prospects" and "Electronic science: international institutions, initiatives and legal framework" by Fataliyev T., Hajirahimova M.

Discussion.

In 1923, the Azerbaijan Research and Development Society was established at the initiative of Nariman Narimanov to conduct scientific research. This society became the main scientific institution of the republic. In the first period, the history, ethnography, economics, and natural science departments were included in the composition of the society (Khalilov, 1976). In 1925, the Turkology department was created from the History-Ethnography department. Commissions and semi-commissions were organized on history, history-literature, ethnography, linguistics, lexicography, law, industry, research of the Caspian Sea, fine arts, theater, music, etc., in order to carry out research in different fields of science. Branches of the society were established in Shamakhi, Ganja, Lankaran, Zagatala and other districts of the republic, as well as in Nakhchivan MSSR and DQMV.

In 1925, the Society was placed at the disposal of the government of Azerbaijan. In 1929, the Azerbaijan Research and Development Society was reorganized and renamed Azerbaijan State Scientific Research Institute (DETI). The institute had departments of nature, biology, history and ethnography, linguistics, literature and art, philosophy, the Soviet East and the foreign East, government and law. In the activities of Azerbaijan DETI, issues of coordination of scientific research works in the republic, preparation of scientific personnel for higher and secondary specialized schools occupied an important place. In 1929-30, 33 scientific workers were trained in the post-graduate course of Azerbaijan DETI, and 43 people were admitted here in 1930-31. At the end of 1932, 30 scientific institutions and more than 10 higher schools were operating. During this period, there were 800 scientific workers in the republic, including 87 professors and 138 associate professors. However, neither the Azerbaijan DETI nor the field institutes could sufficiently fulfill the tasks facing science.

In 1932, the Azerbaijan Branch of the Transcaucasia Branch of the USSR Academy of Sciences was established on the basis of the Azerbaijan DETI in order to ensure the high level of scientific research and development, and to improve the efficiency of scientific and scientific-service institutions. (Modern philosophy, 2011).

In October 1935, the department became the USSR EA Azerbaijan Branch. Scientific research institutes of Chemistry, Botany, Zoology and History, Ethnography and Archeology, Language and Literature, as well as Energy, Physics, Geology, and Soil Science sectors were created under the branch. By the decree of the President of the Republic of Azerbaijan Ilham Aliyev dated January 12, 2004, the Azerbaijan Encyclopedia was placed under ANAS, and according to another decree dated May 5, 2004, the "Azerbaijan National Encyclopedia" Scientific Center was established. Currently, the Azerbaijan National Academy of Sciences employs about 10,000 employees, including 4,939 scientific workers, 664 Doctors of Sciences, and 2,026 Doctors of Philosophy. The Academy has 67 full members and 115 corresponding members. ANAS maintains regular contact with scientific institutions of foreign countries, exchanges ideas with foreign scientists on modern problems of science and organization of science. The scientists of the Academy deliver reports on current problems of science and technology at international scientific congresses, congresses, and symposia. International scientific meetings and conferences are periodically held at the initiative and organization of ANAS. 604 books and 4208 articles of Academy scientists were published. 2427 of the articles were published in scientific journals with an impact factor. ANAS is a member of many prestigious international scientific organizations, its employees conduct research within the framework of a joint program with the leading scientific and educational institutions of the CIS countries, USA, Japan, Israel, Switzerland, England, Germany, Pakistan, Turkey, Iran and other countries, exchange personnel and information. (Decree of the President, 2003)

During the leadership of Heydar Aliyev to the independent state of Azerbaijan, important measures were

taken in the field of development of science, strengthening of scientific and technical potential, training of highly qualified scientific personnel, increasing the reputation of scientific workers in the society. By the Decree of President Heydar Aliyev dated May 15, 2001, the status of "National Academy of Sciences" was granted to the Azerbaijan Academy of Sciences. This historical decree once again confirms the achievements of fundamental science in Azerbaijan, the role of science in the socio-economic, cultural, and spiritual formation of Azerbaijan, its influence in the social and political life of the country, and the fact that academic science is the guarantor of the progress of the sovereign state of Azerbaijan.

Heydar Aliyev's Decree dated January 4, 2003, gave ANAS the status of the supreme state body implementing the scientific and scientific-technical policy of our independent state, its Charter was a state document, and its president was empowered as a member of the supreme executive power. Thus, a legal basis for the comprehensive development of ANAS was created, the scope of the Academy's activities expanded, its powers increased, and responsible state duties were assigned to it. President of the Republic of Azerbaijan Ilham Aliyev consistently continues Heydar Aliyev's strategy, program, and concern in the field of science, education and culture. The foundation of electronic science in Azerbaijan was laid in the 80s of the last century, and the chronological sequence of some works done in this field is as follows:

- in the 80s of the last century, the projects AcademyNet (Network of Computing Centers of Scientific Institutions of the Academy of Sciences of the USSR), AIPSAAS (Automated Information Processing System of Azerbaijan Academy of Sciences) and AIPSASA (Automated Information Processing System of the Academy of Sciences of Azerbaijan) were implemented;
- in 1991, access to the Internet was implemented for the first time in Azerbaijan;
- in 1995, the website www.ab.az (www.science.az) was commissioned for the first time in Azerbaijan;
- in the mid-1990s, with the support of the Republic of Turkey, a network infrastructure covering the scientific institutions located in the Academy campus was created and access to the TURKSAT satellite was provided;
- a number of workstations and facilities were given to the network of the Academy of Sciences by the BP company;
- in 2003, the network was connected to the Telecommunication satellite as part of NATO's "Virtual Silk Road" project.

The successful reforms such as - National Strategy on ICT for the development of the Republic of Azerbaijan (2003-2012), "Electronic Azerbaijan" State Program, Action Program on the formation of "Electronic Government" in the Republic of Azerbaijan, development of science in the Republic of Azerbaijan in 2009-2015 National Strategy on "Azerbaijan 2020: a vision of the future" Development Concept and the National Strategy for 2014-2020 on the development of IC in Azerbaijan implemented in the field of e-state building in the republic under the leadership of the President of the country have their place in the formation of e-science.

The National Strategy for the development of science in the Republic of Azerbaijan in 2009-2015 consists of 20 articles covering issues such as the state of science in the republic, the main goals and tasks facing Azerbaijani science, determination of innovative and priority directions, modernization of scientific infrastructure, international scientific cooperation, training of highly qualified personnel, integration of science and education. Article 19 of the strategy is devoted to issues of information provision of science, and one point of that article is dedicated to the development of the "e-science" model. The strategy brings up the issues of formation of a new type of knowledge-based economy, modernization of the management system in the field of science, scientific infrastructure, training of highly qualified personnel.

One of the main goals envisaged in the strategy is to carry out reforms in scientific activity, wide application of ICT, development of the process of formation of e-science (Khalilov, 2011, p. 25). The strategy, which includes the expansion of basic science research, includes important issues such as such as improving the management system in the field of science and technology, creating a normative legal framework, strengthening information provision of science, integration into the international science space, increasing the effectiveness of scientific research and innovation policy, technologically modernizing the country that are directly related to the formation of e-science. It should be noted that since there is no single concept of e-science formation, the republic's organizations engaged in scientific activity, located in different geographical areas, face a large number of technical, economic and other problems during the work carried out in this direction. However, based on the world experience, these problems are easily solved as a result of the implementation of e-science as a part of the e-government that is being formed as part of the "Electronic Azerbaijan" State Program. (Abbasov, 2010).

Studies show that e-science is constantly being developed as a promising scientific direction in the world, and the number of institutes and organizations, scientists and specialists engaged in this field is growing rapidly (Aliguliyev, 2012, p. 11-12). If we only look at the international conferences held by IEEE (Institute of Electrical and Electronics Engineers) on e-science, then we will see how wide its scope is. Thus, since 2005, the Technical Committee of the IEEE society for large-scale computing, together with the influential organizations of the ICT field, has been holding international conferences dedicated to e-science every year. The purpose of holding the conferences is to present the latest scientific achievements of e-science, to illuminate the directions of world-wide activities, and to discuss the problems and issues to be investigated for the next years. At his first International Conference "The First IEEE International Conference on EScience and Grid Computing" (December 5-8, 2005, Melbourne, Australia), the following main topics related to e-science and grid computing were discussed: (The report of the work done by the Central Scientific Library of ANAS, 2011)

- Internet and web services;
- Models and means of scientific cooperation;
- Service oriented Grid architecture;

- Programming paradigms and models;
- Resource management and planning;
- Grid economy and business models;
- Grid networks;
- Sensor networks and e-science;
- Software and social engineering;
- e-science and grid applications in physics, biology, astronomy, chemistry, finance and engineering, etc.

In subsequent conferences, topical topics such as virtual e-science organizations, metrics and measures, Grid computing, Grid tools and applications, e-science practice and education, etc., were discussed. (Modern philosophy, 2011)

Finally, at the next 10th "The 10th IEEE International Conference on e-Science" held in Brazil on October 20-24, 2014, e-science in cyberinfrastructures and cloud technology, which includes new equipment, software and services supporting e-science such topical issues were the object of discussion. The traditions of the previous conferences were continued, the conference functioned as a forum for the presentation of the latest results of research in the field of e-science, developed ICT products and tools. The directions of these conferences related to e-science confirm the formation of e-science as an important direction of research activity, that its scientific-theoretical and practical problems are constantly studied, as in other fields of science, and the obtained results are communicated to the scientific community. The solution of infrastructure formation, data collection, storage, processing, search, analysis, transmission, issues determine the scientific-theoretical and practical problems of e-science (Fataliyev, 2010).

Designing and creating a computer network for infrastructure formation, development and implementation of management policy, deployment of required computing and memory resources, organization, and optimal management of solving complex scientific problems that require large resources in a distributed environment based on the application of grid and computing cloud technologies. It is necessary to solve such scientific-theoretical and practical problems. In addition to these, the research and application of grid, computing clouds and social network, Big Data, OLAP, Data Mining and other technologies, information security problems of e-science are important.

Conclusions.

ANAS maintains regular contact with scientific institutions of foreign countries, exchanges ideas with foreign scientists on modern problems of science and organization of science. The scientists of the Academy deliver reports on current problems of science and technology at international scientific congresses, congresses and symposia. International scientific meetings and conferences are periodically held at the initiative and organization of ANAS. 604 books and 4208 articles of Academy scientists were published. 2427 of the articles were published in scientific journals with an impact factor. ANAS is a member of many prestigious international scientific organizations, its employees conduct research within the framework of a joint program with the leading scientific and educational institutions of the CIS countries, USA, Japan, Israel, Switzerland, England, Germany, Pakistan, Turkey, Iran and other countries, exchange personnel and information. they participate.

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