FROM THE HISTORY OF USING SCIENTIFIC HERITAGE OF BERUNI IN EDUCATIONAL PROCESS

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Abstract

The article examines the history of using scientific works of Abu Rayhan Beruni in educational process. This trend was formed in the 70th of the XX century. In this period various study guides have been published in this direction. They are intended to promote Beruni's scientific heritage among pupils and young people. This process was connected with ideological request of that time. But it helped to publish new literatures which popularized Beruni’s life and activity.

Keywords: Abu Rayhan Beruni, scientific heritage, education, pedagogy, works, study guide, exact sciences, educational process, authors, jubilee, beruni-studying, history, popular.

INTRODUCTION

Abu Rayhan Beruni (973-1048) was a prominent representative of the Renaissance of the East. He was a well-known scholar who left the last generation a rich scientific heritage in almost all fields of science. A special direction in the field of Oriental studies, called beruni-studying, arose in the process of studying the life and activity of Beruni. This direction, which began to form in the second half of the 19th century, overgrown in the 20th century. Especially in the second half of this century, the scale of research devoted to the life and work of the god expanded. The reason for this was the celebration of the 900th anniversary of the death of Beruni (1948) and the 1000th anniversary of his birth (1973) in Soviet Union and in the world. Especially after 1973, new areas of research appeared in beruni-studying. For example, popular science books and leaflets on the use of Beruni's scientific heritage in the educational and educational process have been published.

The first of them was the book “School questions in the works of Beruni,” published in 1975[2]. The book consists of several parts and was published under the editorship of orientalist and mathematician A. Akhmedov. The section of brief information on the life and work of Abu Rayhan Beruni presents samples of his works in the field of astronomy, mathematics, physics, opinions on research and educational work. The second section provides examples of school geometric questions outlined in Beruni's works. It was prepared by Z. Otajanova. According to the author, it has great educational and educational significance in order to enjoy the scientific heritage of our scientists of the past. In this regard, the newspaper and the magazine emphasize the need for systematic implementation of the Marxist-Leninist doctrine on the wide popularization of the works of such great scientists as Abu Rayhan Beruni, a deep study of their scientific heritage and their use in creating a culture of communism [2, B.15]. It follows from this that the emergence of a new direction in beruni-studying is associated with the established structure of government of communistic ideology. However, do not underestimate the value of popular science works created as a result of it. On the contrary, they did allow the younger generation to be introduced to the genius of Beruni.

The book "School questions in the works of Beruni" highlights and presents the geometric theorem and questions set forth in scholar's essay "On the Determination of the Water of the Circle Using the Inner Drawing Line." Also it was set out methods of proof of Abul Hassan Ozarkhur, Abu Nasr Mansur al-Jadiy, Abu Abdullah al-Shonniy, Abu Ali al-Hububi, Abu Said al-Sijizi, Abu Said al-Jurjani, Abu al-Basriy. As a result, an interesting book was created for the general public.

The author of the third part of the book is researcher A. Abdurakhmonov. In this part, he wrote about Beruni's work in mathematics and astronomy [2, B.54-125]. There were seven books of Beruni in mathematics and astronomy and their save places. Then the concepts of arithmetic, geometry, algebraic terms, astronomy, astrology, chronology, mathematical geography,
description of astronomical instruments were presented. The collection and scale of this book are interesting and significant. It can be used in lessons and extracurricular activities

In 1976, the guide "On the Stage of the Beruni School" was published [4]. The authors of the book gave recommendations for holding a mathematics evening at school. The approval of the appendix by the Ministry of Education of Uz SSR, the publication by the publishing house "Teacher" testifies to its popularization at the republican level.

As stated in the appendix, the study of the life and scientific heritage of Abu Raykhan Beruni led to an increase in the knowledge of schoolchildren, as well as the emergence of interest in the natural sciences, which required a wider application of his work to classes. For example, in class 10, one can give an example of how Beruni measured the meridian and radius of the Earth as a practical application of the run-per-ball theorem, speaking of the number of π, it is an irrational number and also that Beruni determined its 42 tenths... In mathematics classes in schools, his life was studied in extracurricular classes. These extracurricular activities led to the "Young Mathematicians" evening dedicated to Berun [4, B.4]. The authors detailed in the book the scenario for its conduct, starting with the preparation for the evening (work a month before). According to him, two beginners and two teams will take part in the mathematical evening. The script describes the period of Berun's life in difficult conditions, when the class struggle escalated. "Only in the palace of the ruler, despite great difficulties, could the necessary means be found for survival. It's hard for me to remember the rest", said Beruni in scenario [2, B.11]. However, in the event scenario, the information provided to students about Beruni was presented in a fairly simple and equal language.

Another title on the treatise is "The use of Beruni's works in physics lessons" [9], published jointly by the Ministry of Public Education of the Uzbek SSR, the Central Institute for Advanced Training and Retraining of Teachers named after K.D.Ushinsky, the Pedagogical Society of the Uzbek SSR. The author T. Usmonov collected the experience of leading teachers in the republic in secondary schools additional materials were provided for use in physics and astronomy, in extracurricular classes. The tract expressed the opinion that the acquaintance of students with the heritage of domestic gods will lead to an increase in the quality of education and interest in science [9, B.3]. Then Beruni's work in physics was compared with the views of his predecessors and followers (Fales, Jobir ibn Hayem, al-Kindi, Ibn Sino, Abdulrahman Khazini, Umar Chagmini) [9, B.6-13]. In the explanatory note of "The use of Beruni's works in physics lessons," it is recommended to use Beruni's scientific heritage to teach the following topics of physics: the concepts of matter, speed, gravity, density, comparative weight, free fall of bodies, atmospheric pressure, hydrostatics of liquids, heat, optics, electricity, magnetism, etc. In addition to classes (circles, lectures, physics conferences, and etc.), it was recommended to use scholar's scientific heritage in elective classes. As an example, the author cited the scenario of the conference [9, B.15-21]. This paragraph can be called an important methodological application for teaching physics. We believe that the publication of spelling only in Russian prevented the general public. It can currently be reprinted and popularized in Uzbek. Its content corresponds to all times.

In 1985 under the auspices of the “Bilim” (knowledge) society, another treatise “To the Youth about Beruni” was published by culture series [6]. In its introducing part we can see following opinion: "In his historical speech of V.I.Lenin at the III Congress of the Union of Communist Youth of Russia is programmatic for our daily work in the field of attitude to the past cultural heritage. In his speech, he dwelled on the most important tasks of educating a new generation, saying: "The story that our ancestors discovered, built, acquired scientific and cultural value in educating Soviet people who became the founders of communism, fire patriots, feelings of national pride, they will enjoy our heritage. Therefore, materials that make it possible to understand the share of our Motherland and compatriots in the world of civilization are taken from the programs of secondary schools and universities”[6, B.3]. In this regard, the task was set to provide the younger generation with information about the scientific heritage of Abu Rayhan Beruni in a wide and understandable language. This point of view once again confirms the reason for the emergence of a new direction in the above beruni-studying.

The explanatory note "To the Youth about Beruni" emphasizes the need to take into account the goals and objectives of education and the level of school age for the hobby of youth from the heritage of scholar [6, B.7]. That is why we are talking about the requirement of simplification and processing in accordance with the current language of fragments of Beruni's works. Based on these requirements, Beruni's discoveries in geography, history and language are outlined. It could be used by teachers of this science as a methodological manual. The authors also recommended this [6, B.29].

U.Djailolova's treatise “Knowledge is treasure, morality is dignity” [3] briefly describes the history of the moral views of the scholars. The title indicates his commitment to educating and nurturing the younger generation. It, along with the scholars, gives the opinions of Abu Rayhon Beruni on ethics. However, they are not intended for widespread use in the educational process even because of the short provision [3, B.11-12].
In 1990, E. Turakulov's treatise "To pupils about Beruni (from work experience)" was published [7]. The cover of the book shows Beruni sitting with a compasses in his hand. Unlike previously published works in this direction, the author outlined ways and ways to study scholar's heritage in the humanitarian sphere, based on his life experience. Thematic plan-summary, lecture, thesis, abstracts, scientific and practical conference, seminars, quizzes, games, thematic evenings, as well as 14 different methodological recommendations increase the value of the book [7. B.6-33]. E. Turakulov recommended the work of Z. Moiseeva "Stars of Wise Beruni" [5] for extracurricular education [7, B.10]. Risola has another aspect from previously published books. In addition, the book provides recommendations for organizing extracurricular activities on the topic "Morality and Psychology in family life," as well as in the form of lectures, discussions, conversations, lectures in parental meetings [7, B.58-71]. That is, with the help of extracurricular work, the goal was put forward not only to students, but also to parents with the scientific heritage of Beruni.

After becoming independence of Uzbekistan, as in all spheres, there were evolutions in beruni-studying too. According to our observations, studies and manuals on the use of the scientific heritage of Abu Rayhan Beruni during the education process were practically not published during this period. In 1992, E.Turakulov and S. Rakhimov published the methodological manual “Abu Rayhan Beruni on psyche and education” [8], indicating a continuing trend, but not more large-scale compared to the previous period. Later, articles were published by S. Rakhmatova “The Use of the Beruni Inheritance” [9], E. Yarashev "Physics in the Works of Beruni" [11], the author of these lines entitled "The effective using of the scientific heritage of Abu Rayhan Beruni in education" [1., but in them a common topic that we consider description.

Based on the above, we can say that in the 70-80 years of the XX century, a new direction related to pedagogy appeared in beruni-studying. This direction is not intended to explore the life and activities of Abu Rayhan Beruni, but to widely use them in the educational process and thereby convey them to generations. As a result, works created in an interesting and popular language and style for use in the educational process appeared. They played an important role in transferring Beruni's life and work to the younger generation.

On August 25, 2022, a decree of the President of the Republic of Uzbekistan was signed "About wide international celebration of the 1050th anniversary of the birth of the great thinker and scientist Abu Rayhan Beruni". This decision will surely bring further study of thinker's ways of life and works to a new level. In the course of its implementation, it is also envisaged to popularize the activities and creativity of Beruni. The restoration, further enrichment and renewal of the direction we talked about will not be beneficial for the education system in Uzbekistan. Based on the decree, it is advisable to publish books in a simple language that children can understand, create animated films, publish and reprint manuals on application in the educational process and thereby convey them to generations. As a result, works created in an interesting and popular language and style for use in the educational process appeared. They played an important role in transferring Beruni's life and work to the younger generation.

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