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**IN THE DEVELOPMENT OF WORLD SCIENCE AND CULTURE  
THE ROLE OF THINKERS AND SCIENTISTS OF THE  
GREAT SILK ROAD COUNTRIES**

**ABSTRACT:** This article is revealed the social and philosophical analysis of the influences of Eastern thinkers of the Great Silk Road on world science and social development, and is scientifically investigated the role of the Great Silk Road on world civilization. It also analyzes the place and role of communication and information as a driving force in the social development of Uzbekistan.

**Key words:** The Great Silk Road, east, west, science, religion, spirituality, thinkers, socio-cultural relations, development, “Baitul hikma”, harmoniously developed person.

**1. Introduction.** We know that in the IX-XII centuries, the scientific, religious, cultural and educational development of Central Asia was highly developed, and there is ample reason to call this process the Renaissance. Therefore, just as the enlightened world honored the wise men of our country in the IX-XII centuries, in the XXI century we must regain the same respect for our people and nation.

We know that the process of social and spiritual development and integration of the people of the world are associated with the development of the traditions of the "Great Silk Road", and takes its rightful place in the world economic culture. Really, “Silk Road” connecting East and West passes through the territory of Uzbekistan, where trade routes are intertwined, external relations and diverse cultures enrich each other. Today, these roads connecting Europe and Asia further strengthen and improve the social and spiritual connections of our country and the countries of Central Asia.

The historical reality shows that science, religion and Islamic values - the

basis of the Koran, Hadith and laws of Shariah played a crucial role in the development of social and spiritual relations, in the ideal human upbringing, to establish justice, tolerance, patriotism, respect and solidarity of the people, played an important role in the dissemination of ideas and traditions.

Therefore, Uzbekistan now has a great opportunity to study the scientific, religious and spiritual heritage along with the socio-economic sphere, opening up historical, civilization changes and updates. Scientific, philosophical, national values serve to restore and strengthen historical memory, social and educational, and the role of scientific and philosophical heritage left by Renaissance thinkers is invaluable in this process. This was stated by the President of Uzbekistan Sh.Mirziyoev. "Indeed, it has always been at the crossroads of various trade routes, cultures and civilizations ...

The names of such great thinkers as Imam Bukhari, Abu Ali Ibn Sina, Abduhalik Gijduvani, Mirsaid Kulol, Khoja Orif Revgariy, Bahauddin Nakshband and their rich heritage are known throughout the East and the West. ... We should be most proud of our great thinkers and motherland for their perfection. Indeed, no matter how many trials and tribulations in the past, the river of knowledge, culture and art has never stopped. The exemplary life of many devotees still gives us enormous opportunities to build a new society in our country, to educate a comprehensively developed generation and to increase our spirituality" [3.145-146]

**2. Materials and Methods:** The most important task now is to understand ourselves, to preserve and enrich the invaluable heritage of our great ancestors and saints, to become worthy successors of our great ancestors.

This is because Renaissance thinkers have left a valuable source of spiritual strength not only for their time, but for future generations and periods, for the philosophy of Abu Nasra Farabi, for the knowledge of al-Khorazmi and for the medical science of Abu Ali ibn Sina. The international community recognizes that the scientific and philosophical heritage of Abu Rayhan Beruni, associated with the exact sciences and history, the literary and philosophical heritage of Alisher Navoi

and many other scientists and philosophical ancestors, continues to guide the peoples of the world.

In addition, the principles of the Koran, Hadith and laws of Shariah elevate peoples' spiritual life of the world thanks to its ideals of humanism, justice, education, and calls for high morality for every believer, that he was an honest, religious and that he does not betray anyone, that he defends his homeland and all it has so far been used to ensure stability.

Indeed, the President of our country Mirziyoyev speaks about this. "Currently, the book funds of Uzbekistan contain more than 100,000 manuscripts. ... In these rare works, one can find answers many of the most pressing problems of our time. In particular, deep-rooted ideas and thoughts that deeply reveal the truly human nature of Islam and encourage all people to unite in the name of goodness, compassion and harmony are still relevant and important today. But we must recognize that although we are the heirs to this unique heritage, we have not done enough to educate people and pass it on to our people, especially the international community" [4.2]

It is clear that in our country, from ancient times, the foundation of civilization, the deep roots of material and spiritual culture, systematically developed science, religion, positive changes in the cultural and educational fields under the influence of the Great Silk Road. By the beginning of the ninth century (around 832), Baitul Hikma ("House of Wisdom") was founded in Baghdad, for which significant funds were allocated. Two observatories and scientific centers were established in Baitul Hikma, and scientific literature was collected from different parts of the world which were translated into Arabic from Greek, Latin, Hindi, Chinese, Persian and other languages.

In particular, scholars from Central Asia made a true contribution to the development of science and have directly supported by the Minister of Samanids Abu Fazl Balami and Abdullo, Abu Raikhon Beruni, Abu Ali ibn Sina, Abu Sahl Masihi, Abu Nasr ibn Irak, Abu Said ibn Ahmad ibn Muhammad ibn Miskavayh, Muhammad ibn Khidr Al Khujandiy, Zaynuddin Jurjani, Abulkarim Zirgali, Abu

Abdulloh Al Vazir, Abdul Hasan Mamun, Abu Muhammad Khorazmi, Abduavval ibn Abdusamadi, Abu Azok ibn Bahnom, al-Kassi, Abu Abdullah Ilahi, Abusaid Shabibi, Abu Abdullah al-Albi an-Baysaburi, Al Khoroji, al- Hamdaki, Ahmad Masuri, Abu Muhammad Rakkoshi, Abu Abdullah ibn Homid Khorazmi, Abubakr Muhammad Khorazmi, Kamari, Ahmad ibn Muhammad as-Suhayli al-Khwarizmi and other scientists engaged in creativity in the "House of Wisdom" organized by Khorezmshah Abul Abbas Mamun and Abulhuseyn.

They have worked in such fields as mathematics, astronomy, psychology, alchemy, logic, medicine, philosophy, history, linguistics, education, literature, music, geography, geodesy, topography and mechanics and laid the foundation for the development of world science.

In fact, the scientific, cultural and spiritual development of the middle Ages for the unexpected surprised the world with the condition, so wake up early Renaissance history.

Indeed, such a scientific and cultural upsurge was unpredictable for the Middle Ages, and at the same time surprising the world, it became an early renaissance in history.

The leaders of this development, Musa al-Khorazmi (783-850) and Ahmad al-Ferghani (798-865), studied deeply mathematics, astronomy, geography and created a lot of news in this area. In particular, the words "algebra" and "algorithm" are directly related to the name of al-Khorazmi.

In addition, Al-Ferghani one of the scientists created the first map of the globe, the length of the meridian level measurement, determining the level of the Nile River and for discoveries he became famous in the world. The scientist had determined the longest day of the year (June 22), the shortest day in winter (December 23), equals night and day, March 21 and September 23.

Indeed, most of our compatriots are encyclopedic scholars, e.g. a scholar of the 10th century, Abu Abdullo Al-Khorazmi (not to be confused with Musa al-Khorazmi) in his work "Keys to Sciences", he explained the classification of about fifty of the sciences known at that time.

In addition to the famous Ibn Sina, scientists such as Al-Kumri, Abu Mansur Kamari, Sharafutdin al-Iraki, Ismail Jurjani worked in the field of medicine and pharmacology.

Great scientists have contributed to the development of many areas of science, such as in the development of chemistry Abu Bakr al-Razi, Abul Hakim al-Kosi, to the development of geometry and trigonometry Mahmud Chagmini, Shamsutdin Aloul al-Bukhari and in the field of philosophy of Ibn Miskavayh.

Al-Farabi, a philosopher and naturalist, also wrote about music, and his music books were translated into Latin, Hebrew, and other languages in the middle Ages. Fakhriddin Razi wrote more than 150 scientific treatises on philosophy, logic and law.

The multilingualism (Turkish, Persian, Arabic) that existed in our region was one of the important features of the culture of that time, and our wise people also knew other foreign languages. For example, the great astronomer, mathematician, surveyor, geologist, mineralogist and historian Al-Beruni knew 7-8 languages well. In particular, it is known from history that he translated the works of Greek scholars such as Euclid's "Bases" and Ptolemy's "Almagest" from Greek, his own book "Usturlobiya" from Arabic into Sanskrit (an ancient Hindi).

Indeed, in the IX-XII centuries such disciplines as history, linguistics and art were well-known, and the works of Abu Bakr Narshakhi's "History of Bukhara", by Al Mustagfiri's "History of Nasaf and Kesh" and by Bayhaki's "Christian History" are known worldwide. At the same time, historical treatises on Khorezm, Samarkand, Shash, Termez, Choghanyan's history were created, in particular "History of Bukhara" had been repeatedly published in French, Russian, English, Arabic, Persian and modern Uzbek languages.

Imam al-Bukhari (810-870) and Abu Isa Muhammad al-Tirmizi (824-892) were also initiators for understanding the meaning of Islam along with secular science and culture in the 9th-12th centuries. They studied thousands of hadiths in the Islamic world, separated the sincere and trustworthy, and commented on them. They wrote works about the life and work of the Prophet Muhammad (peace be

upon him), as well as his religious and ethical principles. In their hard work, these people skillfully revealed the true meaning of Islam and demonstrated the influence of Islam on science, culture and development in general. They emphasized the humanistic nature of Islam and emphasized that it was a democratic faith in the interests of the majority.

3. **Results:** As the President of Uzbekistan Sh. Mirziyoyev said: “It is known that this region, first of all, the modern country of Uzbekistan is one of the ancient cradles of Islamic science and culture. In order to comprehensively study such a rich historical, scientific and spiritual heritage of our people, to widely acquaint the world community and, most importantly, to deepen the truly humane essence of Islam, we decided to create an Islamic cultural center in Uzbekistan. That is why today it is necessary to create such a center under the motto “Against ignorance - enlightenment” [5.468- 469].

Indeed, scholars like Al-Bukhari and at-Tirmizi’s loyal followers such as Abdurahman al-Nasai, Abu Mansur al-Moturidi, Kaffol ash-Shashi, Mahmud az-Zamakhshari, Abu Isa Samarkandi, Najmiddin Kubro were widely known as the great thinkers of the Muslim world. Specifically, according to the teachings of Sheikh Al-Moturidi, there are three sources of knowledge that are senses, narrations and wisdom. At the same time, he emphasized that intelligence has a special place and, therefore, understanding reality on the basis of mental evidence and facts is the most important action in Islam.

President of Uzbekistan Sh.M. Mirziyoyev said: “... on the land of our country, which is a crossroads of ancient cultures and civilizations, thousands of scientists, poets and saints were born in the Middle Ages. Their invaluable heritage in science and religion is the spiritual property of all mankind. ”

Indeed, medieval scholars believed that the first of the five responsibilities of Islam is “the creator of good and truth, the creator of faith in Allah, the lord of language and heart” that is they believed that in Karan the surah "Ihlas" and the words "Iyman" is the beginning of becoming a Muslim.

Indeed, Renaissance thinkers called the essence of the religion of Islam

honest, pure and, therefore, explained that it always leads people to goodness, tolerance and perfection. For example, Ismail al-Bukhari based both theoretically and practically at that time that Islam was a factor of high spirituality for centuries, and its status increased.

**4. Conclusion:** Today, in many countries of the world, the unique manuscripts of our country are carefully preserved. For example, Al Khorazmi's book on arithmetic was translated into Latin in the 12th century in Spain. The only manuscript of this translation in the 14th century is currently located at Cambridge University, England. Work begins with "Dixit Algorithm", that is, "Al-Khorazmi says". The Arabic copy of the Khorazmi's astronomical work, copied in 1037, is available in the library of the University of Strasbourg (France). The manuscript of one of Al-Fergani's works is in the library of Princeton University, USA. More than a hundred works by Central Asian scholars are still in the service of students at the famous Egyptian University of "al-Azhar".

The work of Al-Khorizmi is the first link in a series of algebraic studies of mathematicians around the world. "The scientific activity of Al-Khorazmi was directed at studying nature, the scientific formation of methods of knowledge. His work helped in the formation and development of the philosophical ideas of the medieval East"[6, P.33].

Therefore, in the 9th-12th centuries, Central Asia experienced high levels of development in all areas of science, religion, culture and education. Therefore, there is every reason to call this process a revival, a period of rebirth. Therefore, just as the enlightened world respected the wisdom of our country in the 9th and 12th centuries, in the 21st century we must regain this respect for our nation and our people.

Today, our country is on the threshold of a new civilization, our country is on the threshold of great progress, and the spirituality of the Renaissance, which includes a great historical period plays an important role in revealing the features of our cultural heritage.

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