Training Problems in the Context of the Ancient East-West

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Abstract

The article dedicated to the training problems in the context of the ancient East-West. East and West problems in development of science, culture and education have always existed and have not been fully resolved yet. The author noted that, while speaking about the Islamic culture, science and education, along with the role of Arabs in progress of Islamic culture, science and education, the big role of the other nations belonging to Islam, such as the nations of Central Asia, Turkey, Iran and Indo-Mogul Empire should be taken into account. He has came to the conclusion that without researches of Eastern scholars science and philosophy in Europe could not develop so rapidly. And as we live in the same Earth the best “gold bricks” of culture, science and education created whether in the East or in the West can be mutually used in the modern training system.

Keywords: Islamic culture, Middle Ages, development of culture, science and education, discoveries of the Arabs, East and West, Arabic numerals.
Introduction

East and West problems in development of science, culture and education have always existed from very, very ancient till modern times and have not been fully resolved yet. For example, although the gunpowder has been discovered in China for the first time, its usage in everyday life and science, development of new weapons belongs to Europe. Invention of organ musical instrument has been ascribed to Egypt, but it has developed in Europe.

We meet classroom teaching system in the 11th century great Azerbaijani poet and thinker Nizami Ganjavi’s “Leyli and Majnun” poem. According to the poem, Leyli and Qeys for the first time met at school they study together and loved each other. However, in Europe the founder of the classroom teaching system was Czech pedagogue Y.A.Komenski in the 16th century.

Thirteenth century famous Azerbaijani astronomer, mathematician Muhammad Nasraddin Tusi’s (1201-1274) discoveries in the mentioned scientific directions later was known by the European scientists. “Maragheh observatory” built under the direction of N.Tusi in the Middle Ages was unique and much later different kind of observatories began to be created in Europe. This also can be said about public schools which were very important in the Middle East.

Main Part

Ancient Eastern Islamic culture is old and also very rich, this culture has developed in various fields as well as education sector. The development was influenced by the Eastern nations, especially art and activities of the ancient Turkic tribes Sumerians.

In ancient times Sumerians, Indians, Elams had created a pictographic system of writing and it had been used to carry out calculations on their farms. Ancient Babylonian, Indian, Chinese and Palestinian peoples have done definite things in this field. Present day alphabet and writing system in Orkhon-Yenisei monuments was founded by the Turks in the 5th century BC. During this period was created the first educational institutions to educate the younger generation in the Middle East. By developing these initiatives has become tradition in the Middle Ages. At that time, cultural and pedagogical training in Western countries was the subject of religion as a whole, but in Eastern countries there were favourable conditions for the development of secular sciences and this development inevitably had an impact on Western countries.

English Orientalist scholar W.M.Watt wrote about this: “Without researches of Eastern scientists, science and philosophy in Europe could not develop so rapidly” [4, pp.3-4].

In this regard, Azerbaijan also has a number of valuable initiatives. For example, while researching ancient Greek scientist Aristotle’s “Poetics”, in his articles about influence of ancient East on the ancient Greek culture academic A.Aslanov significantly mentioned the role of the Arabs in preservation of ancient Greek culture and passage it to Europe in the Middle Ages. But we have to take into account the fact that in this process, not only Arabs’, but the service of each Islamic nation should be noted, it is not difficult to determine the level and border of the service. In other words, the main factor and the true essence of the great Islamic culture, science created by all of the various Islamic nations - Arabs, Turks, Persians and others contained in Islam.
Therefore, while research and analysing of every representative of this culture, science and education, it should be looked through not as a separate fact and event, but beside national identities, as the fact and the event of Islamic culture in the context of this culture, as well as in relation to the events of the world culture. Thus, national revival becomes quick and speedy movement when a nation focuses its attention inside itself with all the power, starts to learn itself, perceives, understands, and returns to itself.

Taking into account that, Islam greatly appreciates the value of “science” in ayahs of Quran, the Prophet said that “the ink of scholars is more precious than the blood of the martyrs” and invited devout to “seek knowledge even in China”. Thus we can come to the conclusion that the indicator of every nation is education, training and culture.

For many centuries, the Muslims have been faithful to the principles of the Islamic religion. The famous Arab scholar Philip K. Hitti in his book “History of the Arabs” said: “In the first half of the Middle Ages no nation in the world served to the advancement of humanity like the Arabs”. Saying “the Arabs” he did not mean only those who live within the boundaries of the Arabian Peninsula, but all who speak in Arabic. Because, at that time Arabian was the language of scientific, literary and mental progress in all the cultural world, except the Far East. That is why “between the ninth and twelfth centuries the works written in Arabic in the fields of philosophy, medicine, history, theology, mathematics, astronomy and geography were higher than the works written in any other language” [16].

However, while speaking about the Islamic culture, science and education, along with the role of Arabs in progress of Islamic culture, science and education, the big role of the other nations belonging to Islam, such as the nations of Central Asia, Turkey, Iran and Indo-Mogul Empire should be taken into account.

In the 15th century, when in Central Asia the cities such as Samarkand, Bukhara, Herat were important scientific and cultural centres Teymurids considerably influenced on development of the Islamic culture.

Between 1500-1772, during the reign of the Safavids, it is impossible to deny the importance of the Iran culture, science and education, which was living of its golden age.

Positive role of the Ottoman Turks in the Islamic culture, science and education also have to be noted. Thus, Sultan Suleyman was the protector of art and science, as well as the most powerful and wise ruler of his time. It is no coincidence that famous Frenchman Marcel Klorje in his article, published in Paris in 1938, wrote about it: “In his era the Ottoman Empire reached a high level of civilization.

Science and laws improved, literary movement in Turkish, Arabic and Persian progressed, in cities such as Istanbul, Bursa, Edirne were built great monuments... All these and finally superior position of developed in his time religious kindness was the evidence of the cultural level of the Ottomans. All these influences coming from Byzantium, Turkey and Italy, combined to create clarity period of the Ottoman history”.

Unusual miracle - the Taj Mahal of Mogul empire, which existed in India prove that the culture and science had developed at the time.

Development of culture and science in Arab countries, especially reaching of this culture and science to the highest level during supremacy of the Abbasid caliphs in Baghdad (750-1258)
and Andalusia Amavis in Spain (755-1492) was doubtless reality. French researcher Gustave le Bon wrote: “When Europe was drowning in the darkness of the violence, Islamic cities as Baghdad and Kurtuba were the cultural centres, emitting lights of art and science all over the world” [Gustave Le Bon, 1955]. French scholar, orientalist Jean-Jacques Risler explained his opinion as the follows: “During five centuries Islam ruled the world with the sciences, high culture and the power. The heirs of Greek philosophy and scientific treasures - Muslims enriched these Islamic ideas and then passed to the West - to Europe. In this way, in the Middle Ages Islam broadened Europe's cultural horizons and left a deep impact on people's views and life” [15].

During Caliph Mamun’s sway (813-833) creation of Bayt al-Hikma (House of Wisdom) and in 830 Dar al-Hikma was one of the important events of the Middle Ages. There were translation centre, library and science academy.

After the decline and fall of Rome in the fifteenth century, the honour of development of culture, science and education fell on Baghdad madrasah. During this period, initiatives of Islamic civilization in order to save, protect and to deliver the former education to the next generation should be noted. Baghdad scientists and philosophers extended and enriched the old knowledge with original innovations in all the fields of science.

French scholar Sismondi said about it: “Baghdad madrasah played a role not only in the awakening of Europe, but also has an impact on Asia”.

Famous scholar of the thirteenth century N.Tusi at that time along with its scientific searches, was also engaged in enlightenment. One of the famous American scholars wrote about Tusi: “If Western scholars were aware of the works of Tusi, they would not consider their discoveries as innovation”.

According to the above-mentioned ideas we can come to a conclusion that without innovations of the Arabs, European development (Renaissance) would not happen.

But how and when the Islamic culture, science and education entered into the Europe? Even today, there is an opinion in the West that Christianity created intensive trade relations between East and West and this was a cause for development of this process. Crusades did not leave an effective trace in the world of science and literature, but created a huge precipice between East and West. The hatred against Islam, resulted to sever friendship, interaction between two scientists. Even a new culture arising and developing in the East of France under the influence of the East completely dispersed. During two centuries of development of Christian lands there was not long lasting wars in the East. As a result of peace causing establishment of relations between Muslims and Christians, the Crusaders realized that they stand in front of a great culture, science and education. They found unfamiliar but useful things in the East.

Enter of the Eastern products into the European market on a large scale, agriculture, crafts and agricultural technology and techniques made valuable changes in the economy of Western Europe. Durability and spaciousness of trade relations led to the creation of new cities in Europe.

At that time, the merchants of Venice became rich thanks to the weaving goods imported from the East. Therefore, using the technology of the East they began to produce textile
products in their cities, that is learned from the East.

Europeans learned paper production methods and technology of a variety of beverages from the Syrians. During this period of silence craftsmanship and trading began to develop in Europe and this also caused for the development of culture, science and education. While development of a variety of art items in the West, new technological methods was also improved and the industrial revolution began to surround not only a nation, but the entire European continent. Thus, the relationship between the Islamic and Christian cultures was healthy and the usual ways. Of course, that trade has played a key role in this area.

At the end of the first half of the ninth century, Islamic culture spread in Spain. Spaniards used Arabic for the development of science and literature.

Thus, Arabic and Romany equally used in all Spain.

Islamic culture had a great influence on Spanish Jews and later it spread among the Jews all over the world. The French explorer E.Reeman wrote: “All Jewish literary art of the Middle Ages consists of reflection of the Islamic culture. Indeed, Jewish literary art is closer to Muslim science more than Christian culture”.

Islamic culture had influence on the development of a number of sciences, including astronomy, mathematics, physics, chemistry, natural sciences, medicine, philosophy, literature, geography and history, politics and sociology, architecture and construction, art and music.

In the Eastern Muslim culture special attention was paid to mathematics and astronomy. So most of the principles on arithmetic, algebra and geometry should be applied to the findings of the Muslim scholars [13].

While creating Bayt al-Hikma Mamun invited there Muhammad ibn Musa al-Khwarizmi. The name of the book on algebra that he wrote was “The Compendious Book on Calculation by Completion and Balancing”. Apparently, the book’s name has been changed. French scientist Gerard de Gremone wrote in the translation of the book of Arab scholar al-Khwarizmi published in Paris in 1950: “This work was a basis for the works of Arab scholars who came after him, for the algebraic computation of today's most important European mathematicians and decimal mathematical system”.

Sabit bin al-Jarrah completed the works of al-Khwarizmi. He has translated the work Almagest by Ptolemy, developed algebra and for the first time realized the application of algebra to geometry. It is known that many Arab scholars were engaged in astronomy. Therefore, they were giving special attention to trigonometry. Arabic scholar al-Battani, who had many achievements in this field, was the first scientist who used sines and cosines expressions in his works. The first scientist who used concept of tangent in trigonometry was also Al-Battani. This concept has been known to the European scientists only 5 centuries later.

In 976 Arab Muhammad bin Ahmad brought the number zero in mathematics. Western countries learned to use it only in the thirteenth century. Finally, related with the validity of Euclidean geometry we should note the name of the Azerbaijani Nasraddin Tusi.

The culture, created by the Turkic tribes, that is Sumer and Akkads, located in the valley
between the Tigris and Euphrates rivers in modern territory of Iraq considers the world's most ancient culture. This state on the one hand bordered on the Persian Gulf, on the other hand the Arab desert, Iran and the Anatolian highlands.

The Sumerians were giving special attention to education and science. Children got education at schools. Mainly cuneiform and mathematical skills were taught in these schools. In addition to these subjects, theology, geography, botany, zoology, mineralogy, visual arts and music were taught in these schools.

The Sumerian life was directly related to the agricultural sectors, so in the educational process they paid great attention to the development of mathematical knowledge. In this regard, they created decimal and six decimal systems and their bases were digits and numbers as 1, 10, 100 and 60, 120, 180 and so on.

Students of these schools were taught multiplication, division, triangle, square, equation and the fraction. In addition, students of Sumerian schools gained knowledge such as rectangle, square and cube, degree and extraction of root. During this period, the Sumerians used the lunar calendar. In the mentioned calendar there were 29 or 30 days in a month, 12 months (354 days) in a year. Taking into account that there were 11 days of difference between the calendars (Moon and Sun), every three years 13th month was added to a year.

In ancient Egypt there were two kinds of schools:

a) schools for preparation of highly privileged people or palace priests;

b) schools for preparation of petty officers.

Special attention in these schools was paid to the teaching of writing and mathematics. Training in these schools was 5 years and they were mostly situated in palaces, temples and palaces belonging to nobles and there studied 5-16 year old boys.

In general, in Egypt for building of temples, canals, construction of the pyramids, correct calculation of the agricultural products it was necessary for growing young generation at that time to gain mathematical knowledge.

In this period ancient Egypt also had achievements in the field of geometry.

In ancient India, a number of areas of science, especially mathematics developed. It should be noted that the numerals called “Arabic numerals”, also “Zero” at first appeared in India. But Arab scholars spread these numerals all over the world, despite the Indian origin, they were assigned to the Arabs, who popularized and applied them.

In ancient India, the scientists had the information about the Pythagorean theorem. They created a special calendar, also had knowledge on astronomy and geography.

The numerals called “Arabic numerals”, but discovered by Indian scientists in 10-11th centuries became known in Europe, in the fifteenth century began to be widely used. Russia began to use these numerals only in the eighteenth century [11, pp. 171].

China was known as one of the centres of civilization in the Middle East and the first educational institutions were established in the 3rd millennium BC.
With development of philosophical thought in 5-3rd centuries BC in China were established private schools called “sisyue” and they were related with the name of the great Chinese philosopher Confucius. On the other hand Buddhism temples also had a great importance in the development of education in China. Along with the private schools, there also were public schools in China.

Ancient Turks regularly take part in wars, so they did not establish educational institutions, but in the Middle Ages of our era began to appear scholars, thinkers in different fields. In the works of these philosophers, scientists and educators we can come across interesting thoughts about the process of learning, information about training methods and techniques used at that time.

For example, earned the name “the second teacher” after Aristotle Al-Farabi (870-950) in his works along with the terms belonging to the pedagogical ethics and political science explored and explained the meaning of pedagogical terms such as training, education, definition, assignment, belief, happiness, knowledge, ability, skills and so on.

Abu Reyhan Biruni (973-1048), who was born in the village of Khiva, Turkestan, was the author of works in various fields of science, including mathematics, astronomy and physics. He proved mathematically that the earth revolves round the Sun and calculated its radius 500 years before Copernicus.

In his book called “Understanding Astrology” have been reflected answers to the 530 questions. 48 of the questions are about algebra, 71 of them about geometry.

A great scholar of the East, who was living in the 10-11th centuries, Abu Ali Ibn Sina (980-1037) was born in Afshan which was close to the Bukhara. When he was 17 years old Ibn Sina was now known as the great doctor in Afshan, he was working hard, learned perfectly the works by Hippocrates, Ghali, the famous physician of that time Abu Bakr and then wrote 450 work in different fields of science. Among these works the following books on pedagogy should be mentioned: "Danishnama" ("The Book of Scientific Knowledge"), "Kitab-il insaf" ("The book of Impartial Judgment"), "Kitab-ul-isharat" (Book of directives and remarks) and so on.

**Conclusion**

We come to the conclusion that starting from the Middle Ages of our era new scientists appeared in Turkish culture, science and education, which was the part of the Islamic world, and important ideas about teaching methods and principles, content, aim and objectives of training, which are topical even today, were reflected in their works. These training principles can be successfully used in the modern age in teaching of mathematics in the secondary and the Higher schools.

As we live in the same Earth, the best "gold bricks" of culture, science and education created whether in the East or in the West can be mutually used in the modern training system.

**Conflict Of Interest**

The author confirms that the data do not contain any conflict of interest.
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