

UICL 2302

Thinking of Science & Technology

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**Ecosystem of Islamic
Science/Knowledge**

Introduction


The movement initiated by the Prophet of Islam which changed the history of the nations wasn't only confined within the framework of a moral movement; it also caused a fundamental scientific metamorphosis in human society as well.

- Islam breathed new life in to the dying body of society and steered it in the direction of economic, scientific, and political progress.
- As a result, many surprising initiatives and discoveries came in to existence and, in numerous ways the positive aspects of today's civilizations are indebted to this Islamic movement.



Motivation from The Quran

- **Allah will exalt those of you who believe, and those who are given knowledge, in high degrees** (Holy Qur'an, 58: 11)
- echoed throughout the darkness of that age and it did not take long for a revolution to take place and such renowned scientists as AVecenna, Farabi, Zakaria Razi, Ibn Rushd and hundreds like them shined among the Muslims.



In Islamic world (empire), schools and libraries were established where many people studied to become scientists while, at the same time, Europe was ruled by ignorance.

► **Dr. Gustave Le Bon**, a Christian scientist, has stated,

"When Islamic civilization was at its highest peak in Andalusia (Spain) our scientific centres were castles, our masters and rulers were living in a semi-barbaric state and they felt pride in not having any system of writing being illiterate. Among we Christians, the most knowledgeable one was the ignorant priest, who was extending his utmost effort just to take out the old Greek and Roman religious books, clean them and write some ambiguous comments on their pages."



Factors that caused scientific revolution in the Muslim world during the peak of Islamic Civilization.

1. Campaign Against Illiteracy
2. Development Of Ideas
3. Emphasis On Scientific Matters

Campaign Against Illiteracy

- The first and foremost factor in the spread of Islam was writing and reading, because verses of the Qur'an were not written down at first, and those with the ability to recite the verses taught the Qur'an to others.
- The Prophet of Islam (S.A.W) encouraged people to seek education.
- After the Battle of Badr, each prisoner of war was told to teach the art of reading and writing to ten children from Medina, in order to gain freedom.
- The Prophet of Islam (S.A.W.) even compelled some of his followers to learn foreign languages. One example is Zayd-ibn-Thabit, who was sent on a mission to learn Hebrew, as he himself stated:
- "I was taken to the Prophet of Islam (S.A.W), and when he was informed that I knew seventeen verses of the Qur'an by heart, the Prophet was surprised. I recited them all, and when the Prophet saw that I possessed this talent, he commanded me to learn Hebrew, the language of the Jews, and added that 'I fear that the Jews may change the Book (the Qur'an).' I applied myself and learned Hebrew in a short time. I was put in charge of writing the Prophet's letters to the Jews and translating the letters they sent to us."

Development Of Ideas

- Another important factor for this movement was the teachings of Islam. The Qur'an, by narrating the history of other nations and the histories of Adam, Abraham, Jonah , Moses, Joseph and other prophets, could move the icy and stony brains of the people.
- Encouragement and motivation from the Holy Quran.
 - elaborating and explaining principles of belief and explaining the power of Almighty Allah and His unity.
 - attracted the attention of thinkers and prompted them to contemplate about the world

Quranic Verses that stimulate the people's mind!

- ▶ Do they not consider the kingdom of the heavens and the earth and whatever things Allah has created (Holy Qur'an 7:185),
- ▶ So let man consider of what he is created: (Holy Qur'an 86:5),
- ▶ and, Most surely in the creations of the heavens and the earth and the alternation of the night and the day there are signs for men who understand. Those who remember Allah standing and sitting and lying on their sides and reflect on the creation of the heavens and the earth: Our Lord! Thou hast not created this in vain! Glory be to Thee; save us then from the chastisement of the fire: (Holy Qur'an 3: 89,190)

أَوَلَمْ يَنْظُرُوا فِي مَلَكُوتِ السَّمَوَاتِ وَالْأَرْضِ وَمَا خَلَقَ اللَّهُ
مِنْ شَيْءٍ وَأَنْ عَسَى أَنْ يَكُونَ قَدِ اقْتَرَبَ أَجَلُهُمْ فَبِأَيِّ حَدِيثٍ

بَعْدَهُ يُؤْمِنُونَ ﴿١٨٥﴾

Emphasis On Scientific Matters


- ▶ The most important matter is that, in the early days of Islam , all or most scientific matters were interrelated. For instance, those who were authorities in theology also knew philosophy, narration and interpretation, while those who were authorities in narration and interpretation were knowledgeable about literature, poems and phrases explaining the meaning of the Qur'an.
- ▶ Not many people could be found in those times, who specialised in only one subject, because specialty came from an orderly discussion in a technical or scientific manner, which did not exist at that time.
- ▶ The most popular discussions were about religious matters such as Qur'anic interpretation, narration and jurisprudence. Discussions were also often held about history, philosophy, logic, chemistry and medicine.



The establishment of School (Madrrasah) – catalyst to the knowledge advancement.

- Schooling in Mecca:
- After the dawning of Islam, Mecca and Medina became two important scientific/knowledge centres.
- The city of Mecca was the birthplace of Islam and Islamic legislation. After the migration of the Holy Prophet (S.A.W), the increased power of Islam and the conquest of Mecca, the Holy Prophet (S.A.W) appointed Mu'az to teach Islamic jurisprudence and the Qur'an. Mu'az was one of the best youths of Ansar for he possessed knowledge and excellent morals and participated in most of the Muslims' battles. He was well-acquainted with Islamic precepts and had collected all of the verses of the Qur'an which had been revealed to the Prophet (S.A.W). Mu'az was the best person to be appointed to teach and educate the inhabitants of Mecca. Unfortunately, it did not take long for the disease of the plague to claim his life, and he passed into the next world. Thus, this great man of wisdom and knowledge bid farewell to earthly life.
- Abdullah Ibn Abbas was appointed to succeed Mu'az, and he began teaching and educating people right away. The fame of this city concerning learning and science is because of his efforts.





Medina as an early centre of Islamic propagati on



- ▶ Medina was the centre of Islamic propagation and was the second city of the leader of Muslims. It was the home of many of the Prophet's followers and, most importantly, many historical and political events took place in this city.
- ▶ The majority of the laws of Islam were explained in Medina and then spread to other regions, therefore, those interested in learning and understanding Islamic instructions had to travel to Medina in order to realize their aims.

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Medina as an early centre of science and knowledge.

- ▶ It did not take long for Medina to become an important centre of science and knowledge and those who were educated there became specialists in subjects, such as jurisprudence, narration, and history.
- ▶ For many years, from all corners of the world, students travelled to this city for education, as stated by Ibn-al-Athir:
"Abdul Aziz Ibn Marwan sent his child to be educated in the educational centres of Medina.
- ▶ After learning religious studies and expanding his research, he travelled to other places and continued his advancement of knowledge with amazing speed.

The roles of Compilati ons, Collection s and Codificati ons

Some historians believe that compilation in Islam began in the second half of the first Islamic century, but it can be said that the writing and collecting of articles started from the beginning of the first century and at the time of the Prophet, because the Prophet appointed some people to write down the Qur'anic revelations.

They wrote it on paper, bones and flat stones. Several Muslims also collected the Prophet's (S.A.W) narrations, including Abdullah Ibn Abbas, who wrote the narrations he himself heard, and Muslims' historical accounts of war and the Prophet's participation in the Muslims' wars.

Become tradition – important to disseminate knowledge

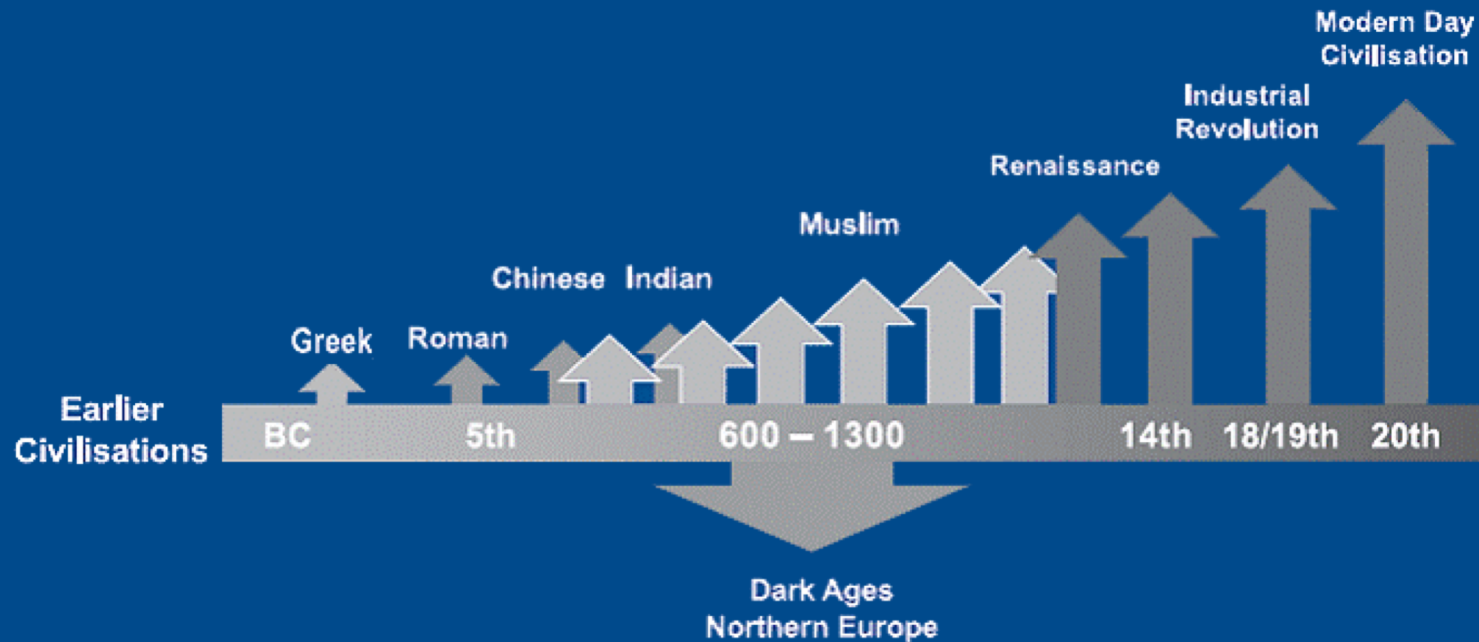
Muslim Heritage



Where Did The Islamic Scientific Movement Begin?

Why is the scientific movement in Islamic World Important??

History of Science and Civilisation as should be taught:





The beginning of the Islamic Scientific Movement



- ▶ In all the Islamic cities, schools were established, but in Islamic history, some schools were mentioned more frequently and were centres of research in various scientific subjects.
- ▶ The first and most important of these schools is Baghdad Academy, which is also known as Baitul-Hikmah (House of Wisdom).
- ▶ Bayt hikmah: It was established by Harun al-Rashid, the Abbasid Caliph.
 - ▶ It was place of collection books and literatures
 - ▶ It was a centre of attraction to interpreters and researchers from many countries.
 - ▶ The various scientific theories and practices developed in Baghdad Academy found an atmosphere conducive to scientific research.

Baytul Hikmah – Accelerating the Scientific Movement

- Al-Ma'amun of Abbasid, successor of Harun al-Rashid, continued to develop and assist the expansion of the House of Wisdom and spent three hundred thousand gold coins in translating Greek books.
- One of the conditions of the peace convention between Ma'amun and the Emperor of Rome was that the Roman Emperor ceded the Constantinople libraries to Ma'amun. Ptolemy's book on astronomy was among these books which Ma'amun ordered for translation.
- In other parts of the Islamic world, scientific centres similar to the House of Wisdom were established, particularly after the downfall of the Caliphate and the resultant independence of small and large countries.



Amazing Facts About The House of Wisdom



Relation between 19 Cultural and educational traditions!

- Hajj As a Scientific Congress For Islamic Schools
 - Very often, after performing their pilgrimage, Muslim scientists stayed in cities like Andalusia or Maghrib1 in Egypt, held discussions with their colleagues and took notes from the scriptures and books available.
 - Through this common scientific language, knowledge spread in all four corners of the Islamic world with tremendous speed. Due to these relations between educational centres, they progressed towards a brighter civilization.
- cultural and educational relation
 - Resulting a new scientific civilization that came into existence in less than two centuries and spread all over the world.
 - Become a miracle



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20 Miracle of Muslims as a result of knowledge culture and tradition

Muslims' amazing achievement in different subjects:

- Islamic scientists studied algebra and trigonometry on the basis that the Indians and the Greeks established and they revealed them and expanded them. In addition, they also conducted some studies in astronomy.
- They have criticized Ptolemy's delegation, which paved the way for scientific movements in the sixteenth century. Muslims contributed new medical observances, founded new methods of chemistry, introduced new information regarding measurements, weights and atmospherical effects in physics.
- Their research in geography included the whole world at that time, and they wrote many useful books about civilized countries and also introduced a new way to analyze the philosophy of history.





From
School
(Madrasah
) to Baitul
Hikmah to
a
University!



- The spirit of Islam spread from Mecca and changed darkness into light; ignorance into knowledge and civilizations.
- In this universal scientific movement, universities were once again established in Islamic lands and scientific works were also revived.

Spot the similarity



Palaces and Mosques Become Schools

- ▶ Although in the early days of Islam there were no special places for propagating science and culture and since there were no schools or universities, study groups were formed in mosques and gradually even in the Caliph's palace, the minister's house.
- ▶ Work areas and farms were converted into scientific, cultural or literary centres.
- ▶ Many people became scientists and writers and young and old, masters and slaves, were all busy learning.
- ▶ Some slave-owners even taught their slaves poems, narrations, history and literature and after learning these subjects, they were wonderful gifts.



Establishment of University

- In the next stage of history, Islamic schools, universities and research centres were established.
- Some historians believed that Nizamiyyah University in Baghdad was the first college for Muslims, which was established by Nizam al-Mulk.
- Nevertheless, many experts and historians believed that prior to Nizamiyyah, there were many colleges and universities in Islamic lands. A quotation from a British Encyclopedia states:

"When Ma'mun was a crown prince, he established a university in Khorasan and for lecturing he invited experienced and educated professors from different countries."

- In the year 400A.H., Hakim, the Fatimi Caliph, established a large college in Egypt, dedicating many books and he also appointed a group of jurists and professors for lecturing.

Group Discussion

- Discuss the underlying motivation of the mediaeval Muslim scientists towards knowledge and science.
- Discuss the influence of ancient Greek scholars to the mediaeval Muslim.
- What was the main contribution of the Venice city to the European in the context of knowledge enhancement?

