DEVELOPMENT OF THE MIDDLE EAST SCIENCE AND EDUCATION SYSTEM

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ABSTRACT
The Islamic education systems in the Middle East have passed numerous phases, starting from the time of Rasulullah until the power of Turk Usmani. Due to the development of science and technology, this study aims to formulate Middle East’s education systems. This research uses the type or approach of library research, namely the study of theory, scientific reference, and scientific literature related to the developing norms, values, and culture over a studied social situation. Results of this research show that the implementation of the education system in the countries in the Middle East cannot be separated from the history of Islamic education in its emergence. Until now, these countries, like Iraq, Saudi Arabia, and Egypt, are still adopting education systems focused on Islamic teachings. Saudi Arabia has a particular education in the Islamic field to prepare a clerical council.

1. INTRODUCTION
Education has been defined as diverse by many parties with backgrounds and views. In this regard, because of the incommensurable diversity of cultural conditions and goals, the definition of education has been demonstrated differently and cannot have a universal meaning. (Carr, 2003, p. 201) However, these views meet the initial conclusion that education is a process of preparing the young generation to drive life and fulfill life goals more effectively and efficiently. (Azra, 2012, p. 3-5) If talking about the educational system in the Middle East, it cannot be separated from the development of Islamic education.
Pre-Islamic Arabic society does not have a formal educational system, the appearance and development of Islam drive massive changes that bring the educational efforts of the Arabic community at that time.

In the beginning, systematic formal education had not been implemented yet. It can be said that education is informally implemented and more related to the effort of Islamic preaching, known as the spread of primary Islamic teaching. (Azra, 2012) However, along with the developmental era and the changes in Middle East power, the implemented educational system has developed and advanced in its application. Changes in the educational system also align with science development in the Middle East. Many Islamic scientists were born and contributed to the advancement of science.

Various groups that produce their respective definitions can understand each discipline and science. Even though science cannot be explicitly defined, a definition of science is adequately interesting due to the use of the proper term in its explanation. (Ismunanto, 2017, p. 36-37) Syed Muhammad Naquib Al-Attas argues that science is divided into two kinds, though the two of them are a part of the perfect unity. First is knowledge from Allah SWT. as a gift to humans, and second is the knowledge that is obtained from the humans’ effort from their experience, study, and investigation (Al-Attas, 1995, p. 78). In Islam, the birth of science begins with the intellectual tradition that cannot be separated from the presence of the Islamic views based on AL-Qur’an and its explanation from the Prophet Muhammad SAW.

This writing intends to describe education and science development in the Middle East. However, to constrain the focus of the study, the author is going to discuss Islamic education in the Middle East as the focus of the study. From the beginning, the Middle East region has been the basis of the birth of Islamic civilization, especially in Islamic educational studies. The birth of Muslim scholars is undoubtedly fascinating to study as learning materials, comparisons, and sources of ideas in implementing the educational process.

This writing discusses Middles East education over the era of the Prophet Muhammad SAW in Mecca and Medina and its development in the era of Khulafaursayidin, Umayyad, Abbasid, and Ottoman Turk dynasties. The author also discusses the development of Muslim scholars’ contribution toward the development of the science that cannot be separated from the vital role of libraries in the Middle East, until how the contemporary educational system is implemented in several countries of the Middle East, in which the author takes three countries for study cases, Saudi Arabia, Iraq, and Egypt.
2. METHODS

This study constitutes a type of approach to literature research. According to Sugiyono (2012), the literature review studies theory, reference, and other scientific literature related to developing culture, values, and norms in the social situation under study. According to Zed (2003), a literature review can be interpreted as a series of activities related to collecting literature data, reading, recording, and processing research materials. The literature review can also review various reference books and previous similar research results to obtain a theoretical basis for studying the problem (Sarwono, 2006). A literature review is also a technique of compiling data from books, literature, notes, and records related to issues to be solved (Nazir, 2003). Based on its nature, this research includes descriptive research that focuses on systematic explanations regarding facts obtained during the study.

Data sources in this study are books, journals, and the internet sites associated with the chosen topics. After the whole data had been collected, the next step continued with analyzing data and the further conclusion presented. The author uses critical analysis techniques to obtain precise results in analyzing data. Critical analysis is a viewpoint stating that the author is not a subject without values while conducting research. A critical analysis commonly comes from the view or specific values believed by the researcher. Furthermore, the researcher’s alignment with the researcher’s position on a problem will determine how the text/data is interpreted. The critical paradigm is more about interpretation because, with the interpretation, we reach the inner world, enter the envelope in the text, and respond to the meaning behind it. This analysis can be used to analyze the form of communication, like newspapers, radio news, TV advertisement, and other entire materials.

3. RESULTS AND DISCUSSION
3.1 Patterns of the Islamic Education of the Era of the Prophet on Mecca and Medina Phases

In Islamic education, Rasulullah was the first educator to do the transformational science process, internalizing spiritual values and providing emotional guidance. (Hasibuan, 2007, p. 8) the educational pattern in Rasulullah’s era could not be separated into methods, materials, institutional evaluations, basics, purposes, and others that had been applied during the implementation of the educational process according to theoretical or implemented way. The educational pattern in Mecca aligns with the Da’wah stages toward the Quraysh, which is divided into three stages (Kamaruzzaman, 2007, p. 36). (1) the secretly and individually educational stage, (2) the overtly educational stage, and (3) a generally educational stage. In the Mecca phase, there were two Islamic educational institutions; Baitul Arqam (house of Arqam), Ibn Arqam, and Kuttab. Baitul Arqam Ibn Arqam was the first place where the Rasulullah and the Muslims gathered to study laws and the basics of Islamic teachings (Kamaruzzaman, 2007, hal. 37- 39). This home was the first educational institution in Islam, and the Rasulullah was the first educator.
A Kuttab’s education was different from the education held in Baitul Arqam Ibn Arqam, which taught materials regarding laws and the basics of Islamic teachings. In etymological terms, Kuttab comes from Arabic words, namely Kataba, Yaktubu, Kitaaban, which means “has written,” “is written,” and “a writing.” Whereas, Maktab is defined as “a table” or “a place for writing.” Referring to Islamic educational history, the term Kuttab has been known by pre-Islamic Arabians. (Kamaruzzaman, 2007, p. 37-40) Conforming to Ahmad Syalaby’s view, the Kuttab, as the educational institution, is divided into two kinds. Firstly, Kuttab had a role in reading write learning with primary texts of Arabic poems, and mostly the teachers were not Muslims. (Hasibuan, 2007, p. 8-11) this kind of Kuttab was the primary educational institution only focused on teaching reading and writing skills, and the materials taught particularly were poems and Arabic proverbs containing qualified traditional values. Initially, Kuttab’s education was held in the educators’ home who taught them.

The second kind of Kuttab was an educational institution focused on teaching Al-Qur’an and the basics of Islamic teachings. (Hasibuan, 2007, p. 8-11) This instruction was carried out after Qurra’ (the experts in reading Al-Qur’an) and Huffadz (one who memorizes Al-Qur’an) were gathered. The educators in this educational institution were Muslims themselves. The second institution was further education after the former Kuttab, where students could read and write. In this Kuttab, besides teaching the science of Al-Qur’an and the basics of Islamic teachings, students were also taught other knowledge, like Arabic grammar and arithmetic. In its development, for Kuttab, which had been established by the wealthy, students gave other additional materials, such as riding horses and swimming.

In the Medina phase (622-632 AD/1-11 AH), Rasulullah initially built the ‘institutional’ mosque. From a mosque, Rasulullah provided education and Islamic teachings. He braced the unity of Muslims and scraped the remnants of hostility, especially in the community of Anshar and Muhajirin. (Rahman, 2018, p. 7) However, Kuttab, as an educational institution in Mecca, was still carried out and run in Medina. There were even numerous developments in the providing of materials. Rasulullah had received the more revelation, the more materials were taught, like materials concerning family, trade, and socio-politics, and without ruling out the materials discussed in Mecca, such as Tauhid and Aqidah.

After migration, Rasulullah established north of Medina Mosque and Al-haram Mosque, known as “Al-suffah,” where the poor who diligently studied lived. These people were known as ‘the experts of Al-suffah’. The mosque’s construction was also intended to promote and provide welfare for Muslims. In addition, a mosque also had other functions, such as a place for worship, an Islamic educational institution, and a center.
An education held in this mosque has a system of *Halaqah* (Round), in which the sheikh commonly sat near a wall or mosque pillar, and his students sat in front of him in a circle, with their knees touching each other. When reviewed further, the Halaqah system did not only contribute to the development of students’ intellectual dimensions, and it touched their emotional and spiritual sides as well. A *Halaqah* usually consists of 20 students. (Hasibuan, 2007, p. 8-14) in *Halaqah*, teaching and learning activities are commonly carried out through discussion and dialog. The most important instruction was *Imla’* (*writing in Arabic*), which depended on the study and discussion topics in *Halaqah*. Afterward, Imla’ would be continued by Sheikh regarding the discussed material, and the explanation was adjusted to the student’s abilities. Before the end of the class, Sheikh was going to evaluate them in many ways, like doing answers and questions and checking students’ notes. Sheikh’s ability to manage a *Halaqah* educational system would have a considerable impact on the advancement of *Halaqah*. In common, if *Halaqah* were advanced, it would appeal to plenty of people studying.

Learning materials in the Medina phase were provided with a broader scope rather than education in Mecca, in which the education given consisted of brotherhood education, social welfare education, family welfare education, and defense and security education. In the Mecca phase, the main activity development can be seen as social and political education. (Zuhairini, 1997) The materials given were also more complex during the revelation revealed to Rasulullah at that time (Kamaruzzaman, 2007, p. 36).

### 3.2 The Development of Islamic Education during the Period of Khulafaur Rasyidin – Abbasiyan

In Rasulullah’s era, the Islamic state covered the entire Arabian Peninsula, where education was centered in Medina, then, after the Prophet died, Khulafaur Rashidin replaced governmental rules, and the territory of Islamic rule had expanded beyond the Arabian peninsula. The Khulafaur Rasyidin also makes education one of the centers of attention. Numerous educational centers in the leadership of *Khulafaur Rashidin* cover Mecca, Medina, Basra, Kufa, Damascus, and Egypt.

The education that took place during the period of Abu Bakr Assiddiq was not much different from the education during the period of Rasulullah. Education progressed during the caliphate of Umar bin Khattab, where teachers had begun to be appointed and given salaries to teach in newly conquered areas. During the caliphate of Utsman bin Affan, education was handed over to communities and the Prophet’s companions, which not only focused on the areas of Medina but also allowed to teach to regional areas. Moreover, this system differentiated education during the caliphate of Ali bin Abi Thalib. (Dalpen, 2007, p. 51) At that time, education did not receive much attention because it was caused by conflicts that led to disturbance.
With the end of the leadership of the caliph of Ali bin Abi Talib, the power was replaced by the Umayyad dynasty. The Umayyads ruled for approximately 91 years, and while the number of the reformations adequately took place in educational development and advancement. (Candra, 2007, p. 53) The science developed was not only in the field of religion but also in the technological aspects. Meanwhile, the educational system remained the same as it was in the era of Rasulullah and Khulafaur Rasyidin, it was Kuttab where the learning process took place at the mosque. In the Ummayad era, the basics of educational advancement appeared, and intellectual Moslems started growing. At this time, the pattern of education was decentralized, lacking age levels and standards. Where many scientific studies were centered in Damascus, Mecca, Medina, Kufah, Egypt, and Cordova. (Nata, 2010) Numerous sciences were also developed, including philosophy, medical science, astronomy, exact sciences, literature, building art, fine arts, and musical art.

In contrast to the kuttab system in the khulafaurrasyidin era, where teachers were not paid (Dalpen, 2007, p. 51), In the Umayyad period, teachers were paid adequately because much progress had been made, including in the economic sphere. Many authorities paid salaries and provided a place at the palace for parents and their children. On the other hand, some teachers were not paid and conducted teaching in yards around the mosque, especially for students with low economic backgrounds. There were several forms of education in the Umayyad dynasty, including palace education, the advice of dignitaries to Muaddib, Badiah, and the library in Qurtubah (Cordova) built by Al-Hakam bin Nasir, and Bamaristan (a Hospital for prayers and places of medical studies). (Candra, 2007, p. 53). Seen from education development during the Umayyad dynasty, it can be concluded that the development of teaching aspects developed quite rapidly. However, the education system still has many similarities with the education system in the era of Rasulullah and Khulafaurrasyidin.

After the Umawiyah Daulah, the Abbasid Daulah (132-656 H / 750 - 1250 AD) was established, in which, in his leadership, science was seen as something essential and noble. The caliphs and other authorities actively opened up the most expansive possibilities for the development and advancement of science.

The Abbasid Caliphate’s era was known as the heyday and goldenness of Islam, and people during the reign of this dynasty were in a high level of prosperity. The caliphs who led were strong figures and gave great attention to science and education, furthermore, many Moslems conducted critical studies on science and contributed to its development.
What had been pioneered by the Umayyad Daulah was continued by the Abbasid Daulah, where the caliphs had employed translators who translated educational books, such as medicine, exact sciences, and philosophy from Greek, Parsi, and Sanskrit. It was still going on in 830 AD, during the caliphate of al- Ma‘imun ibn Harun Ar-Rasyid (198-218 A.D./813-833 AD).

3.3 The Education System in Schools and the Development of Islamic Education in the Period of Usmani Turkish

The emergence of formal educational institutions, in Islamic education, in the form of schools, was the form of developing educational systems and instructions that were previously carried out at mosques. There were several factors behind schools’ establishment outside mosques (Nata, 2010): 1. Halaqahs in which in it there were teaching of various sciences and application learning through discussion that led to lively debate. This often disturbed the surrounding people and those worshipping at the mosque. Because of this situation, the building with rooms or classes was established as a place for conducting learning, so either Halaawahs or others did not mutually disturb the learning process. 2. The science that was developed broadly, including religious studies and general science, required more Halaqahs, which cannot possibly be accommodated within the mosque.

The development of Islamic education in the period of the Usmani Turks would not be separated from the cultural setting and socio-political conditions that occurred at that time. Usmani Turkey was a cultural fusion of several Countries, covering Persian, Byzantine, and Arab. (Poeradisastra, 1997). Religious life was the most important part of the politics and social system during this reign,
and the rulers firmly held Islamic teaching. Sheikh constituted a higher position in the country and society. As the highest clergy, Mufti was authorized to deliver the official legal ruling on the point of Islamic law regarding religious issues.

Sufism in this phase was highly popular for Moslems, leading to adequate rapid development. The developing Madrasas at this age were characterized by the activity of Sufi, which continues to be centers of strengthening Riyadhah (spiritual activity), namely the activity of paving the way to God under the guidance of the authority of Sufi teachers. At this time, science became narrow because madrasas, the only public educational institutions, only taught religious education (Zuhairini, 1997). In the Middle Ages, Islamic education decreased while the communities deepened Tasawuf due to their frustration with the existing condition. Practically, science and technology remained stagnant. The progress of the Ottoman military was not matched by science. Began with the modern era’s reformation, Sultan Mahmud II’s era, followed by Abdul Majid in the various fields, including education, keeping going to the Ottomans. Sultan Mahmud realized that traditional madrasas no longer conforming the guidelines of the 19th century. During his reign, the community was not profoundly enthusiastic about sending their children to Madrasas and prioritized them learning practical skills in industrial companies. This accustom made the increase in illiterate. To tackle this problem, Sultan Mahmud II ordered not to prevent children to adults from going to Madrasas. Tackling these problems, Sultan Mahmud II asked children to adults not to hinder from studying in Madrasas. II. the changes were as follows; requiring students to attend the classes, establishing a class system, opening boarding schools for orphans, and supervising the quality of teachers. The renewal continued until the emergence of the term Tanzimat, defined as arranging, compiling, and improving. (Nata, 2010) The elementary school also has continued to change. Hence, the schools were rerecorded and rearranged. Ottoman rulers enforced that anyone could not be a teacher. Henceforth, the educational field got huge attention, accompanied by the formation of a public school ministry that was in charge of implementing the authorities at school and supervising them. The development of Islamic educational institutions in the Ottoman elementary schools that had been developed, and Madrasas and colleges also significantly developed.

3.4 The library and Development of Science in the Middle East

In the history of the Middle East’s scientific development, the library ranked the most critical feature. The development and advancement of science in the Middle East could not be separated from the presence of the library, which became the center of science. A library in Islamic history was not only for scientist’s book storage, it was more than for several functions, such as (1) a place for students of various educational levels to search for references, (2) literature study for Islamic scientists, (3) the center of book storage and the manuscripts of the scientists, (4) a meeting place
to carry out the scientific discussion and vividly intellectual debate, (5) the symbol of pride for the caliphate and the local rulers (Saepudin, 2016, p. 28)

The second caliphate of Abbasiyyan, Abu Ja’far Al-Manshur, was the library’s first founder, which functioned as a storage place for books over various writings from the Arab society or writing translated from non-Arabic. (Saepudin, 2016) under caliph Harun A-Rasyid, books and manuscripts were issued for translation. At that time was also built a particular building for the books stored. This magnificent building was named Baitul Hikmah, which then experienced rapid development until it became a famous scientific center. The progress of Baitul Hikmah became more evident under the caliphate of Al-Ma’mun, son of Harun Ar-Rashid. Al-Ma’mun often invited copyists, translators, and writers to come in there. Baitul Hikmah was developing into a special library and the center of the translation, then expanding into a writing and research center, and increasingly developing into an academy that issued diplomas until it became a center for astronomical study. (Saepudin, 2016, p. 33)

Numerous translators were born in Baitul Hikmah and existentially contributed to the quickly accessing the science, and the translation process was not only for Arabic writing, it could be Indian, Persian, Greek, Syriac, and Batinid, which thus translated into Arabic and Arabic writing instead translated into other languages. Among the translators were Jibril bin Bakhtisyu, a doctor who was called to the palace to become the doctor of Caliph Harun and Al-Ma’mun, Yohanan bin Masuwiyah, and Hunanin bin Ishak. (Saepudin, 2016) These scientists also not only translated the writings but provided comments, corrections, and research on the writings. The presence of libraries had a massive role in the revival of knowledge in various disciplines. A library was constituted to be a place that had born scientists to contribute to the advancement of science.

Many Muslim scholars became the driving force for the various scientific fields, such as Al-Khwarizmi (780-850 AD), the scientists who found the science of Algebra. He was an expert in astronomy and the solar system. In mathematics, Mohammad Bin Ahmed, in the 10th century, discovered the concept of zero or Sifr. (Afridi, 2008, p. 7) He succeeded in creating a revolution in mathematics by simplifying numbers, which became a significant discovery in the history of science. Likewise, Abu Rayian Al-Biruni (973-1048 AD), an inventor of the sinus equation and compiler of an Astronomy encyclopedia of Al-Qanan Al Mas’adiy, introduced the terms the horizon, zenith, nadir, and other terms.

Regarding medical science, the world has known Abu Ali Ibn Sina (980-1037 AD) and is better known by the Western as Avicenna. He was the best doctor until the modern age. His famous book, Al-Qanun fi al-Tibb, became a reference for medicine textbooks even in Europe for more than 700
years. Including this book, Ibn Sina has written 246 books. (Afridi, 2008, p. 13). Still, many more scientists have made important scientific discoveries, such as Al-Razi, Az-Zahrawi, Al-Idrisi, and Al-Baitar, and hundreds of other Muslim scientists who did a lot of research, explored their knowledge in libraries, and excessively contributed to the progress of the science.

3.5. The Education System in Countries of the Middle East

The educational system in Saudi Arabia adopted the existing curriculum in other Arab countries, such as Egypt. This country’s curriculum emphasized the subject of religious education. The educational system in Saudi Arabia segregates male and female students based on Islamic teaching. In general, the educational system in this country has divided the system into three main parts: public education for boys, public education for girls, and Islamic education for boys.

For general education, both male and female students complied with the same curriculum and took the same annual examination. Public education is divided into four parts (Assegaf, 2003): Elementary school (6-12 years old), Junior high school (12-15 years old), Senior high school (15-18 years old), and Higher education (university and academy). In practice, the school curriculum for male and female students at every level has the same system, however, for female schools, there was an additional subject, such as household management, otherwise, the subject of male schools applied physical education.

The history of education in Iraq was closely related to the history of Islamic education during the Abbasid era, where Baghdad city was the capital city of Abbasiya Daulah, which was very strategic at that time. In implementing the educational systems, Iraq was not far from the standard education systems in the Middle East, as follows: Ibtidaiyah level for six years, Mutawassitah level for three years, Tsanawiyah level for two years, and the university level for four years. At the Ibtidaiyah level, from grade 1 to grade VI, religious education was taught for 2 hours a week. Likewise, for the Mutawassitah and Tsanawiyah levels, religious education was conducted for 2 hours a week in each class. (Assegaf, 2003)

Egypt implemented compulsory education from grade 1 to grade 9 with an education system with a 6 + 3 + 3-pattern, covering six years for elementary school, three years for junior high school, and another three years for senior high school. In Egypt, the Ministry of Education and the Ministry of Higher Education were generally responsible for administering education. (Saleh, 2015, p. 55-56) The Ministry of Education was responsible for managing a preschool, elementary school, preparatory and middle school, while the Ministry of Higher Education was responsible for managing higher education. The Supreme Council of the University was in charge of setting overall
policy and supervising the formation of new institutions, where Al-Azhar education was under the authority of the Al-Azhar Ministry of Policy.

Elementary school in Egypt was intended for students from 6-12 years old, which was the first stage of a compulsory learning program for nine years. The Ministry of Education has implemented the curriculum for this instruction. The materials taught to students covered Arabic, English, Mathematics, Religious Studies, Music, and Natural Sciences (Saleh, 2015, p. 56). Some additional materials were also provided and adjusted to the levels of every class as well as an agricultural science would be introduced for grade 4, in grade 5 were added Arts, Social Sciences, and Household Economics. These materials were given to support students’ skills in everyday life.

The students continued school to the secondary level, which was intended for students aged 12 to 15 years. In this curriculum, the materials taught were the advanced materials from the previous level. Yet, the school offered new materials, such as Industrial education and European language level. In senior high school, there were three levels. Firstly, the general senior high schools focused on academic and college preparatory programs. Secondly, Al-Azhar senior high school offered an academic program focused on Islamic religious teaching. Thirdly, senior high school for the technique that focuses on the vocational and technical instructional program. (Saleh, 2015, p. 55-56).

4. CONCLUSION

The development of the Middle East’s Islamic education system has gone through many different phases. Starting from the education of the period of Rasulullah dividing into Mecca and Medina phases, then continued under the leadership of Khulafaurrasyidin, the Umayyad Daulah, the Abbasid Daulah, and the power of the Ottoman Turks. In these phases, there were differences in the application of the education system. This was due to the development and discoveries in education and science. However, there were several phases where education was not a major concern, such as during the leadership of Ali bin Abi Talib, because, at that time, many conflicts led to disruption. Seen from the era of Rasulullah, it could be known that Islamic education has continued to grow, in which it was initially an informal education carried out at home, thus advanced to the establishment of formal and more organized educational institutions. The development of Islamic education in the Middle East has enormously contributed to the scientific advances and the existence of places to study in the global world.

Scientific advances in the Middle East nonetheless cannot be separated from libraries, the most known was Baitul Hikmah which was established under the Abbasid Daulah. The library became a center for knowledge and a gathering place for Muslim scientists. From the library were born plenty of
book translators and scholars who have enormously contributed to various scientific fields. The implementation of educational systems in countries of the Middle East at this time could not also be segregated from the history of Islamic educational development at the beginning of its emergence. The countries in the Middle East, like Iraq, Saudi Arabia, and Egypt, still apply the educational system focused on Islamic teachings to date. Indeed, Saudi Arabia has specific education in Islamic religion to prepare a clerical council.

5. REFERENCES


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