

Implication of al-Attas's Islamic philosophy of science on science education

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ABSTRACT

Science education is often suspected as a cause, not only student become far from God, furthermore make students have secular thinking. Therefore, this paper aims to reconstruct the concept of science education based on the ideas of Syed Muhammad Naquib al-Attas on the Islamic philosophy of science. With the Islamic concept of science education, students are expected to increase piety to God. This paper discusses the thought of al-Attas on the Islamic philosophy of science in his works such as "Islam and the Philosophy of Science", "The Positive Aspects of Tasawwuf: Preliminary Thoughts on an Islamic Philosophy of Science", and "The Concept of Education in Islam". After that, this paper attempts to extract the Islamic philosophy of science, especially ontology and epistemology, into science education concept. This paper concludes that there are several implications of the Islamic philosophy of science in science education. First, the purpose of Islamic Science education is to understand science as God's way of governing the universe. Second, science education should integrate the revelation with reason and the senses as a source of scientific knowledge. Third, science education should also teach students environmental awareness. Fourth, science education should pay attention to the language in the teaching of science. And lastly, science education should taught a prayer and worship perfection as one way to gain scientific knowledge.

Keywords: *ayat; integration; environmental awareness; language; prayer*

I. INTRODUCTION

Before discussing Islamic Science, we need to understand a little about the condition of science education at the present time. Maybe we are not familiar and have a strange feeling when we hear the phrase Christian Science or Atheist Science. But in fact, many scientists have discussing the paradigm of science that we use now is not really neutral, even more precisely to be atheistic.

If atheism is defined as the belief that there is no God or gods, then maybe we will not find the text in science textbooks that is openly propagates atheism. But in fact, many of the assumptions held by science, was atheistic. For example, the paradigm that nature can work itself without the need of a god.

Atheism itself, apart from his rejection of the god, also recognizable from the underlying worldview. Worldview which became the basis the basic belief that atheism is simply the natural alone that exists. So that belief is known as "naturalism" or "materialism". Worldview naturalism does not allow the possibility of the existence of the supernatural. This belief will always interpret natural phenomena naturalistically. (Walters, 2010, 36)

The danger is the atheistic assumptions contained in science, one can unconsciously hold atheist worldview. A biologist J. B. S. Haldane, as cited by Stewart Goetz, admit it, "My practice as a scientist is atheistic. That is to say, when I set up an experiment I assume that no god, angel or devil is going to interfere with its course ...I should therefore be intellectually dishonest if I were not also atheistic in the affairs of the world." (Goetz, 2011, p. 264).

Using this western paradigm in science teaching certainly contrary to national education goals stated in the National Education Act. In Law No. 20 of 2003 on National Education System, one of the goals of national education is to the development of students' potentials to become a man of faith and piety of One and Only God.

Based on the above, we need the right concept in science education that is based on that Islamic worldview. In this case, Syed Muhammad Naquib Al-Attas has formulated a philosophy of Islamic Science in some of his books. However, the Al-Attas's Islamic philosophy of science is still need to be extracted into the concept of Islamic Science education.

II. AL-ATTAS AND ISLAMIC SCIENCE

Al-Attas was born in Bogor on 5 September 1931. His full name Syed Muhammad Naquib bin Ali bin Abdullah bin Muhsin Al-Attas. He had studied religion in Malaysia. However, during the Japanese occupation, he studied Islam traditionally in Pesantren *al-Urwatul al-Wutsqa* in Java. He continued his education at the university level at the University of Malaya in Singapore. He has a MA from McGill University in Canada. He completed his doctoral education at the School of Oriental and African studies at the University of London. Upon returning to Malaysia, he founded the International Institute of Islamic Thought and Civilization (ISTAC) in Kuala Lumpur (Daud, 1998, 1-21)

Professor Dr. Syed Muhammad Naquib Al-Attas was an influential scholar that is also a polymath. Polymath is the person having mastery the various types of knowledge. In this case, Al-Attas mastering and become a reference in the field of religion, metaphysics, theology, philosophy, education, philology, letters, art and architecture, and military Sciences. From these various fields, it can be a common thread, which is Islamic worldview (Sabjan, 2014, 66).

Al-Attas thought about philosophy of science can be read in two books entitled *The Positive Aspects of Sufism: Preliminary Thoughts on an Islamic Philosophy of Science* published in Kuala Lumpur in 1981 by the Islamic Academy of Science and Islam and the *Philosophy of Science* published in Kuala Lumpur in 1989 by the International Institute of Islamic Thought and Civilisation (ISTAC).

III. ISLAMIC PHILOSOPHY OF SCIENCE

Philosophical discussion usually includes three aspects: ontology, epistemology and axiology. Here, the discussion of Al Attas's philosophy of science limited to ontology and epistemology because Al Attas did not mention axiological issues. Nevertheless, we can draw axiological implications on science education from Al Attas's thought.

A. Ontology

The most important principle of the Islamic philosophy of science is that, in contrast to the atheistic view that only limits on the natural world alone, reality according to Islam including natural (*syahadah*) and supernatural (*ghaib*) world. So even for the sake of the scientific discussion science can be defined as the study of the natural world, but still with a belief in the supernatural, that Allah regulate the natural world. From here explicitly, Al Attas explains that science is the definition of reality, not only definition of natural world. (al-Attas, 1999, p.2). Therefore, Adi Setia categorize Al Attas has a realist view of the philosophy of science (Setia 2003, p.176).

In the Islamic worldview, nature has a status as verse (*ayat*). Al Attas explains that the Qur'an describes nature as *ayat* or sign that has a meaning. Furthermore, nature is a form of divine revelation so that it can be analogous with the Qur'an. The difference is the natural world is created (Al-Attas 1995, p. 133).

How nature becomes *ayat* (a sign of power) of God? This is because nature shows their regularity. This regularity shows that there is a regulator of the universe. Science does not directly prove the existence of God. But science shows that there are patterns in nature that is manifested in the form of laws, formulas and theories. This regularity is the decree of Allah. Allah' decree in nature is based on Surah Al Furqan verse 2: ... [he] has created each thing and determined it with [precise] determination.

In contrast to Islam, the West actually negate the spiritual and religious values from the nature (disenchantment of nature) in order to advance science. According to Western thought, if God exists then nature can't be examined because God would arbitrarily vary

the patterns that exist in nature. Therefore, they think religion is a barrier to science. It is indeed closely related to the history of the emergence of secularism in which Christian theology contrary to the development of science (al-Attas 1978, p. 38).

Therefore, the concept of God's decree in nature is an important concept to understand in developing science. If God establishes order in nature, then we can examine it and formulate science. Unlike in Islam, the West, the natural order is still being debated. David Hume outlined that regularity in nature (the uniformity of nature, called Hume) is really just a habit that is not necessarily always the case. We know that this natural order from the induction. Whereas induction is the result from the observation. Therefore, regularity in nature are just assumptions based on habit (Hume 2007).

Conceptually, Islam recognizes that in certain situations God could have changed the natural order of certain according to His will, one of its forms is a miracle. For example, God changed the nature of the fire which is usually hot becomes cold when it touches the Prophet Ibrahim. But an event like this is a rare situation of human experience.

B. Epistemology

With the ontology of science as described above, Al Attas approach to science as a description from the ultimate reality is formulated according to the tradition of sufism and founded upon the authority of revelation, tradition, sound reason, experience and intuition (al-Attas 1981, p. 9).

With his sufistic views, Al Attas strongly emphasized intuition as a source of scientific knowledge. This is because intuition can reach the transdental. According to him, the intuition is not subjective but objective. Transdental views on things that can be obtained by anyone who take the Sufi path. Objectivity can be described as anyone who wants to understand quantum mechanics must master the physics and the study of mathematics as basic knowledge. This means that knowledge of the transdental is a positive knowledge and can be confirmed anyone who travel the same path (Setia 2003, p.176).

Still related to epistemology, Al Attas also propose a new method for understanding the nature of that is tafsir and ta'wil. Both borrowed from methods to understand the revelation. This methods can be borrowed because they both have the same ontological status that is equally *ayat* from Allah. Al Attas writes, "...for both the holy Quran as the Open Book and the world of nature as another Open Book, demand that their Words be interpreted in accordance with the valid methods of tafsir and ta'wil which are unique to Islam." (al-Attas 1999, p.7).

Tafsir used to understand muhkamat verses whose meaning is clear. While ta'wil used to understand mutashabihat verses whose meaning is vague. This method can be used also for the understanding of nature. As the Qur'an consists of muhkamat and mutashabihat verses, nature also contains the meaning that has been established and the meaning that is still ambiguous. Therefore, science can serve as the interpretation and ta'wil of facts found in nature.

This method can also be used to resolve the conflict between revelation and science. Basically, the Quranic verses may not conflict with science. If there is a conflict, it means something is still vague, either the Quran or science. The rule, vague meaning must follow the obvious meaning.

It could be a muhkamat verse contrary to science that can still be debated. In this case the understanding of science must follow the revelation. Or it could be a mutashabihat verse contrary to science already established, in this case the verse can be interpreted with the aid of science.

IV. IMPLICATION ON SCIENCE EDUCATION

A. The Aim of Science Education

In Islam, the highest aim of education is to know (*ma'rifat*) and close (*taqarrub*) to Allah (Yuliyatun 2013). This aim is in line with the concept of nature as an *ayat*. Therefore, nature as an object of science can't be studied as a mere matter, but as an *ayat* or proof of the greatness of Allah.

In the West, there is the phrase "science for science" or studying science only for development of science alone. From the ontological view, according to West, nature works by itself. Therefore, nature only becomes the object of.

As mentioned above, in the Islamic philosophy of science, nature is a sign to humans of the power of Allah. We also know that God has set rules for nature. The regularity of nature is basically the power of Allah to subdue nature for human well-being.

Therefore in practice, teachers should explain that these laws, theories and formulas that actually describes the regularity of nature as a sign of God's power. The students are directed to understand that science is actually a description of how God governs the universe.

B. The Curriculum of Science Education

There are two implications of the Al Attas' Islamic philosophy of science to science education curriculum. First, teachers are required to teach science integrally between the source of revelation and empirical once. The way is by teach the verse that has a clear meaning within a relevant science subject. For example, in a geography lesson, students learn about the structure of the mountain. For this topic, there are some relevant verses i.e. Surah An-Naba verse 7, "And the mountains as stakes?"

In explaining the contradiction between revelation and science, teachers can use the methods of tafsir and ta'wil as described previously. For example in biology lessons where frequently taught about human evolution. It certainly contrary to various verses of the Quran and the hadith which states that God created man directly, not through evolution (Martanegara, Husaini and Syafrin, 2019).

Islam teaches that the first human, Adam, was created by God directly. Adam did not have a father and mother. In Surah Ali Imran verse 59, Allah says which means,

Indeed, the example of Jesus to Allah is like that of Adam. He created Him from dust; then He said to him, "Be," and he was.

Second, in teaching science, teachers also need to be emphasized environmental awareness to the students. In addition that it is important for the survival of ecosystems, further because nature is a sacred sign of God. As Allah says in Surah Al Jatsiyah verse 13:

And He has subjected to you whatever is in the heavens and whatever is on the earth - all from Him. Indeed in that are signs for a people who give thought.

Regularity of nature is the result of the subjugation of God over nature. God subjugation of nature is basically for people to live well in the world. Therefore, we should take advantage of nature best possible way.

C. The Methods of Science Education

There are two implications of the Islamic philosophy of science to science education methods. The first is the Islamization of language in teaching science. Intellect expressing knowledge about nature through language. Therefore, the scientific description of the universe are not neutral because it depends on the subjective concept of each person view about nature. (Setia 2003, p.193) It is in line with Al Attas interpretation of human as *hayawatun natiq* not only thinking animal also means speaking animals (al-Attas 1989, p. 14).

Wendi Zarman in his dissertation gives an example how to change language of textbook science. For example, "The human body consists of organs, each of which has a specific function. In order for organs could cooperate well, required coordination."

In accordance with the process of Islamization of language, it should be inserted the word of God and His *rububiyah* into the sentence like the following example, "God has created the human being consists of organs, each of which has a specific function. In order for organs can work well together, he enables it to could coordinate with each other." (Zarman 2012, p. 123).

Second, teach the perfection of worship, and especially prayer, as a way to obtain guidance from God to understand nature. This is because we recognize that intuition is a way to gain knowledge, whereby we may inspired by Allah. With the perfection of worship, a person will get a position as a *wali* of Allah, where the vision of God will be the vision. This is explained by the Hadith Bukhari.

The Messenger of Allah (peace and blessings of Allah be upon him) said, "Verily Allah ta'ala has said: 'Whosoever shows enmity to a wali (friend) of Mine, then I have declared war against him. And My servant does not draw near to Me with anything more loved to Me than the religious duties I have obligated upon him. And My servant continues to draw near to me with nafil (supererogatory) deeds until I Love him. When I Love him, I am his hearing with which he hears, and his sight with which he sees, and his hand with which he strikes, and his foot with which he walks. Were he

to ask [something] of Me, I would surely give it to him; and were he to seek refuge with Me, I would surely grant him refuge.”

This practice has been carried out by muslim scholars in the past. For example, when Ibn Sina find difficulty in resolving a problem or understand a syllogism, he went to the mosque to pray to God for guidance (Rizvi 2006). This is similar to what is done by Imam Bukhari when compiling his Sahih. Imam Bukhari always take a bath and pray istikharah two rakaahs before inserting a hadith into his book (Dzulmani 2008, p. 50)

V. CONCLUSION

From the above discussion, it can be concluded there are five implications Islamic philosophy of science in science education. First, the purpose of Islamic Science education is to understand science as Allah’s way of governing the universe. Second, science education should integrate the revelation with reason and the senses as a source of scientific knowledge. Third, science education should also teach students environmental awareness. Fourth, science education should pay attention to the language in the teaching of science. And lastly, science education should taught a prayer and worship perfection as one way to gain scientific knowledge.

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