

A Model of the Integration of Science in State Islamic Universities in Indonesia

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ABSTRACT

The transformation of State Institute for Islamic Studies (IAIN) into State Islamic University (UIN) in Indonesia is aimed at developing the ideal model for the integration of science with Islam. UIN is given more authority and financial supports to develop basic and applied sciences in the fields of science and technology. The development of religious knowledge and science is the basis for the integration of knowledge. Yet, the question is, how is the integration of science has been developed by UIN? To answer this question, this article will use a descriptive-analytical method, based on interview and documentation, held in three pioneering UINs: in Jakarta, Yogyakarta, and Malang. This research finds out that the three Islamic universities have differently formulate their concepts of science integration. The concept of science integration at UIN Jakarta is one that is called the ‘content reintegration’; at UIN Yogyakarta is the integration interconnection, and at UIN Malang is the integration of textual (qauliyah) and natural (kauniyah) verses. Yet, all of them similarly develop both religious science and general science through the opening of new study programs.

Keywords: *Integration of science, Islamic university, and religion*

1. INTRODUCTION

The dichotomy of knowledge occurs in various universities in Indonesia. The diversity of tertiary institutions lacks the space and place for a correct understanding of the thinking that combines religion and modern science. The idea of reuniting science and religion has been the push of scientists. Therefore, it is necessary to examine the integration of relevant knowledge in the Indonesian context.

It was recorded in history that scientific progress among Muslims had taken place and reached its peak during the Abbasid era, precisely the time of the caliph al-Ma'mun (198-218.H/813-833 AD).[1] Educational experts say that the advancement of science can mean progress in the field of higher education. Muslim scientists are enthusiastic and open to master various kinds of science. The assimilation of culture and structure can sustain scientific institutions so that a great scientist who masters science and religion is born at the same time. This is the basis for the need for the integration of knowledge in UIN in Indonesia.

There were some opinions deny that the birth of great Muslim scientists was not found emerge from formal Islamic tertiary institutions. Charles Michael Stanton's research and research conducted by George Makdisi concluded that formal Islamic educational institutions did not produce scientists in the field of science.[2] This opinion is proven by the existence of an Islamic tertiary institution in classical times, the Madrasah Nidzamiyah in Baghdad, which was founded in 459 H / 1067 AD during

the golden age of Islam by a prime minister of the Salajikah Dynasty, Nizam al-Muluk, who did not develop science.[3]

The opinion of Stanton and Makdisi above is accepted by many Muslim scientists now. However, proof of mastery of all kinds of science became an inspiration in the development of UIN tertiary institutions in Indonesia. The discovery of Muslim scientists about the number zero (*shifr*) which means empty, is very valuable in the science of arithmetic, algebra until now that was discovered by al-Khawarizmi (780-847 AD).[4] The more practical structure of Arabic numerals, such as using units, tens, hundreds, thousands and so on, is different from Roman numerals. For example, the number 383 must be written CCCLXXXII.[5] Likewise in medicine emerged great scientists such as Al-Razi (865-925 AD), Ibn Haitsam (965-1039 AD), Ibn Sina (980-1037 AD) who were not graduates of the Madrasah Nidzamiyah.

Islamic universities in Indonesia need to be great Muslim intellectuals who are experts in science and religion. Ziauddin Sardar mention, Muslim intellectuals are educated who have special access to cultural values, so they can take leadership positions.[6] So Muslim scientists are expected to be those who contribute to the development of science and religion. In the interdisciplinary communication process, integral mastery of science is required.[7]

The above thought encourages Islamic universities to transform into universities that can develop science and religion in totality. Since 2002 there has been a transformation from IAIN to UIN in Jakarta, then in 2004

in Yogyakarta and Malang. This became the basis of research at three universities which became the locomotive for the establishment of the next UIN. What is the model for developing science integration that has been carried out by the three UINs in Indonesia?

The purpose of the discussion is to describe, analyze, criticize and study the choice of developing science integration in UIN in Indonesia. This can strengthen the institutional status of UIN as a reference in the development of science and religion.

2. RESEARCH METHOD

The problem of integrating science is examined using a qualitative paradigm with a descriptive and critical method. Data were obtained through interviews with three heads of quality assurance agencies, vice-chancellors in the academic field and documentation of the development of science integration in the three UINs studied. In the first phase, the researcher examines the names of science integration brands developed by the three UINs based on the data collected. The second phase conducts critical-analysis studies which are combined between reference sources and the opinions of figures at each of the UIN. The third phase is formulated into a new paradigm that can be developed in developing religious knowledge and science in other Islamic tertiary institutions in Indonesia.

3. THEORETICAL REVIEW

Amin Abdullah argues that theoretically can study the relationship between religion and science, so-called semipermeable, intersubjective testability and creative imagination.[8] The concept of semipermeable comes from the field of biology with the main issue in survival for the fittest. The relationship between science is based on the law of causality. Both religions and science penetrate each other. The relationship between religion and science is not limited by the thick walls that are closed to communicate. The scientific discipline still seems to be a limiting thread, but open to each other to communicate so that they receive input from outside their fields.

Second, intersubjective testability explains that science has signs that mark dialogically-patterned relationships. Each subject and object play a role in scientific activities. This theory views that the results of the research are not free from subjectivity, because there is always the intervention of scientists as science developers. Therefore, knowledge is not given just by nature but is constructed by scientists themselves. Therefore, the objective must be tested through intersubjective testability.

Third, creative imagination is the logic of inductive and deductive thinking that illustrates the workings of science in the creative imagination of scientists themselves. This theory explains how to produce new knowledge.

According to the theoretical above, that is possible that Islamic universities in Indonesia choose one of these

concepts, or all theories are takes to produce science integration. According to Armahedi Mahzar, it is difficult to dispute that historical reality which shows that the development of modern science that we know today originated in the development of empirical methods by Muslim scientists in the Middle Ages.[9] Therefore, the use of empirical methods in proving the truth of science and the truth of religious science.

4. RESULTS AND DISCUSSION

UIN Sunan Kalijaga Yogyakarta uses the integration-interconnection model in developing science. The results of the interviews with the quality assurance team and the lecturers have conformity to the information with the results of the study of book documents published in the framework of ten years of looking at the integration-interconnection paradigm at UIN Sunan Kalijaga. Speakers at the seminar as well as writers were key figures consisting of Amin Abdullah, Abdul Munir Mul Khan, Machasin, Musa Asy'arie, Khoiruddin Nasution, Hamim Ilyas, and Fahrudin Faiz, who discussed critically as a form of evaluation of the integration-interconnection of science applied for ten years old.[10] Amin Abdullah used the integration of science interconnection at UIN Sunan Kalijaga, referring to the ideas of Ian G. Barbour who discussed the relationship of religion and science in 1966 when in the West there was a separation of regions between science and religion.[8] According to Machasin that the paradigm of integration-interconnection of science will in time meet anomalies, anomalies or problems that are born due to the dynamics of reality.[10] Machasin thought that whether integration-interconnection could be continued or not. Machasin explained that the paradigm could be continued with the condition of being brave to get out of the mindset and openly accepting other perspectives.

The UIN Syarif Hidayatullah Jakarta develops science integration with content integration models. Its implementation in science courses must have religious content, and vice versa in religious science courses there must be science content. Based on this model, science is equal to religious knowledge. If traced to its historical roots, according to Nasr, the intellectual progress that resulted in a high Islamic civilization in the Middle Ages was due to the unity of view in the whole of Islamic teachings.[11] Following this thought, it is necessary to realize an Islamic educational institution that has a unitary paradigm of being related to the scientific basis developed. Whereas UIN Maulana Malik Ibrahim Malang develops science integration with the verse integration model. In Islam, verses have two types namely *qauliyah* verses and *kauniyah* verses. This model has links with the theory of Mehdi Golshani, a professor of physics at Iran's Syarif Technology University, examining the philosophy of science in the Qur'an. In the early centuries when Islamic civilization reached its peak, Muslim scientists answered questions relating to Islamic science.[12] Several different sciences he saw in a single and interconnected view like

branches of the tree of knowledge. The whole purpose of science is seen as the discovery of unity and coherence in nature. Accordingly, all sources of knowledge are considered one. To understand the various levels and levels of existence, they use an experimental approach in addition to an intellectual and intuitive approach. This model produces scholars who combine authority in the religious sciences with an encyclopedic knowledge of natural sciences.

According to Nasr, intellectual progress that resulted in a high Islamic civilization in the Middle Ages was none other than the view of unity in the whole teachings of Islam.[12][13] In another book, Nasr said: "Both Islamic education and Islamic science are related most intimate manner to the principles of the Islamic revelation and the spirit of the Qur'an".[14] In Islamic education, scholars can become scholars of science and religious scholars. The keyword they are scholars. Only in its specialization can it be said that scholars in the field of physics, scholars in the field of medicine, scholars in the field of interpretation, scholars in the field of *fiqh*, etc.

Both the Qur'an and the universe are God's verses. The verses can be understood not only seen but also unseen. Likewise, the Qur'an provides information on how to understand nature, through the senses. Vision and hearing are the main tools that help a person gain knowledge of the physical method. The Qur'an's scientific cues can be explained through observation as a central feature in the Western scientific tradition.[13][15] This can mean that Muslims need not hesitate from the role of revelation itself in developing science.

The Qur'an also shows intellectually and spiritually. Mehdi Golshani said that physical method in recent years in the West can be accepted through intellectual deduction in the natural sciences is no longer adopted.[12] For humans who study the Qur'an, it can't be denied how urgent it is with the instructions of natural science.

The concept of *Ulul Albab* which is widely mentioned in the Qur'an contains the understanding of scientists. They are an expert in all phenomena in the universe.[16] The *Ulul Albab* devotes all their potential to think about the creation of the earth.

Therefore, education should provide a way for human growth in all aspects spiritually, intellectually, imaginatively, physically, scientifically, linguistically, both individually and collectively besides motivating all these aspects towards goodness and perfection. Studying Islamic science is not necessarily in the form of compulsory subjects, but rather a learning experience which then becomes part of daily learning activities. For example, chemistry, physics, and biology courses are explained as the reality of God's perfect creation.

Science has to developed by UIN include physical objects unearthed by the *Tajribat* method, metaphysical objects by the *Irfani* method, and mathematical objects by the *Burhani* method. Therefore, science is a systematic knowledge both based on *Kauniyah* and the Qur'anic verse.

The term of science integration must be reconsidered because its essence can't yet be proven. Science and

religion are important to be mastered by scientists. Therefore, in the field of science that is certain and proven that have interconnection.

Articles are inspiring that integration can be done in different entities. Yusof and Zakaria, integrating the content of teaching material, pedagogy, and students' knowledge with various integration models.[17] Hasmori's article et al also explained that integration occurs in the K-Workers holistic model that masters technical, methodological, humanitarian, and social competencies.[18] This is very different from interconnection, can still be separated or can also be connected functions.[19][20]

5. CONCLUSION

This article shows that UIN in Indonesia has the autonomy to develop science and religion. Researchers find the same passion to integrate science and religion. However, there are differences in the names of science integration models among UIN, that is the focus of this research. UIN Yogyakarta uses the integration-interconnection model, UIN Malang uses the verse integration, UIN Jakarta uses the content re-integration. Although they are different in focus of the science integration, in practices, their application is similar, that is by opening up new department relating to natural, socials and religious studies.

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