Developing A Philosophy of Scientific Advancement In Muhammadiyah Higher Education Institutions Based on *Al-Islam and Kemuhammadiyahan (AIK)* Principles

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ABSTRACT

This article addresses critical ideas about constructing scientific philosophy within the Muhammadiyah and 'Aisyiyah Higher Learning Institutions (PTMA) circles through the concept of integrating Al-Islam and Kemuhammadiyahan (Islam and Muhammadiyah Principles), abbreviated as AIK, into the process of developing knowledge and science. Thus, the author provides a broad definition of AIK and distinguishes it into three main aspects. In the next step, the author explains two reasons for developing scientific philosophy in PTMA, including internal reasons in Muhammadiyah and Islam and external ones related to the development of modern science. Consequently, two approaches can be applied to integrate AIK into scientific development through objective and subjective approaches. In definition, the objective approach is a way of dealing with the issues through analyzing and re-building the structure of science it including paradigm (ontology), theories and methods (epistemology), and applications (axiology). In contrast, the subjective approach is the enrichment of the scientist through considering science and religion as complementary instead of contradictory.
Keywords: *AIK, IPTEKS, religion, science, scientific development philosophy, Muhammadiyah education philosophy*

ABSTRAK

Tulisan ini mengkaji upaya membangun filosofi keilmuan di lingkungan Perguruan Tinggi Muhammadiyah dan 'Aisyiyah (PTMA) dengan konsep integrasi Al-Islam dan Kemuhammadiyahan, yang sering disingkat sebagai AIK, ke dalam proses

pengembangan keilmuan. Untuk itu dalam tulisan ini, penulis memberikan definsisi luas terhadap AIK dan membedakannya ke dalam tiga aspek. Berangkat dari definisi dan klasifikasi ini, penulis menjelaskan ada dua alasan pokok mengapa perlu dilakukan integrasi AIK dalam pengembangan ilmu di PTMA, yang meliputi alasan internal dalam Muhammadiyah dan Islam sendiri, dan alasan eksternal terkait perkembangan ilmu modern. Menurut penulis ada dua pendekatan yang dapat diikuti dalam upaya integrasi AIK dan pengembangan ilmu, yaitu pendekatan objektif dan pendekatan subjektif. Dengan pendekatan objektif dimaksudkan pendekatan melalui analisis dan rekonstruksi struktur ilmu itu sendiri, yang meliputi paradigma (ontologi), teori dan metode (epistemologi), dan aplikasi (aksiologi). Dengan pendekatan subjektif dimaksudkan pengayaan jiwa ilmuan yang melaluinya dilakukan produksi ilmu pengetahui dengan suatu pandangan dunia yang melihat ilmu dan agama tidak saling menolak, tetapi saling melengkapi satu sama lain.

Kata kunci: AIK, IPTEKS, agama, ilmu, filosofi pengembangan keilmuan, filosofi pendidikan Muhammadiyah

INTRODUCTION

Muhammadiyah, as an Islamic Da'wah movement with the tagline of *amar makruf nahi mungkar*, has run educational businesses for more than a century. From that long experience, the essence of an educational philosophy has been crystallized as a reference for implementing the intellectual development process.[1]   For education at the tertiary level, Muhammadiyah's experience has passed at least half a century. Muhammadiyah and Aisyiyah Higher Education (PTMA) has been around since the middle of the last century. Now the number of PTMAs throughout Indonesia has experienced significant developments both quantitatively and qualitatively. The number of PTMAs, both organized by Muhammadiyah and Aisyiyah, has now reached 166 with details: 55 universities, 89 high schools, 9 academies, 8 institutes, and 5 polytechnics. The study programs were managed under 166 PTMAs with 1,720 departments, involving 589,421 students and 17,729 lecturers (including 112 professors).[2]

With a large number of PTMAs and the involvement of humongous human resources, Muhammadiyah does not only organize higher education just to get a lot of students, be able to build magnificent buildings, can technically and formally meet the demands of accreditation and ranking. Instead, PTMA has special characteristics in terms of implementing the higher education's tasks. In common tertiary institutions, three tasks are obliged to carry out, known as *tri dharma* of higher education, including education/teaching, research, and community service. Meanwhile, PTMA applied the

catur dharma of college, where the fourth *dharma* is the development of Al-Islam and Muhammadiyah (AIK). The fourth *dharma* is a logical consequence of Muhammadiyah's identity as emphasized in its Articles of Association as the Islamic movement of *da'wah* of *amar makruf nahi mungkar* and *tajdid,* originated from the Al-Quran and As-Sunnah.[3] Therefore, the essence of Muhammadiyah's educational philosophy related to the development of science, technology, and arts (IPTEKS) emphasized.

Science and technology are the results of rational thinking holistically and comprehensively on the reality of the universe (*kauniah* verses) and on revelation and sunnah (*kauliah* verses), *which is an integral unit* through continuous research and development activities for human glory in a sustainable life.[4]

The educational philosophy above, when linked to the *dharma* of the two universities (namely research assignments), clearly shows an integrative concept of developing science, in which the reflection on the verses of the *kauniah* and the verses of the lecture is an integral whole. This philosophy shows firmly that Muhammadiyah educational institutions, especially PTMA, are not just consumers of knowledge developed by others but must play a role in its development efforts on the basis of views, philosophies, values, and cultural traditions that are suited with or owned by Muhammadiyah. Therefore, of course, PTMA personnel must pay attention to this problem seriously and strive to build an integrated philosophy of scientific development in PTMA. Afterward, the following discussion focused on exploring ideas on the issue. Through historical, philosophical, and integrative approaches, the author tries to answer the following questions: Why is AIK integration and science development in PTMA necessary, and how to build a philosophy of science development based on AIK values.

THE DEFINITION OF AIK

AIK is loosely defined as the entire teachings of Islam, including faith, morals, worship, and *muamalat* sourced from the Al-Quran and Sunnah as understood by Muhammadiyah and set forth in the various enterprises in the society. In the broad sense, AIK can be divided into three dimensions, as explained in the previous study.

First, AIK's role is as a learning material taught to students programmatically. AIK within formal learning is through AIK courses given to students in accordance with the curriculum and syllabi. In another channel, AIK is also

taught through coaching and education of students outside of the class-room, for example, through the campus mosque, Islamic study, al-Quran recital training, or through the student activity unit.

Second is AIK as a value, which is a frame of reference for the behavior of campus residents derived from the principles of faith, morals, worship, and worldly *muamalat* as understood by Muhammadiyah. AIK as a frame of reference for this behavior includes both practical daily behavior on campus, including the behavior of managing the relevant charity business itself as well as behavior outside the campus as well as academic behavior. With regard to AIK as a frame of reference for practical behavior, it is hoped that every PTMA and in real terms there are those who already have an Islamic life guideline for campus residents which is socialized to all campus residents, such as educators, educational staff, and students. AIK as a frame of reference in academic life is related to the first *dharma* (education/teaching) and the second *dharma* (research/development of knowledge). In relation to the principles of education/teaching, it is hoped that all teaching staff for courses other than AIK courses can contribute to the education/teaching process that they run with the AIK spirit as a value. Related to AIK as a value (framework of reference for behavior) in the implementation of the second *dharma*, research in the context of developing science and technology, there is a need to seek a philosophical basis for the development of alternative science in accordance with the views, beliefs, philosophies and cultural traditions in the organization's environment. Thus, the above phenomena are the focus of the paper.

Third, AIK is one of the assets for implementing the third *dharma*, the community service. Each tertiary institution carries out community service by utilizing the knowledge and technology it controls to build its society towards a better direction. However, PTMA, apart from utilizing the existing knowledge and technology, also utilizes its spiritual capital in the form of AIK values to carry out community service.[5]

WHY CONSTRUCTING AIK-BASED PHILOSOPHY FOR SCIENTIFIC ADVANCEMENT IS NECESSARY

There are two reasons why PTMA needs to build a distinctive scientific development philosophy (AIK-based), which are internal and external reasons. Internal reasons are from within the Muhammadiyah environment in particular and within Islam in general. In contrast, external reasons are related to the development of modern science.

Internal reasons within the Muhammadiyah environment are the educational ideals of Ahmad Dahlan, the founder of Muhammadiyah, with an integrative mind. Through the establishment of Muhammadiyah, Dahlan integrated the Western education system, which tended to be secular, so that it gave birth to intellectuals who did not care about religion with traditional Islamic education, which only taught traditional religious lessons. This integrative thought continues to animate Muhammadiyah education. Almost a century later, Muhammadiyah education experts formulated Muhammadiyah educational philosophy formulated in the One Century Congress (2010) in Jogjakarta, especially related to the development of science and technology. Previously, the essence of Muhammadiyah's educational philosophy has been cited, which, especially in the development of science and technology, combines the principles of faith and science. Furthermore, in this philosophy, it is also emphasized that,

Mastery of science and technology is the first step in the growth of spiritual awareness so that rational thinking is the beginning of divine spiritual awareness. The devotion of worship to Allah includes worship which is summarized in the pillars of Islam, research and development of science and technology, a sustainable living environment in a civilized, just and prosperous life, and liberation of everyone from suffering due to ignorance and poverty.[6]

This formulation provides a clear direction for the second principle in PTMA's duties in developing science and technology in line with the spiritual provisions possessed by Muhammadiyah in the values of AIK. The formulation of integration of AIK and Science and Technology in Muhammadiyah educational philosophy is, of course, not just decorating the organization's official documents. This formulation clearly aims to provide a framework for implementation in the educational process at Muhammadiyah educational institutions, which in this case, in accordance with the focus of this paper, at PTMA. Who is responsible for developing and lowering this educational philosophy to become the foundation of the PTMA scientific development philosophy, of course, is none other than the PTMA academic person itself, in addition to Muhammadiyah academics outside PTMA in general.

The concept of integrating AIK and Science and Technology is, of course, in line with Islamic teachings in general because Muhammadiyah's identity itself as a da'wah movement *amar makruf nahi mungkar* originated from Al-Quran and Sunnah of the Prophet Muhammad and is based on Islam. It is

undeniable that Islamic teachings emphasize the importance of harmonizing knowledge with faith as a high virtue in human life and civilization. In the Al-Quran, it is reiterated that Allah's respect for the elevation of the level of believers and knowledge (Q 58: 11). On the other hand, the Holy Prophet made the law demand and develop knowledge as something mandatory in syar»i (Narrated by Ibn Mâjah and validated by al-Albânî). He also made the activity of demanding and developing knowledge as a path to heaven (HR at-Tirmiŷî and am-labarânî.[7] Historically these theological impulses have aroused the preoccupation of early Muslims with the development of science which made Islamic civilization in the past a beacon of world civilization. Muslims in the past made a penchant for the development of this knowledge as an ethos that energized their civilization. This can be seen in a number of slogans that are sometimes used as hadiths, such as "Demand knowledge even if it comes to China because studying is obligatory for Muslims."[8] This statement and other similar statements, despite the status of *dhaif* hadith, actually represent and reflect the Muslim ethos that animated the lives of Muslims in the past, who were later attributed to the Prophet.[9] The development of knowledge in early Islam was also a factor in the acceleration of the spread of Islam to various parts of the world at that time. On the other hand, when the development of the scientific study of the Muslim community retreated, Islamic civilization also experienced ups and downs like in the last centuries.

The thing to note from the history of Islam is that, although faith and science in Islamic doctrine are compatible and mutually supportive, in historical reality, there is often friction between the two, although not to the level of persecution and inquisition of scientists as has happened in Europe history. Some scientists in Europe were persecuted because the scientific views were contrary to the religious doctrines that were considered standard at that time. This happened, for example, Giordano Bruno (d.1600), who was convicted and executed on the gallows in Rome in 1600.

In the history of Islam, the friction of science and faith, although not to the point of bloody conflicts, still exists in a softer form as exemplified by the case of *Tahâfut al-Falâsifah* (Incoherence of the Philosophers) written by al-Gazzâlî (d. 505/1111). In this work, he stated that the Muslim philosophers who represented scientists (at that time, philosophy had not been separated from science) were *kafirs* because of their views: (1) nature is *kadim* (has no beginning), (2) Allah only knows global things and do not know the details, and (3) the philosophers deny bodily resurrection in the afterlife.[10] Ibn Rushd

(d. 595/1198) responded to al-Gazzâlî's heavy accusation that the philoso-
phers (scientists) disbelieved because of the above three views by writing
Tahâfut at-Tahâfut (The incoherence of *Tahâfut al-Falâsifah)*.[11] Even Ibn Rushd
also wrote another book entitled *Facl al-Maqâl wa Taqrîr Mâ Baina al-asy-*
Syarî'ah wa al-$ikmah min al-Itticâl ('description of the relationship between
religion and philosophy') in which he explains the interrelations and linkages
of philosophy (read: science) with religion (faith). The essence of Ibn Rushd's
view in this book is that there is no contradiction between religion and phi-
losophy (science) because the latter is an investigation of nature in a rational
manner that can increase the meaning of the Creator. On the other hand,
religion orders an investigation of nature (*kauniah* verses) using the rational
method (*burhani*).[12] It should be noted that Ibn Rushd was fortunate in that
he combined religion education and scientific education. He is not only a
scientist, but at the same time also a *fakih* who wrote the famous *fiqh* book
Bidâyat al-Mujtahid wa Nihâyat al-Muqtacid,[13] and *a-arûrî fî Ucul al-Fiqh*.[14]

The debate between al-Gazzâlî and the philosophers as cited above in
which al-Gazzâlî judged them as kafir shows the friction between religion
and science on the plains of reality in Islamic history. This fact is the reason
for the need for a philosophy of scientific development that maintains com-
patibility between the principles of faith and science, philosophy of science
based on the integration of AIK and Science and Technology.

External reasons are reasons related to the development of science itself.
Based on modernism, which carries out differentiation (separation) and
autonomization (independence) in which social, economic, and political life
is separated from religion, science also experiences the same thing. Each of
them stands alone, apart from each other, which is called objective secular-
ization. The objective secularization that occurs at the socio-structural level
when it enters consciousness (subjective secularization) will lead to secular-
ism in societal ideology and scientific atheism in science. Thus, we need
dedifferentiaton and deautonomization.[15]

Scientists themselves tend not to believe in God. French S. Collins men-
tions that in 1916 researchers conducted a survey of biologists, physicists,
and mathematicians about whether they believed in a God who communi-
cates to humans and to whom prayers are expected to come. The results
show that only 40% of respondents answered affirmatively (belief in God).
The same survey was repeated in 1997, and it turned out that there was no
change in the attitude of the scientists on this matter and the survey results

were more or less the same.[16]

The modern science that applies today is based on the main paradigm of "secular" scholarship from the West which is based on materialism. The consequence of the understanding of materialism for scientific ontology is that only the world that can be sensed becomes the object of knowledge, and only through the senses is it possible to make knowledge claims about the concrete world. Therefore, in a scientific paradigm like this, knowledge and investigation are limited to the world which can be known through the senses, and thus only statements about the concrete world are meaningful.[17] Immanuel Kant (1724-1804), although acknowledging the importance of religion as a postulate of moral rules, emphasized that religion is another area outside the scientific zone. According to Kant, the area of science is a perceptual world in which it is highly competent, and the laws are universal.[18] A further consequence of this understanding is the exclusion of religion from the zone of scientific activity by arguing that religion is a metaphysical area where reason cannot be used. Religion is a realm of belief in which religion and reasoning can often repel each other.[19] Modern science developed from the 17th century in Europe and spread throughout the world until now and interprets nature as nothing more than a tool governed by the mechanisms of Ansich's law of cause and effect, and there is nothing behind it all but of the centrality of the human role. These are among the reasons why it is necessary to develop a philosophy of scientific development that can bridge and avoid the inconsistencies of religious and scientific views.

REDISCOVERING INTEGRATIVE SCIENTIFIC EPISTEMOLOGY

Nidhal Guessoum raised the question, "Could an Islamic science be developed?" This question is the title of Chapter 4 in his work *Islam and Modern Science*.[20] In the spirit of an affirmative answer to that question, a number of Muslim thinkers tried to make academic efforts to realize this belief, and Nidhal Guessoum discussed the aforementioned views.

If the question is formulated from the perspective of Muhammadiyah's educational philosophy, the question reads, "Is it possible to develop an integrative scientific epistemology?" When referring to the word of Allah in Q 58: 11 that Allah elevates the position of believers and knowledgeable people to several degrees, we can make an affirmative answer hypothesis. This means that the question can be answered as possible. This is the belief of the majority, if not all, of Muslim thinkers. Even non-Muslim scientists also believe that

religion and science are not mutually exclusive. An American scientist who has served as Head of the International Human Genome Project, Francis S. Collins, who started his scientific career as an agnostic, then turned into an atheist, eventually returned to being a devout believer in God. He stated that faith in God completely can be a rational choice and that between the principles of faith and science have a complementary relationship."[21]

Two steps can be taken to build an integrative scientific epistemology, through objective and subjective approaches.

1. Objective Approach

Approach through an objective path means to build scientific constructions combining knowledge and values with factual and metaphysical understanding. A number of models in this pathway have been put forward by some experts, such as the Anas az-Zarqâ and Louay Safi's model.[22]

The integration of religion into scientific construction can be carried out through four domains, namely the realm of paradigm, the realm of theory, the realm of methods, and the realm of applicative. Science, in general, has a paradigm, basic assumptions that are not tested empirically but are taken for granted in science. The materialistic paradigm of modern science postulates positivism in which science works only in areas of the concrete world that are within reach of human sensory experience. Therefore legal knowledge is knowledge of the concrete, perceptual world. Therefore, religion must be excluded from the zone of scientific activity because it is an area of belief that cannot be ascertained by reason. Even the latter can reject each other with religion. On the other hand, the faith paradigm states that the principles of faith and scientific principles do not contradict each other but can complement each other. The consequence of this view is that knowledge is not limited to knowledge of the concrete perceptual realm which is interpreted based on reason or Ansich's sensory experience but also includes knowledge interpreted based on the sources of revelation. A person who does not believe in the existence of God and prophethood will see the concept of repentance (in the history of the Prophet) as a mere political phenomenon in which those who initially opposed the Prophet's political authority then returned to the bosom of the motherland and accepted the political authority of the Prophet Muhammad in Medina. On the other hand, those who believe in God and see the phenomenon of repentance as a religious concept in which the person concerned confesses his sins and returns to the way of God taught by His Prophet. Even in the history of the Holy Prophet, those who do not

believe in God are seen as a phenomenon of Ansich's social renewal, and there is nothing else behind it. For those who believe in God, the history of the Prophet is not only a phenomenon of social renewal like other social reforms but also as a form of divine intervention in human history.

It should be noted that the principles of religion (faith) that are offered as the building blocks of the scientific paradigm are not all fixed costs. Perhaps core principles such as belief in Allah, His oneness, and that He is the Creator are indeed non-negotiable basic principles. But understanding these principles in the scientific paradigm can be contextualized.

The theoretical orientation is the realm of science in which the contribution of religion can be considered. Maybe various definitions are given to put a theory back on. Still, at least it is a set of systematically arranged concepts and propositions that can be used to explain a phenomenon. Universal statements of revelation can contribute to the formulation of theories together with materials derived from the empirical world.[23] A theory will survive when it is able to answer the falsification addressed to it and must be rejected if it is not confirmed by the research that tested it. Muslim thinkers try to build theories according to their respective fields of study by utilizing statements in Islam that are considered universal. For example, Islamic economists try to formulate theories in Islamic economics, for example, the theory of consumer behavior.

Because of its more technical and procedural nature, the method is the domain of knowledge that may be at least in touch with value preferences. In other words, the method is the part of the most objective science. The probability that value enters the method is not in the technical construction of the method but rather in the theoretical direction that underlies the selection and use of a particular method.

The application of science can be seen as a domain in the construction of knowledge that may be in contact with values (religion, faith) more broadly because the application of science is directly related to human life. The application of science is an axiological area of science. Hence the value preferences of religion may greatly affect it. The medical science to predict the serious consequences of a patient's acute illness that is less likely to recover cannot in itself be applied to the decision that the patient can be euthanized. Also, other considerations from ethics, philosophy, and religion are necessary.

2. Subjective Approach

In contrast to the increasingly criticized positivism view, which sees science as a replica of the external nature as it really is, the postmodern view sees science as a human activity in which its position as the knowing subject is central. Our knowledge of empirical reality is not a direct and empirical perception of the environment but is based on a theory that describes reality.[24] Knowledge develops in a historical and cultural context which is why it is limited by the limitations of the technical and conceptual tools and language facilities provided by its environment and used by the subject of the knowledge agent. Hence in this view, knowledge is no longer a certainty, and knowledge is fallible. Knowledge is the best explanation that can be reached and which we believe are the most worthy of being used as a basis for action.[25]

The creative imagination of scientists is also very important in the process of developing science, especially in the creation of new findings, which encourages them to connect existing materials of knowledge that may not actually be related.[26] In the social and humanity sciences, the role of humans as agents of knowledge is getting more significant. To be able to create the development of science that is compatible with religious beliefs, of course, it requires a scientist's soul who has sufficient empathy and understanding of the principles of faith related to certain knowledge. So the integration of science is not only how to place the principles of faith in a certain scientific structure, but also the problem of how a scientist as a subject of knowledge can provide a space within himself where he is able to develop a spirit of empathy and an adequate understanding of certain principles of faith. People will act according to what he thinks. A scientist armed with faith will produce a knowledge model that maintains the compatibility of faith and knowledge production.

CONCLUSION

Based on the above discussions, the following points are necessary to be noted:

1. From a historical perspective, the education system and scientific development in Islam is an integrative system. Ibn Rushd (d. 595/1198) is one of the pioneers of the integration of religion and science in Islamic history. Consequently, the legacy was carried on by Ahmad Dahlan (d. 1923) when he founded Muhammadiyah, where the education system he found

combines religion and science.

2. There are two steps to reconstruct a philosophy of scientific development in the PTMA environment through objective and subjective approaches.

ENDNOTES

1 Muhammadiyah's educational philosophy was formulated in the Decree of the 46th Muhammadiyah Congress in Jogjakarta in 2010. See "Tanfidz Decision of the Muhammadiyah First Century Congress (46th Muhammadiyah Congress)," *Muhammadiyah Official News*, No. 1/2010-2015 (Shawwal 1431 H / September 2010 AD), p. 220-221.

2 November 2019 data. Source: Report of the PP Muhammadiyah Dikti Council on the PP Muhammadiyah Coordination Meeting with the Assembly, Institutions, Bureau on December 14-15, 2019 in Jakarta

3 Article 4 (1) of Muhammadiyah's Articles of Association affirms, "Muhammadiyah is the Islamic Movement of Da'wah *Amar Makruf Nahi Mungkar* based on the Al-Quran and As-Sunnah."

4 "Tanfidz," p. 220.

5 Syamsul Anwar, "Prolog: Epistemologi Qurani," dalam Mukhlis Rahmanto dan Naufal Ahmad Rijalul Alam, ed., *Epistemologi Qur'ani dan Ikhtiar Pengembangan Ilmu Pengetahuan* (Yogyakarta: LPPI UMY, 2017), p. 1-2.

6 "Tanfidz," p. 220-221.

7 At-Tirmiýî, *al-Jâmi 'al-Kabîr (Sunan at-Tirmiýî)*, edited by Syu'aib al-Arna'ûm and Haiaam' Abd al-Gafur (Damascus: Dâr ar-Risâlah al-'Âlamiyyah, 1430/2009), IV: 590, hadith nonor 2838; am-labarânî, *al-Mu'jam al-Kabîr*, edited by $amdî 'Abd al-Majîd as-Salafî (Cairo: Maktabat Ibn Taimiyyah, 1415/1994), VIII: 79, hadith number 7388.

8 Al-Khamîb al-Bagdâdî, ar-Ri%lah fî lalab al-$adîa, edited by Nûruddîn 'Itr (Damascus: Damascus University, 1395/1975), p. 72-76. This hadith has many lines of transmission, but all of them are *dhaif* and even some of them are accused of being liars, and denying *hasan* degree. However, the end of this hadith is *shahih*.

9 Syamsul Anwar, *Islam, Ilmu dan Kebudayaan* (Jogjakarta: UAD Press, 2018), p. 22-23.

10 Al-Gazzâlî, *Tahâfut al-Falâsifah*, diedit oleh Sulaimân Dunyâ (Kairo: Dâr al-Ma'ârif, t.t.), p. 307-309.

11 Ibn Rusyd, *Tahâfut at-Tahâfut*, diedit oleh Sulaimân Dunyâ (Kairo: Dâr al-Ma'ârif, 1964).

12 Ibn Rusyd, *Fac al-Maqâl wa Taqrîr fî Mâ Baina asy-Syarî'ah wa al-$ikmah min al-Itticâl*, edited by A. Nacrî Nâdir (Beirut: Dâr al-Masyriq, 1968), p. 27-29.

13 Ibn Rusyd, *Bidâyat al-Mujtahid wa Nihayat al-Muqtacid*, 6 jilid, diedit oleh 'Alî Mu%ammad Mu'awwa dan 'Âdil Mu%ammad 'Abd al-Maujûd (Beirut: Dâr al-Kutub al-'Ilmiyyah, 1416/1996).

14 Ibn Rusyd, *a-arûrî fî Ucul al-Fiqh*, diedit oleh Jamâluddîn al-'Alawî (Beirut: Dâr

al-Garb al-Islâmî, 1994 M).

[15] Kuntowijoyo, *Islam sebagaI Ilmu: Epistemologi, Metodologi dan Etika* (Jakarta: Teraju, 2004), p. 58-60.

[16] Collins, *The Language of God* (New York: Free Press, 2000), p. 4.

[17] Arif, "The Islamization of Knowledge and Some Methodological Issues in Paradigm Building: The General Case of Social Science with a Special Focus on Economics," *AJISS*, Vol. 4, No. 1 (1987), p. 53-54; Zakâriyâ Bashîr, "Towards an Islamic Theory of Knowledge, Part 1," *Arabica: The Islamic World Review*, Maret 1986 / Jamâdâ II 1406, p. 74-78.

[18] Barbour, *Isu dalam Sains dan Agama*, translated by Darmayanti dan Ridwan (Jogjakarta: Universitas Islam Megeri Sunan Kalijaga, 2006), p. 102 and 106.

[19] Zakâriyâ Bashîr, "Towards," p. 74-5.

[20] Guessoum, *Islam dan Sains Modern*, translated by Maufur (Bandung: PT Mizan Pustaka, 2014), p.186.

[21] Collins, *The Language of God*, p. 3.

[22] Regarding the model proposed by Anas az-Zarqâ, see his writing "Ta%qîq Islâmiyyat 'Ilm Iqticâd: al-Mafhûm wa al-Manhaj," in *Towards Islamization of Disciplines*, a collection of seminar papers (Herndon, Virginia: International Institute of Islamic Thought, 1989), h. 316-351; and Safi, *The Foundation of Knowledge* (Selangor Darul Ihsan: The International Islamic University Malaysia and The International Institute of Islamic Thought, 1996), chapter 8.

[23] Safi, *The Foundation of Knowledge* (Selangor Darul Ihsan: The International Islamic Univerity Malaysia dan The International Institute of Islamic Thought, 1996), p. 191.

[24] Ibid., h. 176.

[25] Polkingshorn, *Methodology*, p. 242.

[26] Barbour, *Isu*, p. 200.

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