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Overview of the Philosophy of Science on the Nature of Interdisciplinary Islamic Studies

Rizal Gani Kaharudin

Universitas Islam Negeri Sunan Kalijaga

rizalgani1@gmail.com

Ita Rodiah

Universitas Islam Negeri Sunan Kalijaga

ita.rodiah@uin-suka.ac.id

Mohd Shahril Bin Ahmad Razimi

Utara Malaysia University, Malaysia

shahril@uum.edu.my

Moh. Mukri

Universitas Islam Negeri Raden Intan Lampung

moh.mukri@radenintan.ac.id

Abstract: *Obtaining knowledge is the right of every human being to be able to bring a better and prosperous life. Humans as Muslims seek knowledge to be an important part and Islam also does not limit useful knowledge. To stay within the corridor of religiously useful knowledge such as Islamic Studies also requires a broad perspective through cross-study reviews. Construction of Islamic Studies can discuss many issues of life in terms of other scientific studies that support or can be referred to as Interdisciplinary Islamic Studies. This article is intended to find out the nature of Interdisciplinary Islamic Studies in terms of the philosophy of science. The study method used is through literature study, data collection based on literature such as books and journals. The results of the study reveal that Interdisciplinary Islamic Studies provides space for humans to overcome the complexities of existing human life problems, because these problems are not*

only solved based on one field of study. Interdisciplinary Islamic Studies builds a harmonious relationship between Islamic Studies and Science. The relationship between the two needs to be done to contribute to the good of both of them, so that this study can produce comprehensive and moral knowledge.

Keywords: *Philosophy of Science, Science, Interdisciplinary Islamic Studies.*

A. Introduction

The modern era brought many changes to human civilization; science from the West produced many innovations to make human do the activities easily. However, humans also cannot avoid the problems that arise and require in-depth study in solving these problems. Paying attention to this phenomenon reflects the reconstruction of the study of science to always be dynamic in examining the complexity of the problems that occur, one of which is Islamic Studies. Even in his book, Fazlur Rahman emphasizes that the transformation of the Islamic intellectual tradition is very important to be able to adapt to the needs of contemporary society. Then the history of secularism also plays a role, the reconstruction of Islamic studies as proof that through the teachings of Islam in the Qur'an can contribute to achieving problem solving of a human problem.¹

The existence of this reconstruction created deeper Islamic Studies through Interdisciplinary Islamic Studies. The birth of this renewal leads scholars to continue to advance science dynamically and avoid the negative influence of western science.² The study can reach cross-disciplinary studies in collaboration with an Islamic perspective. This collaboration brings Islamic teachings to contribute to the achievement of Problem Solving scientifically. However, because this reconstruction is still novel, a deeper study is needed to find out the nature of Interdisciplinary Islamic Studies from the

¹ Fazalur Rahman, *Islam and Modernity Transformation of an Intellectual Tradition* (Chicago: University of Chicago Press, 1984), <https://en.ids1lib.vip/book/5970857/263192>.

² Sakholid Nasution, *Studi Islam Interdisipliner (Memotret Ilmu Pengetahuan Dan Sains Inklusif Dalam Islam)*, 1st edition (Malang: CV. Bintang Serjahtera Press, 2015), <https://id1lib.org/dl/6161539/ee2c06>.

Overview of the Philosophy of Science on the Nature of Interdisciplinary Islamic Studies

perspective of the philosophy of science. It is hoped that this review can fundamentally strengthen the application of Interdisciplinary Islamic Studies in scientific studies.

Philosophy of science can be interpreted as a way to know the nature of a science,³ through this field of philosophy; it can help to uncover assumptions or doubts about the newness of a field of science.⁴ The involvement of the philosophy of science in understanding a field of science also has an urgency to be able to understand science from an empirical and rational point of view.⁵ As has been done by previous philosophers, they have a different point of view because they see the creation of a phenomenon based on their knowledge. Some of the most prominent philosophers like Plato⁶, Aristoteles⁷, and Kant⁸, the differences they have do not stand alone but are used as a variety of interconnected thoughts.⁹

Referring to the various thoughts of these philosophers, it can be obtained a truth about the ideas that are owned which are seen not only based on self-assumptions but also need to be studied using

³ Ahmad Taufik Nasution, *Filsafat Ilmu: Hakikat Mencari Pengetahuan* (Yogyakarta: Deepublish, 2016); A. Susanto, *Filsafat Ilmu: Suatu Kajian dalam Dimensi Ontologis, Epistemologis, dan Aksiologis* (Jakarta: Bumi Aksara, 2021); Amzah Selle, "Hakekat Ilmu Pengetahuan," *Istiqlal: Jurnal Pendidikan dan Pemikiran Islam* 3, No. 1 (2015), <http://jurnal.umpar.ac.id/index.php/istiqlal/article/view/249>.

⁴ Jena Yeremias, *Filsafat Ilmu: Kajian Filosofis Atas Sejarah Dan Metodologi Ilmu Pengetahuan* (Yogyakarta: Deepublish, 2015), h. 13.

⁵ Yeremias Jena, *Filsafat Ilmu: Kajian Filosofis Atas Sejarah Dan Metodologi Ilmu Pengetahuan*, 2015, h. 12.

⁶ According to Plato, philosophy is an attempt to achieve a knowledge-based on the original truth. Nasution, *Filsafat Ilmu*; See also Alboin Parluhutan, "Objek Formal & Material Filsafat Ilmu Serta Implikasinya Dalam Pendidikan," *Jurnal Pionir* 6, No. 2 (2020), <https://doi.org/10.36294/pionir.v7i3.2362>.

⁷ According to Aristotle, philosophy is a way of knowing the truth of knowledge based on metaphysics, logic, rhetoric, ethics, and aesthetics. Benny Kurniawan, "Studi Islam Dengan Pendekatan Filosofis," *Saintifika Islamica: Jurnal Kajian Keislaman* 2, No. 02 (June 16, 2017): 49–60, <http://jurnal.uinbanten.ac.id/index.php/saintifikaislamica/article/view/293>.

⁸ According to Immanuel Kant, philosophy is a way of finding truth of knowledge by considering many aspects. M. Taufiq Rahman, *Filsafat Ilmu Pengetahuan* (Prodi S2 Studi Agama-Agama UIN Sunan Gunung Djati Bandung, 2020); See also Syaiful Dinata, "Epistemologi Kritisisme Immanuel Kant," *Kanz Philosophia A Journal for Islamic Philosophy and Mysticism* 7, No. 2 (December 31, 2021): h. 217, <https://doi.org/10.20871/kpjipm.v7i2.183>.

⁹ Stathis Psillos, "What Is General Philosophy of Science?," *Journal for General Philosophy of Science / Zeitschrift Für Allgemeine Wissenschaftstheorie* 43, No. 1 (2012): h. 93-103, <https://www.jstor.org/stable/23353752>.

comprehensive thinking and can be proven by various scientific studies.

On this basis, the existence of a philosophy of science is needed to help answering assumptions related to the presence of newness in a field of science, such as Interdisciplinary Islamic Studies. Back to the history of the development of Western philosophy, the findings of knowledge generated from the mind, humans have the right to determine their own view of life. This means that the truth of the findings produced is not based on religious doctrine, where religious teachings are the determinants of scientific truth. These differences in views lead to a dichotomy between western philosophical thought and religious teachings. Based on this dichotomy, then Muslims take a study between Islam and Science.¹⁰

Through Interdisciplinary Islamic Studies, Islam continues to support the development of science by paying attention to the rules in Islam. For example, the discovery of a cloning system, this finding can indeed be explained by scientific logic. However, if applied to humans, based on the teachings of Islam it is very contradictory (haram).¹¹ So from this explanation, it can be interpreted that Interdisciplinary Islamic Studies is an Islamic study that is carried out using various scientific perspectives.

This article is a study to find out the nature of Indisciplinary Islamic Studies from the perspective of the philosophy of science. To reveal this, the researcher used a descriptive qualitative approach and the data were obtained from a number of literatures, both journals and books. The discussion in this article is based on an analysis of the literature obtained. It is hoped that this article can also be a reflection of the development of Interdisciplinary Islamic Studies that can be implemented more broadly in the development of science.

¹⁰ Nasution, *Studi Islam Interdisipliner (Memotret Ilmu Pengetahuan Dan Sains Inklusif Dalam Islam)*, h. 2.

¹¹ Asiyah Nur, *'Hukum Melakukan Kloning Pada Manusia (Studi Perbandingan Fatwa Syeikh Yusuf Qaradhawi Dan Syeikh Muhammad Husein Fadhlullah)* (Banda Aceh, Aceh: Universitas Islam Negeri Ar-Raniry, 2016), h. 60, <https://repository.ar-raniry.ac.id/5903/1/Nur%20Asiyah.pdf>.

B. History and Development of Philosophy as the Basis for the Emergence of Interdisciplinary Islamic studies

Through history and the development of philosophy can provide an understanding of how to find the nature of science. This essence is to support interdisciplinary Islamic studies that discuss the concentration of complex thoughts. In addition, this understanding is also to find out how the contribution of Islamic philosophy figures to the problems of human life and became the basis for the emergence of Interdisciplinary Islamic Studies.

1. Greek Age

The Greek era was the beginning of the emergence of rational thoughts on a phenomenon that occurred. Previously, humans judged the truth based on animistic beliefs and dynamism (myths). Belief in myths shackles humans cannot have freedom of thought,¹² because the phenomenon is believed to come because of the will of the gods and nothing else. Based on this condition, there is an understanding that the position of gods and humans are separate things and do not have a causal relationship.

It is not blamed if the initial emergence of rational thought caused debate in the community, because the birth of rational thought caused a shift towards the truth of myth. Slowly these conditions changed the perspective of belief systems, where the birth of rational thinking changed the perception of the position of God towards humans. God is no longer considered separate (stand alone), but God is united with human life. Without compromising the religious system that is believed to be, rational abilities lead humans to develop their potential and community culture, so that the phenomena that occur can be known the truth through the human mind and thought.¹³ This period is widely known by experts as the age of natural philosophers (cosmocentric) because many figures who have philosophical thoughts about nature.¹⁴

¹² Reza A. A. Wattimena, *Untuk Semua Yang Beragama: Agama dalam Pelukan Filsafat, Politik, dan Spiritualitas* (Yogyakarta: PT Kanisius, 2020).

¹³ Suaedi, *Pengantar Filsafat Ilmu*, 1st edition (Bogor: IPB Press, 2015), h. 1.

¹⁴ Khaidir Anwar, "Sejarah dan Perkembangan Filsafat Ilmu," *Fiat Justisia: Jurnal Ilmu Hukum* 7, No. 2 (2013): h. 116, <https://doi.org/10.25041/fiatjustisia.v7no2.138>.

As for the figures who appeared early in this period, among them were Thales, Pythagoras, and Aristotle. Thales (525-545 BC), Thales is a human who has a high curiosity, therefore often observes many natural phenomenon that occur.¹⁵ For philosophers, Thales is known as the Father of Philosophy.¹⁶ He is the first human to have philosophical thought because of his ability to explain the truth of the origin of natural phenomena not based on myths but human rational thoughts.¹⁷

The next philosopher, Pythagoras (580-500 BC), Pythagoras's thoughts on nature were based on a very devoted mathematical approach.¹⁸ According to him, natural phenomena that occur can be associated with numbers, so that numbers are used as the main element to measure the natural reality that occurs. Pythagoras had a great contribution to the development of science, especially in the study of the exact sciences and natural sciences as well as his thoughts based on a mathematical approach.¹⁹

Other philosophical figures, Aristotle (384 - 322 BC) who had many contributions to the development of science in the Greek Age, the most prominent contribution was logical thinking.²⁰ Even today, his thinking is still used by academics in carrying out research

¹⁵ Dirk L. Coupric, *Heaven and Earth in Ancient Greek Cosmology: From Thales to Heraclides Ponticus* (New York: Springer Science & Business Media, 2011); See also D. V. (Dmitrii Vadimovich) Panchenko, "Thales and the Origin of Theoretical Reasoning," *Configurations* 1, No. 3 (1993): 387–414, <https://doi.org/10.1353/con.1993.0024>; See also Patricia F. O'Grady, *Thales of Miletus: The Beginnings of Western Science and Philosophy* (London: Routledge, 2016).

¹⁶ Paul Iversen and Daniel J. Lacks, "A Life of Its Own: The Tenuous Connection between Thales of Miletus and the Study of Electrostatic Charging," *Journal of Electrostatics* 70, No. 3 (June 1, 2012): 309–11, <https://doi.org/10.1016/j.elstat.2012.03.002>; See also Welhendri Azwar dan Muliono, *Filsafat Ilmu: Cara Mudah Memahami Filsafat Ilmu* (Jakarta: Prenada Media, 2021).

¹⁷ Ahmad Noviansah, "Pemikiran Filsafat Menurut Thales (Analisis Kritis Dalam Perspektif Filsafat Dan Agama)," *Zawiyah: Jurnal Pemikiran Islam* 6, No. 2 (December 28, 2020): h. 22, <https://doi.org/10.31332/zjpi.v6i2.1972>.

¹⁸ Phillip Sidney Horky, *Plato and Pythagoreanism* (California: Oxford University Press, 2013); See also K. R. Popper, "The Nature of Philosophical Problems and Their Roots in Science," *The British Journal for the Philosophy of Science* 3, No. 10 (August 1952): 124–56, <https://doi.org/10.1093/bjps/III.10.124>.

¹⁹ Suaedi, *Pengantar Filsafat Ilmu*, h. 30.

²⁰ Aloysius G. Dinora, *Aristoteles, Socrates & Plato: Biografi Filsuf Yunani Paling Berpengaruh* (Yogyakarta: Anak Hebat Indonesia, 2017); See also Philip Kreager, "Aristotle and Open Population Thinking," *Population and Development Review* 34, No. 4 (2008): 599–629, <https://doi.org/10.1111/j.1728-4457.2008.00243.x>.

Overview of the Philosophy of Science on the Nature of Interdisciplinary Islamic Studies

regarding to deductive and inductive ways of thinking. Aristotle's way of thinking is very helpful in drawing a conclusion (*sylogism*) on existing premises, for his contributions Aristotle is widely known as the father of logic.²¹

2. Medieval Times

During this period, philosophical figures were more focused on observing religion (theology) than observing natural activities. The number of philosophers who observe religion has become a hallmark of medieval thought with the term Theocentric. Religion in this period became the basis for solving problems that occurred and became a benchmark for truth. Precisely in the 6th century AD, many schools began to be established which made the development of philosophy increasingly rapid. The figures of Western philosophy in this period include Thomas Aquinas and Agustinus.²²

Thomas Aquinas (1125-1274 AD) was influenced by Aristotle's thinking because when he was studying he was under the guidance of the Great Albertus (an Aristotelian).²³ The famous thought in this century is "*Ancilla Theologiae*" or which means the science of religion.²⁴ The next figure is Augustine (354-430 AD). Augustine's interest in philosophy was influenced by the books he read: the work of Hortensius which contains praise and worship of philosophy. Many of the philosophical foundations that are owned take the pattern of Plato's thinking, where the value of truth lies in human memory which is innate from birth, humans also have ideas about God such as love and God is personal who created the universe.²⁵

²¹ Abdul Karim, "Sejarah Perkembangan Ilmu Pengetahuan," *FIKRAH* 2, No. 2 (December 6, 2014): h. 17, <https://doi.org/10.21043/fikrah.v2i2.563>.

²² Suaedi, *Pengantar Filsafat Ilmu*, h. 3.

²³ Nicholas Aroney, "Subsidiarity in the Writings of Aristotle and Aquinas," in *Global Perspectives on Subsidiarity*, ed. Michelle Evans and Augusto Zimmermann, Ius Gentium: Comparative Perspectives on Law and Justice (Dordrecht: Springer Netherlands, 2014), h. 93; See also Eonore Stump, *The Cambridge Companion to Aquinas* (Cambridge ; New York: Cambridge University Press, 1993), h. 38.

²⁴ Joseph S. O'Leary, "Phenomenology and Theology: Respecting the Boundaries," *Philosophy Today* 62, No. 1 (April 11, 2018): h. 99-117, <https://doi.org/10.5840/philtoday2018227202>; See also Karim, "Sejarah Perkembangan Ilmu Pengetahuan," h. 17-18.

²⁵ Anwar, "Sejarah Dan Perkembangan Filsafat Ilmu."

Entering the 7th century AD, the development of philosophy has reached the Eastern hemisphere; its expansion has a major influence on the development of science through the figures of Islamic philosophy. Then the fall of the Islamic kingdom in Granada in 1492 also influenced the political conditions of the West which began to enter the East.²⁶ Western politics had a major influence on the development of philosophy in Islamic scholars who had their own views on European philosophy. Many Islamic philosophers also think that Aristotle's thoughts are true, Plato and the Qur'an are also true.²⁷ So that a combination of Islam and philosophy emerged (Syncretism) which was the biggest contribution of thought to the development of science in Europe, especially in the fields of Theology and Nature.²⁸

The most prominent contributions of Islamic philosophical thought are fine arts, medicine, and mathematical algebraic calculations.²⁹ In addition to Western philosophical figures, there are also philosophical figures in Islamic circles or who are famous for the Islamic Scholastic period. Islamic Philosophy figures include Al-Kindi and Ibn Sina.³⁰

Al-Kindi is known as the "Arabic Philosopher" because of his Arab ancestry, this character has the style of thinking of Aristotle and Plato.³¹ According to al-Kindi, the goal of philosophical figures in theorizing is to seek the truth which is then followed up by human beings with deeds, the closer humans are to the truth, the closer the

²⁶ Muhammad Alfaridzi Matondang, "Peradaban Dan Pemikiran Islam Di Andalusia," *Tasyri' : Jurnal Tarbiyah-Syari'ah-Islamiah* 28, No. 02 (October 12, 2021): h. 56-73, <https://doi.org/10.52166/tasyri.v28i02.135>; See also Muh Dahlan, "Islam di Spanyol dan Sisilia," *Rihlah: Jurnal Sejarah dan Kebudayaan* 4, No. 1 (June 1, 2016), <https://doi.org/10.24252/rihlah.v4i1.2580>.

²⁷ Luluk Nur Faizah, "Filsafat Islam dan Hubungannya Dengan Filsafat Masehi, Yunani, Modern," *Al-Makrifat: Jurnal Kajian Islam* 2, No. 2 (December 27, 2017): h. 67-103.

²⁸ Suaedi, *Pengantar Filsafat Ilmu*, h. 3.

²⁹ Zainal Arifin and Moh Hasyim Afandi, "Reformasi Pendidikan Islam Dan Implikasinya Prespektif Pemikiran Pendidikan Filsuf Islam," *Jurnal Ats-Tsaqofi* 1, No. 2 (December 30, 2019): h. 1-26; See also Abdul Syukur al-Azizi, *Untold Islamic History* (Yogyakarta: Laksana, 2018).

³⁰ Suaedi, *Pengantar Filsafat Ilmu*, h. 31.

³¹ Muhammad Asrul Pattimahu Ma, "Filosof Islam Pertama (Al-Kindi)," *Konfrontasi: Jurnal Kultural, Ekonomi Dan Perubahan Sosial* 4, No. 1 (January 1, 2017): h. 1-9, <https://doi.org/10.33258/konfrontasi2.v6i1.28>; See also Tony Abboud, *Al Kindi: The Father of Arab Philosophy* (The Rosen Publishing Group, Inc, 2006).

Overview of the Philosophy of Science on the Nature of Interdisciplinary Islamic Studies

achievement of perfection is.³² To gain knowledge of the truth of something, Al-Kindi combines philosophical and religious doctrines (thoughts that combine Physics-Metaphysics and Science-Technology).³³ According to him, philosophy has an important role in religion, because reasoning is the highest gift to reveal the truth.³⁴

Another popular Muslim philosopher, namely Ibn Sina (980-1037 AD) who was famous for his ability in medicine or the field of medical.³⁵ The style of Ibn Sina's philosophical thought was influenced by Aristotle, especially regarding *Syllogism*. His philosophical teachings are a blend of logic, psychology, and metaphysics.³⁶ *The first* aspect, Logic is not meant to find new truths but as a tool to assist in using the truth that we already have so that there is no misuse of that truth.³⁷

The second aspect, psychology related to the human soul, where humans have the imagination to form perceptions of observations through the five senses they have, which allows humans to think abstractly associated with morality. *The third* aspect, Metaphysics, is related to the theory of emanationism or the Emanation of God. In addition, Ibn Sina contributed to the emergence of Modern philosophy; the resulting thoughts influenced the thoughts of Modern

³² Abu Bakar Madani, "Pemikiran Filsafat Al-Kindi," *Lentera* IXX, No. 2 (Desember 2015): h. 110, <https://doi.org/10.21093/lj.v17i2.433>.

³³ Madani, h. 106-107; See also Sulhatul Habibah, "filsafat ketuhanan al-Kindi," *DAR EL-ILMI: Jurnal Studi Keagamaan, Pendidikan Dan Humaniora* 7, No. 1 (April 8, 2020): h. 19-34, <http://e-jurnal.unisda.ac.id/index.php/dar/article/view/2025>.

³⁴ Kevin Staley, "Al-Kindi on Creation: Aristotle's Challenge to Islam," *Journal of the History of Ideas* 50, No. 3 (1989): h. 355-370, <https://doi.org/10.2307/2709566>; See also Sholihudin Al-Ayyubi, "Konsep Kebenaran Dalam Perspektif Al-Qur'an," *Fikroh: Jurnal Pemikiran Dan Pendidikan Islam* 11, No. 1 (2018): h. 54-78, <https://doi.org/10.37812/fikroh.v11i1.34>.

³⁵ Syaiful Hakim, "Pemikiran dan Penemuan Ilmuwan Muslim," *Al Hikmah: Jurnal Studi Keislaman* 3, No. 2 (September 1, 2013): h. 4, <https://doi.org/10.36835/hjsk.v3i2.373>; Ahmad Ridlo Shohibul Ulum, *Ibnu Sina: Sarjana, Pujangga, dan Filsuf Besar Dunia Biografi Singkat 980-1037 M* (Yogyakarta: Anak Hebat Indonesia, 2018), h. 41.

³⁶ Herwansyah Herwansyah, "Pemikiran Filsafat Ibnu Sina (Filsafat Emanasi, Jiwa Dan Al-Wujud)," *EL-FIKR: Jurnal Aqidah Dan Filsafat Islam* 1, No. 1 (October 19, 2017): h. 45-56; Amber Haque, "Psychology from Islamic Perspective: Contributions of Early Muslim Scholars and Challenges to Contemporary Muslim Psychologists," *Journal of Religion and Health* 43, No. 4 (December 1, 2004): h. 357-377, <https://doi.org/10.1007/s10943-004-4302-z>.

³⁷ Ahmad Zainul Hamdi, *Tujuh Filsuf Muslim: Pembuka Pintu Gerbang Filsafat Barat Modern* (Yogyakarta: Pustaka Pesantren, 2004), h. 93.

philosophical figures such as Descartes, Kant, and Bergson. The figures of Islamic philosophy are not only two figures as described, there are other figures such as Ar-Razi, Al-Farabi, Ibn Al-Ghazali, Ibn Tufayl, and Ibn Rushd whose ideas can be studied as examples.³⁸

Before entering the Modern Age period, there was a transition period with the emergence of the Renaissance and Humanism in the 15th-16th centuries AD. The development of a theocentric philosophy affected the condition of Western philosophy, thoughts that were limited by orthodox and traditional religion caused freedom of thought to be shackled. The presence of the renaissance is intended to be released from these shackles to gain independence in free thinking for the advancement of knowledge. The influence of Muslims in this period also had a hand in the establishment of this period thanks to the success of the Muslims in controlling eastern Rome with the conquest of the Spanish and Portuguese, the event is widely known as the Fall of Constantinople.³⁹

Thought in this transitional period emphasizes the ability of human beings who have the highest value and dignity or is known as the philosophical thought of Humanism. Humans can freely think rationally of their own volition through their abilities without being influenced by existing revelations or traditions, so that the development of knowledge will be faster. Although shifting theocentric philosophy, the teachings of God's revelation still exist because of the relationship between natural law and human character. However, through rational and empirical thinking, God's teachings are not accepted for granted, but are first examined by the human mind. Human thinking is not only fixed on one particular thing, but also it is hoped that scientific, social, and religious thoughts can be combined into one mindset to achieve happiness in life in this world and the hereafter. The transition period taught a fusion of the Greek and Middle Ages to a more complex modern philosophy.⁴⁰

³⁸ Hamdi, h. 93.

³⁹ Saifullah Saifullah, "Renaissance Dan Humanisme Sebagai Jembatan Lahirnya Filsafat Modern," *Jurnal Ushuluddin* 22, No. 2 (December 1, 2014): h. 135, <https://doi.org/10.24014/jush.v22i2.731>.

⁴⁰ Saifullah, h. 136.

Overview of the Philosophy of Science on the Nature of Interdisciplinary Islamic Studies

3. Modern Ages

Philosophical thought in this century again uses the human mind to know a truth as in the Greek Age, not absolute because of orthodox religious doctrines and traditional beliefs. However, the benchmark for the development of this period is still based on the ideas of the *renaissance* and *humanism*. The progress of science in this period was increasingly rapid, especially regarding technology and the reality of social, economic, political, and cultural phenomena that occurred due to secularization in all fields. As for this period, the flow of rationalism and empiricism became a characteristic that was often debated by philosophical figures.

The school of rationalism has the characteristic of thinking by prioritizing the ability of the human mind to help explaining and solving all human problems; therefore rationalists place great trust in the mind.⁴¹ The first figure of this school is Rene Descartes (1595-1650) as the father of modern philosophy⁴² who gives the view that the basis for finding the truth is to use reason, not religion or anything else. The mindset of this period was influenced by Descartes who made humans as the center of subjectivity (humans create their own world). Descartes also argued that humans must have doubts about anything in order to gain clarity or firmness.⁴³

The next school is Empiricism; this school of thought puts forward human experience rather than reason. Although this school is contrary to Rationalism and causes debate between philosophers, this

⁴¹ Fauzan Adhim, *Filsafat Islam Sebuah Wacana Kefilsafatan Klasik Hingga Kontemporer* (Malang: Literasi Nusantara, 2018), h. 54; See also Abu Yasid, "Paradigma Tradisionalisme dan Rasionalisme Hukum dalam Perspektif Filsafat Ilmu," *Jurnal Hukum IUS QUIA IUSTUM* 17, No. 4 (October 18, 2010): h. 589-614, <https://doi.org/10.20885/iustum.vol17.iss4.art5>.

⁴² Abidemi Idowu Otaiku, "Did René Descartes Have Exploding Head Syndrome?," *Journal of Clinical Sleep Medicine* 14, No. 04 (2018): h. 675-678, <https://doi.org/10.5664/jcsm.7068>; See also Jaw Chung-Chong, "Myth Of European Dark Age (5th-15th Century) Scientific Knowledge Stagnation Critical Studies Of Scientific Idea Interactions Between The Late Medieval Theologian And Early Modern Philosopher," *International Journal of Theology, Philosophy and Science* 4, No. 8 (2021): h. 59-63, <https://www.ceeol.com/search/article-detail?id=961554>.

⁴³ Musakkir Musakkir, "Filsafat Modern dan Perkembangannya (Renaissance: Rasionalisme dan Emperisme)," *TAJDID: Jurnal Pemikiran Keislaman Dan Kemanusiaan* 5, No. 1 (April 30, 2021): h. 6, <https://ejournal.iaimbima.ac.id/index.php/tajdid/article/view/626>.

school of thought does not defeat each other.⁴⁴ The debate that occurs is an attempt to get a methodology to get a truth. For the contribution of the figures who debated the two schools above, making this period as the beginning of the emergence of research methods based on rational and empirical aspects that are still used today.⁴⁵

4. Contemporary Age

Contemporary Age began to emerge in the XIX Century and still persists to this day,⁴⁶ Its emergence is motivated by changes in social and cultural conditions that are very large in human life. This condition gave rise to criticism from the philosopher Friedrich Nietzsche (1844-1900) against previous Western philosophical thought which was too reliant on reason without considering human moral values (*humanism*). This period changed the meaning of rational human being not only logically correct but also open to the moral values of society, namely humanity, peace, justice, and happiness. The openness of thinking towards the moral values of the community upholds peace and happiness based on tolerance towards religious differences and views of life (*pluralism*) so that people can freely determine their minds to see something new in their environment. The explanation above is the initial condition of the contemporary period that influenced the change in the style of thinking in this period. The style of philosophical thought in this period no longer relied on anthropocentrism, was replaced with a logocentric style of philosophy which relied on the subject of reality to reveal transcendental truths that gave rise to various interpretations behind the phenomena that occurred.⁴⁷

⁴⁴ Musakkir, h. 9.

⁴⁵ Psillos, "What Is General Philosophy of Science?," h. 93-103.

⁴⁶ Gerard Clinton Godart, "'Philosophy' or 'Religion'? The Confrontation with Foreign Categories in Late Nineteenth Century Japan," *Journal of the History of Ideas* 69, No. 1 (2008): h. 71-91, <https://www.jstor.org/stable/30139668>; See also Syarifuddin Syarifuddin, "Konstruksi Filsafat Barat Kontemporer," *Substantia: Jurnal Ilmu-Ilmu Ushuluddin* 13, No. 2 (October 11, 2011): h. 231, <https://doi.org/10.22373/substantia.v13i2.4827>.

⁴⁷ Syarifuddin, "Konstruksi Filsafat Barat Kontemporer," h. 231-248.

C. Interdisciplinary Islamic Studies and Philosophy of Science

The debate between religious belief and science has been felt since the Middle Ages. The influence of orthodox religion is very strong in finding problem solving and becomes a benchmark for a truth as stated by the theologian Augustine who believes that the universe was presented by God not from natural activities. When there are two different views on a truth, it is possible for one view to become alienated from the stronger view such as the arguments of Hegel and Marx. Both opinions differ from each other, Hegel mentions that material is a form of alienation from ideas or spirits⁴⁸ and Marx says vice versa.⁴⁹ When humans are very dependent on one object (God or Material) it will form a gap and a perceived inner and outer conflict.⁵⁰

However, in the 7th century AD, with the entry of Western philosophy into the Arabs, it formed a different paradigm. Muslim scholars did not oppose Western thought but studied it to innovate in the advancement of science; Muslim philosophers began to observe phenomena that occur with reason and mind. The thoughts generated are also in the broad field of science not only in the field of Islam, the contribution of these thoughts to the development of science including in the fields of technology and medicine. Seeing that period, it can be understood that Islamic teachings do not shackle humans in using their minds for the advancement of useful knowledge.⁵¹ However, Western philosophical figures have different conditions, where the development of science is more emphasized on the mind and puts aside the values of God's teachings.

⁴⁸ Robert Pippin, "Hegel's Practical Philosophy," *Graduate Faculty Philosophy Journal* 31, no. 2 (October 1, 2010): h. 424-441, <https://doi.org/10.5840/gfpj201031228>; See also Sean Sayers, *Marx and Alienation: Essays on Hegelian Themes* (New York: Springer, 2011).

⁴⁹ Irzum Fariyah, "Filsafat Materialisme Karl Marx (Epistemologi Dialectical and Historical Materialism)," *FIKRAH* 3, No. 2 (December 31, 2015): h. 431-454, <https://doi.org/10.21043/fikrah.v3i2.1823>; See also Andi Muawiyah Ramli, *Peta Pemikiran Karl Marx (Materialisme Dialektis dan Materialisme Historis)* (Yogyakarta: Lkis Pelangi Aksara, 2000).

⁵⁰ Daniel L. Pals, *Nine Theories of Religion*, Third Edition (New York: Oxford University Press, 2015), <https://en.ids1lib.vip/book/5538764/e162b0>.

⁵¹ Afzalur Rahman, *Ensiklopedia Ilmu Dalam Al-Quran: Rujukan Terlengkap Isyarat-Isyarat Ilmiah* (Mizan Pustaka, 2007).

To harmonize Western science and religious values, it is necessary to reconstruct both in one field of study. Contemporary philosophical thought also focuses on human life, seen from major social and cultural changes indicating the existence of more complex human problems. The development of science in this period was not only based on rational truth but was also open to the moral values of society, so that the diversity of views on natural activities and religious beliefs can create human peace through an established sense of tolerance.

Indonesia with a homogeneous human life is very suitable for these conditions. The condition of the Indonesian people not only apart from focusing on the advancement of science, but also cultural and religious beliefs are still very strong, even Indonesia becomes a country with the largest Muslim population. The life of the Indonesian people is prioritized to have tolerance for all the differences that are created. Tolerance is not only in human relations but can also be a link for scientific and religious discussions.⁵² Considering the strong socio-religious situation, the development of science and Islam can synergize with each other for the benefit of human civilization.

1. Al-Qur'an and Science

Islam as the last religion for all human beings has a privilege because it is the perfection of the religion of Samawiyah.⁵³ For Muslims, religion is seen as Rahmatan Lil Alamin which is interpreted as a form of Allah SWT's love for all his people in the world.⁵⁴ To stick to the teachings of Islam, mankind is guided by the

⁵² Jelis Subhan, "Concept of Secularism," SSRN Scholarly Paper (Rochester, NY, March 16, 2016), <https://doi.org/10.2139/ssrn.3517967>.

⁵³ Abu Yazid, *Islam Moderat* (Jakarta: Penerbit Erlangga, 2014); Atang Abd Hakim and Jaih Mubarak, *Metodologi Studi Islam* (Bandung: Remaja Rosdakarya, 2017).

⁵⁴ Zainudin Zainudin, "Dakwah Rahmatan Lil-'Alamin: Kajian Tentang Toleransi Agama Dalam Surat Al-Kafirun," *Jurnal Dakwah: Media Komunikasi Dan Dakwah* 10, No. 1 (2009): h. 19-31; See also Haidar Putra Daulay et al., "Proses Islamisasi Di Indonesia: Tinjauan Dari Berbagai Aspeknya," *Jurnal Kajian Islam Kontemporer (JURKAM)* 1, No. 2 (October 28, 2020): h. 41-48, <http://ejurnal.seminar-id.com/index.php/jurkam/article/view/607>; See also Ali Abdul Wakhid et al., "The Islamic Perspective Of Non-Muslim Leaders In Indonesian Muslim Majority Communities," *Akademika : Jurnal Pemikiran Islam* 26, No. 2 (December 14, 2021): h. 277-96, <https://doi.org/10.32332/akademika.v26i2.3753>.

Overview of the Philosophy of Science on the Nature of Interdisciplinary Islamic Studies

Qur'an as a revelation sent down by Allah SWT to provide guidance for human life in various aspects. Apart from the perfection of religion, the privileges possessed are also due to the characteristics of religious teachings contained in the Qur'an. The teachings contained in the Qur'an, Islam does not limit humans in thinking and contributing to the development of Science and Technology. As in the letter that was first revealed (Surah Al-A'laq 96:1-5), Allah SWT has given instructions for humans to read. The letter contains the intention, Allah has given humans the opportunity to think and understand everything by reading.⁵⁵ As for another letter in the Qur'an that strengthens the teachings of Islam giving human freedom to develop knowledge stated in QS. Al-Mujdah (58:11) is explaining that Allah SWT elevates the degree of people who are knowledgeable.⁵⁶ This means that science is an interest for humans to be able to reveal the truth of God based on faith and reason.

Regarding to the development of science, technology and the universe, the Qur'an has also explained it in QS. Jonah (10:101) which reads [*Say: "Behold all that is in the heavens and on earth"; but neither Signs nor Warners profit those who believe not*] and also explained by QS. Ar-Rahman (55:33) which sounds [*O ye assembly of Jinns and men! If it be ye can pass beyond the zones of the heavens and the earth, pass ye! not without authority shall ye be able to pass!*]. The two interpretations of the verses of the Qur'an provide an understanding that humans have been ordered to observe the universe to obtain evidence of the greatness of Allah SWT.⁵⁷ and the

⁵⁵ Taufik Mukmin, "Urgensi Belajar Dalam Perspektif Al-Qur'an Surat Al-Alaq Ayat 1-5 Menurut Tafsir Ibnu Katsir," *El-Ghiroh : Jurnal Studi Keislaman* 11, No. 2 (2016): h. 1-21, <https://doi.org/10.37092/el-ghiroh.v11i2.53>; See also Sakban Lubis and Muhammad Roihan Nasution, "Nilai Pendidikan Pada Surah Al-Alaq Ayat 1-5 Menurut Quraish Shihab," *Jurnal Ilmiah Al-Hadi* 4, No. 2 (January 2, 2020): h. 919-941, <https://journal.pancabudi.ac.id/index.php/alhadi/article/view/745>.

⁵⁶ Sholeh Sholeh, "Pendidikan Dalam Al-Qur'an (Konsep Ta'lim QS. Al-Mujadalah Ayat 11)," *Jurnal Pendidikan Agama Islam Al-Thariqah* 1, No. 2 (2016): h. 206-222, [https://doi.org/10.25299/althariqah.2016.vol1\(2\).633](https://doi.org/10.25299/althariqah.2016.vol1(2).633); See also Ai Suryatiet.al, "Konsep Ilmu Dalam Al-Qur'an: Studi Tafsir Surat Al-Mujadilah Ayat 11 dan Surat Shaad Ayat 29," *Al-Tadabbur: Jurnal Ilmu Al-Qur'an dan Tafsir* 4, No. 02 (December 10, 2019): h. 29, <https://doi.org/10.30868/at.v4i02.476>.

⁵⁷ Danial Zainal Abidin, *Quran Saintifik- Edisi Kemas Kini* (Malaysia: PTS Millennium, 2014), h. 314.

explanation in the letter Ar-Rahman is relevant to the conditions of human life where humans who have knowledge can develop rockets to traverse the heavens and the earth. However, to uncover this phenomenon, it is also necessary to use rational and empirical thinking to obtain a science (theory) that supports it. The more you study the teachings of Islam, the more you will know that Islam can be studied with an approach to other broad (interdisciplinary) fields of science.⁵⁸

2. The Relationship of Science with Islamic Studies in the Philosophy of Science

The revelation of the Qur'an does explain the truth that exists on earth but does not explain in detail, or it can be said that it only uses codes. With that, it is humans who can reveal the truth by taking advantage of the great gift given, the mind.⁵⁹ For Muslims, if they believe with faith (heart) the truth of Islamic teachings in the Qur'an is an absolute thing, but to prove the truth it can also be studied using the scientific method to get a science (theory). If tracing the relationship between Islam and philosophy has been felt since the medieval period, Muslims began to develop science by taking the substance of Western philosophical thought.

The development of previous philosophy, the study of science at that time had a dichotomy between Western philosophy and Eastern philosophy, where western thought had not been able to accept the influence of religion on the creation of science. However, the current era shows a different condition; nowadays many Western scientists are starting to be interested in developing Islamic studies.⁶⁰ This

⁵⁸ Lukman S. Thahir, *Studi Islam Interdisipliner: Aplikasi Pendekatan Filsafat, Sosiologi, dan Sejarah*, Cet. 1 (Yogyakarta, Indonesia: Qirtas: Didistribusikan oleh Qalam, 2004), h. 262; See also Agus Kenedi, "Urgensi Studi Islam Interdisipliner Di Era Millennial," *JURNAL MUBTADIIN* 7, No. 01 (June 26, 2021): h. 144-157, <http://journal.an-nur.ac.id/index.php/mubtadiin/article/view/57>.

⁵⁹ Erma Yulita, "Akal Dan Pengetahuan Dalam Al-Qur'an," *Mitra PGMI: Jurnal Kependidikan MI* 1, No. 1 (July 16, 2015): h. 78-96, <https://doi.org/10.46963/mpgmi.v1i1.34>.

⁶⁰ Mohammad Arif, *Studi Islam Dalam Dinamika Global* (Kediri Jawa Timur: STAIN Kediri Press, 2017); See also Nurul Ihsannudin, "Metode Kritik Autentisitas Hadis Irene Schneider," *Riwayah: Jurnal Studi Hadis* 3, No. 1 (2017): h. 83-98, <https://doi.org/10.21043/riwayah.v3i1.3438>.

Overview of the Philosophy of Science on the Nature of Interdisciplinary Islamic Studies

means that the dichotomy between Western and Eastern thought is currently starting to disappear as Islamic studies are accepted for the development of western science. As in the current condition, Western scientists are increasingly appreciating Islam to increase interaction between Western and Islamic academics in the exchange of knowledge through Islamic Studies Programs that are starting to emerge in the West. The form of Western thoughts interests in Islam gives a new stigma that Islamic studies can go hand in hand with philosophical thought in creating a new science. Likewise in Indonesia, which has the largest number of Muslims, Islamic universities in Indonesia facilitate the development of science.⁶¹

When compared to other countries, the state system in Indonesia opens the greatest opportunity for Islamic education reformation.⁶² Indonesia as a country with a homogeneous society has a significant impact on the development of Islamic studies. Islamic education reformation as a manifestation to the whole world that religion contributes to science that continues to grow. A new form of Islamic Studies to support the direction of scientific progress is through Interdisciplinary Islamic Studies.⁶³ Through this study, it provides broad opportunities for studies of problems in the community. This support makes Islamic Studies have various concentrations of scientific fields that can be studied scientifically and still prioritize human moral values. The availability of a broad concentration of scientific studies based on Islamic teachings is a hope to realize the birth of Muslim intellectuals who have global competence and provide progress for human civilization.

An advance in technology today is also the success of the development of science. In terms of purpose and function, technology

⁶¹ Saifuddin Mujtaba, "Studi Islam Interdisipliner: Sebuah Keniscayaan," *AT-TURAS: Jurnal Studi Keislaman* 2, no. 2 (2015): h. 166.

⁶² Amin Abdullah, "Interdisciplinary Islamic Studies in Indonesia," 2020, https://www.icrs.or.id/news/interdisciplinary-islamic-studies-in-indonesia_1081.

⁶³ Khamami Zada, "Orientasi Studi Islam di Indonesia: Mengenal Pendidikan Kelas Internasional di Lingkungan PTAI," *INSANIA: Jurnal Pemikiran Alternatif Kependidikan* 11, No. 2 (2006): 258–70, <https://doi.org/10.24090/insania.v11i2.179>; See also Afiful Ikhwani, "Perguruan Tinggi Islam Dan Integrasi Keilmuan Islam.," *At-Tajdid: Jurnal Ilmu Tarbiyah* 5, No. 2 (August 30, 2016): h. 159-187, <https://ejournal.isimupacitan.ac.id/index.php/tajdid/article/view/18>.

provides many conveniences in human life,⁶⁴ but because of its freedom it often causes negative social effects. As an example of the development of communication tools and the internet, some time ago many cases related to fraud or crime traps that could harm humans. Even if we look at the Western world like America, which has Puritan Muslims, Muslims are not allowed to study social sciences and humanity. This condition is a serious concern for Muslim scholars in Islamic Studies to be able to distinguish absolute and relative things from Allah's Revelation.⁶⁵

The frame of philosophy of science is needed to see deeper into the meaning of Interdisciplinary Islamic Studies. The rapid development of value-free science has formed a scholastic tradition in Islamic studies in viewing various social phenomena. This is a strong reason for the formation of this study. In terms of epistemology, the formation of Interdisciplinary Islamic Studies can answer the benefits for the development of science. Scientifically Interdisciplinary Islamic Studies forms a harmonious relationship between Islamic Studies and science. Furthermore, on the axiological component or the values contained, Interdisciplinary Islamic Studies does not limit critical thinking to a phenomenon. This implies that Islam does not limit the development of science; even Islamic studies provide direction for emerging innovations to be applied with the aim of positive benefit. Religious teachings can complement the moral values that must be contained so as not to conflict with the ethics of good behavior. This is reinforced by Albert Einstein's thinking that the integrity of science is the result of the integration of rationalism, empiricism, and intuitive mysticism.⁶⁶

In line with the positive benefits, one of the religious leaders in Indonesia, Habib Husein Ja'far, argued that "religion does not only need science but is necessary, to ensure that religion remains sacred

⁶⁴ Muhamad Ngafifi, "Kemajuan Teknologi Dan Pola Hidup Manusia Dalam Perspektif Sosial Budaya," *Jurnal Pembangunan Pendidikan: Fondasi Dan Aplikasi* 2, No. 1 (June 1, 2014), <https://doi.org/10.21831/jppfa.v2i1.2616>.

⁶⁵ Abdullah, "Interdisciplinary Islamic Studies in Indonesia."

⁶⁶ Bahrum Bahrum, "Ontologi, Epistemologi dan Aksiologi," *Sulesana: Jurnal Wawasan Keislaman* 8, No. 2 (December 1, 2013): h. 41, <https://doi.org/10.24252/.v8i2.1276>.

Overview of the Philosophy of Science on the Nature of Interdisciplinary Islamic Studies

from all myths". The argument is intended that religion is free from myths, for example in the process of a person's illness should be given medical treatment that is logical, not based on myths or rituals. On the occasion of another lecture, Habib Husein Ja'far also highlighted the importance of the need for knowledge of religion. Habib Husein Ja'far explained that scholars need to provide direction for the implementation of scientific discoveries from science to positive uses; this is to reduce the potential for these discoveries to be used for bad (negative) behavior.

Therefore, it can be understood the urgency of Interdisciplinary Islamic Studies not only in the scope of religious-based educational institutions but also in general (non-religious) aims to be able to provide positive direction and more comprehensive knowledge to Muslim scholars. However, in this study, it is also necessary to pay attention to the limitations of the scope of the study through the appropriate scientific method so that the results of the study do not overlap but complement the development of science between fields of science.⁶⁷

D. Conclusion

Based on the description above, it can be seen the conclusion of the essence of Interdisciplinary Islamic Studies in the Philosophy of Science frame. Interdisciplinary Islamic Studies provides space for humans to overcome the complexities of existing human life problems, because these problems are not only solved based on one field of study. The establishment of the study also helped to revive the scholastic tradition in Islamic Studies and keep Islamic teachings pure from myths. Then Interdisciplinary Islamic Studies can complement the moral values that must contain scientific findings in various fields of study so that they do not conflict with the ethics of good behavior.

⁶⁷ Mujtaba, "Studi Islam Interdisipliner.", h. 166

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**Overview of the Philosophy of Science on the Nature of
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