



Amin Abdullah's Thoughts on Epistemology and its Relevance for Higher Education in Indonesia

Waston¹, Ismail Abdul Ghani al-Jalal², Abubakar Muhammad³, Andri Nirwana⁴

^{1,4}Universitas Muhammadiyah Surakarta, Indonesia

²International Academy of Scientific Miracles, Yemen

³Islamic Studies Unit, Federal University of Kashere, Gombe State, Nigeria

was277@ums.ac.id, asmaylaljalal95@gmail.com, khamsussalawat11@gmail.com,

an140@ums.ac.id

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Abstract: The purpose of this study was to analyse the existence of a relationship between religion and science seems to be a dichotomous view. The two are like oil and water, two identities that cannot be reunited and separated. Because of this "dispute" science tries to embrace religious and ethical concepts for science-technology to have a human feel. The research method is qualitative with biographical, historical, and content analysis approaches. The conflict between the two forced Muslim intellectuals to create "epistemological bridges" to reconcile science and religion. One of them is M. Amin Abdullah, who argues that the concept of integration-interconnection is an attempt to avoid the dichotomous view of science and religion (especially Islamic science) and in the view of epistemology, this concept tries to offer back all disciplines so that there is dialogue, communication, synergy, and mutual help relationships. This article aims to discuss the epistemology of M. Amin Abdullah's thought regarding the concept of integration of interconnection with methodology and its relevance for the development of higher education science in Indonesia.

Keywords: thought, Amin Abdullah, Islamic epistemology, science, patterns of integration-interconnection.

INTRODUCTION

Although the development of science and technology in the 21st century has achieved tremendous progress, the relationship between religion and science still seems to be dichotomous. In addition, the relationship of knowledge with one another also still seems to run independently, does not need each other, is not related, and does not "greet each other".

Not a few modern humans believe that science and religion are separate entities. The two are like water and oil that cannot be put together. Attempts to unify it are considered to only diminish the objectivity of science and also the sacredness of religion [1], [2].

The assumption that has long been imprinted in the back mind of most mankind is that science departs from doubts that use the scientific method as a foundation in the search for truth, while religion departs from an inviolable belief. Religion begins with belief with dogmatic methods and uses doctrinaire theories of truth. As a result of this "conflict", science often loses its ethical footing, so that modern technology is even less humanizing and distances humans from their human nature. The nuclear bombs that devastated Nagasaki and Hiroshima, the use of biochemical weapons in World Wars I and II, global warming, energy crises, extreme weather changes, and ecological damage are concrete evidence of how much science has lost its ethical footing and is therefore often misused [3]-[5].

The increasing distance of science from religious values made many Muslim intellectuals feel called to take responsibility for creating a kind of "crossing bridge" so that the two could be reunited. Despite much debate, some Muslim scholars, both Indonesian Muslim intellectuals and Muslim intellectuals from other parts of the world, have tried to formulate a kind of "epistemological bridge" to refer back to science and religion. One of them is M. Amin Abdullah who offers a paradigm of scientific integration-interconnection. In addition to trying to eliminate the dichotomy of science and religion (especially the Islamic-science dichotomy), the scientific project he initiated also seeks to "bring closer" various disciplines, so that between them there is dialogue, greeting, interconnectedness, and mutual need [6]-[8].

LITERATURE REVIEW

This descriptive research will dissect more critically, scientifically and deeply the epistemological thinking of M. Amin Abdullah and its relevance to the scientific development of universities in Indonesia. Before further discussing his epistemological thoughts, we will first discuss a brief biography of M. Amin Abdullah. M. Amin Abdullah was born in Margomulyo, Tayu, Pati, Central Java, July 28, 1953. Graduated from Al-Mu'allimin Al-Islamiyyah (KMI), Pesantren Gontor Ponorogo 1972 and Bachelor Program (Bakalaureat) at Institut Pendidikan Darussalam (IPD) 1977 at the same Boarding. He completed his Bachelor Program at the Faculty of Ushuluddin, Department of Comparative Religion, IAIN Sunan Kalijaga Yogyakarta, in 1982. Under the sponsorship of the Ministry of Religion and Government of the Republic of Turkey, starting in 1985 he took a Ph.D. Program in Islamic Philosophy, at the Department of Philosophy, Faculty of Art and Sciences, Middle East Technical University (METU), Ankara, Turkey (1990). He attended the Post Doctoral Program at McGill University, Canada (1997-1998) [9]-[11].

His dissertation, entitled The Idea of the University of Ethical Norms in Ghazali and Kant, was published in Turkey (Ankara: Turkiye Diyanet Vakfi, 1992). Other published scientific works include Kalam Philosophy in the Postmodernist Era (Yogyakarta: Student Library, 1995); and Religious Studies: Normativity or Historicity (Yogyakarta: Student Library, 1996). Dynamics of Cultural Islam: Mapping of Contemporary Islamic Discourse, (Bandung, Mizan, 2000); Between al-Ghazali and Kant: Philosophy of Islamic Ethics (Bandung: Mizan, 2002) and Multicultural Multireligious Religious Education (Jakarta: PSAP Muhammadiyah, 2005). The published translation works are Religion and Reason: The Instinct of Fear and the State of the Human Soul (Jakarta: Rajawali, 1985); Introduction to Islamic Philosophy: The Middle Ages (Jakarta: Rajawali, 1989) [12]-[14].

M. Amin Abdullah was Chairman of the Indonesian Student Association (PPI), Turkey, 1986-1987. While taking advantage of the summer vacation period, he worked part-time at the Consulate General of the Republic of Indonesia, the Secretariat of the Hajj Affairs Agency, in Jeddah (1985 and 1990), Mecca (1988), and Medina (1989), Saudi Arabia. Now, as a permanent lecturer at the Faculty of Ushuluddin, teaching staff at the Postgraduate Doctoral Program of IAIN (now UIN) Sunan Kalijaga, IAIN Sunan Ampel Surabaya, Islamic

University of Indonesia, Master Program at UIN Sunan Kalijaga, Philosophy, Faculty of Philosophy and Literature Study Program (Middle Eastern Studies), Faculty of Letters, Gadjah Mada University, Yogyakarta. In 1993-1996, he served as Assistant Director of the IAIN Postgraduate Program Sunan Kalijaga; in 1992-1995 served as Deputy Head of the Institute for Islamic Studies and Practice (LPPI) University of Muhammadiyah Yogyakarta [15], [16]. In 1998-2001 as Assistant Rector I (Academic Affairs) at his alma mater, IAIN Sunan Kalijaga. In January 1999 he had the honor of becoming Professor in Philosophy. From 2002-2005 as Rector of IAIN/UIN Sunan Kalijaga. In 2005-2010 as Rector of UIN Sunan Kalijaga Yogyakarta for the second period. In community organizations, Professor of UIN Sunan Kalijaga was the Head of the UMMAT Division, ICMI, Orwil Special Region of Yogyakarta, 1991-1995. After the 83rd Muhammadiyah Conference in Banda Aceh in 1995, he was mandated as Chairman of the Tarjih Council and the Development of Islamic Thought, Central Leadership of Muhammadiyah (1995-2000). Then elected as one of the Central Leaders of Muhammadiyah, Vice Chairman (2000-2005) [17], [18].

His pithy writings can be found in various scientific journals, including *Ulumul Qur'an* (Jakarta), *Al-Jami'ah: Journal of Islamic Studies* (Yogyakarta) and several other Islamic scientific journals. In addition, he actively participates in seminars at home and abroad. International seminars followed, among others: "Population in the Islamic World", Population Board of Al-Azhar University, Cairo, July 1992; on "Da'wah Islamiyah", Government of the Republic of Turkey, October 1993; ASEAN Religious Council (MABIM) Programme Workshop, Government of Malaysia, in Langkawi, January 1994; "Islam and the 21st Century", Leiden University, the Netherlands, June 1996; "Qur'anic Exegesis in the Eve of 21st Century", Leiden University, June 1998, "Islam and Civil Society: Messages from Southeast Asia", Tokyo Japan, 1999; "Al-Ta'rikh al-Islamy wa Azamah al-Huwaiyah", Tripoli, Libya, 2000; "International anti-corruption conference", Seol, South Korea, 2003; Preparation of the seminar "New Horizon in Islamic Thought", London, August, 2003; "Gender issues in Islam", Kuala Lumpur, Malaysia, 2003; "Dakwah and Dissemination of Islamic Religious Authority in Contemporary Indonesia", Leiden, Netherlands, 2003 [19]-[21].

METHODOLOGY

The type of research used in this writing is library research. Bogdan and Biklen concluded that the study was also categorized as qualitative research. It is said to be qualitative because this study emphasizes more on describing the thoughts of M. Amin Abdullah, especially thoughts on the concept of epistemology of science. Because the focus is descriptive, this research is also natural and inductive. As Bogdan and Biklen express, qualitative research has five specific characteristics, namely: a) naturalistic, b) descriptive, c) attention to process, d) inductive, and e) attention to meaning [22]-[24].

The approach used in this study is a philosophical approach and a historical approach. Nata stated that history or history is a science in which various events are discussed by taking into account elements of place, time, objects, background, and actors of these events. Another approach in this study is the biographical approach, Komaruddin reasoned because it explained the thoughts or views of figures, religionists, politicians, or historians. In addition, the author also uses a normative approach, namely to formulate conclusions about the circumstances and rules that apply to the object of research. Primary data sources are obtained directly from research subjects by wearing measuring devices or data collection devices directly on subjects as sources of information sought. The data analysis technique uses Content analysis, as Suryabrata said content analysis is analyzing data according to its content. With this, the data that the author collects is descriptive and textual data is phenomenal, so in managing this data the author uses this analysis. With this analysis, the author will conduct a scientific and thorough data analysis of M. Amin Abdullah's conception and thoughts, namely by: a) comparative, b) descriptive, and c) inductive. Furthermore, because this research is a study of figures and history, the steps used include: a) topic selection, b) source collection, c)

verification (historical criticism, validity of sources), d) interpretation (analysis and synthesis), e) historiography or writing, and f) conclusion [25]–[27].

Table 1. Qualitative Research Methods of Amin Abdullah's Thoughts on Epistemology and Its Relevance for Higher Education

Stages of Research	Research Activities	Event Description	Activity Objectives
Identify Epistemological Concepts	Student Literature	Identify the concepts of epistemology explained by Amin Abdullah in his works.	Understand the epistemological foundations of thought promoted by Amin Abdullah.
	Interview	Conduct interviews with Amin Abdullah or other experts who understand Amin Abdullah's thoughts to gain first-hand insights into the epistemology taught.	Gain a deeper understanding of Amin Abdullah's epistemological views.
Relevance Analysis for Higher Education	Text Analysis	Analyze the works of Amin Abdullah that focus on the application of epistemology in the context of higher education.	Understand how Amin Abdullah's epistemological thinking can be applied in the context of higher education.
	Case Studies	Conduct case studies of higher education institutions that apply or integrate epistemological concepts introduced by Amin Abdullah.	Identify the impact and potential application of Amin Abdullah's epistemological concepts in the context of higher education.
Conceptual Framework Development	Concept Synergy	Integrating the concepts of Amin Abdullah's epistemology with existing educational theories.	Forming a conceptual framework that unites Amin Abdullah's thought with relevant educational theories.
	Family of Validasi	Submit the conceptual framework that has been created to educational experts for feedback and validation.	Ensure the validity and accuracy of the conceptual framework that has been created.
Interpretation and Conclusion	Data Analysis	Analyze research results to illustrate the implications of Amin Abdullah's thinking on higher education.	Provide an interpretation of how Amin Abdullah's epistemological concepts can influence higher education practice.
	Withdrawal of Conclusion	Conclude the relevance of Amin Abdullah's epistemological thinking to higher education and its potential impact in improving the quality of higher education.	Describe the practical and theoretical implications of the study.

The table above includes the stages of qualitative research that can be carried out to explore Amin Abdullah's thoughts on epistemology and its relevance for higher education. Each stage has specific research activities and clear objectives to aid in the understanding and analysis of such thoughts.

RESULTS AND DISCUSSION

A priori way of linking and using M. Amin Abdullah's epistemological thinking, among others, can be seen through his presentation of Islamic epistemology, namely: the epistemology of Bayani, irfani, and burhani. The epistemological thought of M. Amin Abdullah was adopted and was greatly influenced by the epistemological thought of M. Abid

al-Jabiry [28][29]. This fact can be found in the work of M. Amin Abdullah, Islamic Studies in Higher Education: An Integrative-Interconnective Approach. He mentioned that the two books of Al-Jabiry, namely *Takwin al-Aql Araby* and *Bunyah al-Aql Araby: Dirayah Tahliliyyah Naqdiyyah li Nudzumi al-Ma'rifah fi al-Tsaqafah al-Arabiyyah*, are representative enough to observe the fundamental structure of the philosophy of Islamic studies in the realm of humanities. Al-Jabiry's third book, *al-Aql al-Siyasy al-Araby*, is a realization of the concepts and paradigms of humanities in Islamic thought in the realm of concrete socio-political life in Muslim societies [30]–[32].

Al-Jabiry's strong influence on Amin Abdullah's thought was suggested by Carool Kersten, senior lecturer in Islamic Studies and the Muslim World at King's College London, who noted that Amin Abdullah drew on al-Jabiry's Bayani, Burhani, and Irfani epistemologies. Kersten further said that according to Amin Abdullah, al-Jabiry's critical approach covered areas very similar to Western philosophies of science and hence he proposed something that had never been done before in Islamic studies such as applying philosophical theories of science such as Karl Popper, Thomas Kuhn, and Lakatos to the study of Islam. In this context, M. Amin Abdullah offers a comprehensive approach to the study of religion as an open and interdisciplinary area, which is seen in Islam as a living religion. It is intended to study Islam through the lens of civilization using modern secular disciplines as well as traditional religious disciplines, combined with ethical-philosophical approaches, which do not pretend to be value-free [30]–[32].

For M. Amin Abdullah, Al-Jabiry's epistemology of Bayani, Irfan and Burhani provided the structure for the transformation of contemporary multidisciplinary Islamic studies into a 20th-century version of al-Ghazali's comprehensive approach to conventional religious sciences of the 11th century. This creates a dialogue between the two, thus "humanizing" Islamic studies rather than "Islamizing" knowledge [36]–[38].

According to M. Amin Abdullah, there are 3 (three) models of relationship patterns between the epistemology of Bayani, Irfan, and Burhani. First, model the pattern of parallel relationships. In this model, each epistemological pattern will run independently without any relationship or contact between another scientist, scholar, activist, or religionist [39]. The value of the benefits to be obtained, both theoretical and practical from the parallel relationship pattern model is minimal. The parallel form of relationship assumes that in a scientist there are three types of Islamic scientific epistemology at once, but each of these epistemologies stands alone and does not dialogue and communicate with each other [40]–[42].

Second, model the pattern of linear relationships. The linear relationship pattern assumes that one of the three epistemologies will be *prima donna*. A scientist would ignore another epistemology because he is proposing one of the three types of epistemology that exist. The type of epistemology he chose was considered to be the single most ideal and final epistemology. Such a model of choice would lead one to a dogmatic-theological impasse, which is usually expressed in exaggerated and exclusivist truth claims [8], [43]–[45].

Third, model the pattern of circular relationships. Each style of scientific epistemology can understand the limitations, shortcomings, and weaknesses inherent in each of them while being willing to take advantage of the findings offered by other scientific traditions and have the ability to correct their inherent shortcomings. Thus, rigidity, errors, inaccuracies, and anomalies inherent in each epistemology can be reduced and corrected after getting input and criticism from other types of epistemology, both Bayani, Irfani and Burhani epistemology [46]–[48].

Of the three models of epistemological relationship patterns above, the dominant model that occurs in the education model in Indonesia and most other Islamic countries is the parallel and linear relationship pattern model. Of course, this kind of reality is both a concern and a troubling one. Each scientific discipline is inseparable from the discipline of other sciences and cannot stand alone. Responding to this reality, M. Amin Abdullah, said that any scientific

building, both religious science (including Islam and other religions), social-humanities science, and nature cannot stand alone. When certain sciences claim to be independent, feel they can solve problems independently, and do not need help and contributions from other sciences, then this self-sufficiency will sooner or later turn into narrowmindedness not to call it fanaticism of particularity of scientific disciplines. Therefore, cooperation, greeting, mutual need, mutual correction, and interconnectedness between scientific disciplines will be more able to help humans understand the complexity of the life they live and solve the problems they face [49], [50].

To solve the scientific dichotomy (between religious science and general science), the former Rector of UIN Sunan Kalijaga, conceptually offers an integration-interconnection paradigm. Through this paradigm, scientific dialogue that is integrative-interconnective in addition to being carried out in the internal area of Islamic sciences, is also developed integration-interconnection of Islamic sciences with general sciences. Each family has limitations and therefore must dialogue, cooperate, and utilize the methods and approaches of other knowledge families to complement their respective shortcomings. This scientific project seeks to dialogue the scientific triangle, namely Hadlarah an-Nash (religious science based on texts), Hadlarah al-Ilm (social sciences and natural sciences), and Hadlarah al-Falsafah (ethical-philosophical science) [51], [52].

The integration-interconnection paradigm is an effort to reunite Islamic sciences with modern sciences, in the hope of achieving integrative and interconnective scientific unity. This process is expected to be a solution to various crises that have plagued humans and nature lately as a result of the indifference of one science to another science that has occurred so far [53].

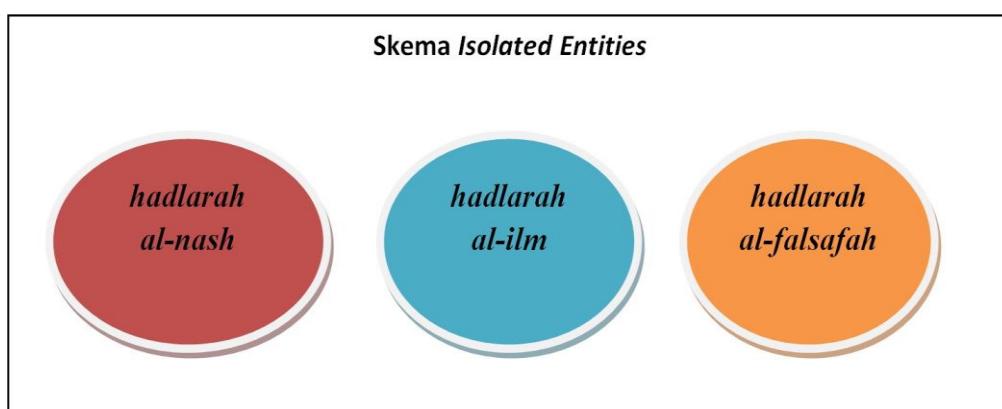


Figure 1. Schema of Isolated Entities

It can be seen in the above scheme that human civilization has advanced because of the three scientific identities. This isolated relationship configuration is believed to be the source of contemporary world problems such as environmental crises, economics, morality, religiosity, and other crises. Such a scheme can be transformed into an interconnected scientific form (interconnected entities) [54], [55].

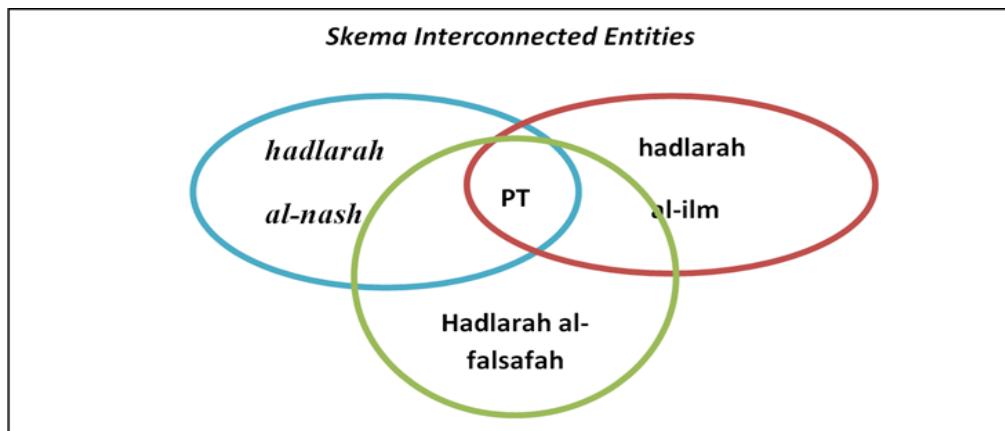


Figure 2. Interconnected Entities Schema

It appears in the above scheme that each family of knowledge has its inherent limitations and therefore, must be willing to dialogue, cooperate, and utilize the methods and approaches used by other knowledge families to make up for their inherent shortcomings [56], [57].

Paradigmatic-philosophical, there are 3 (three) aspects to be introduced by the integration-interconnection paradigm. First, epistemologically, the integration-interconnection paradigm is a response to the difficulties felt so far, inherited and passed on for centuries in Islamic civilization about the dichotomy of general education and religious education. Each stood alone, without feeling the need to greet each other. This dichotomy was exacerbated by the establishment of the Ministry of Education and Culture, and the Ministry of Religious Affairs which deals with education in this country. Second, axiologically, the integration-interconnection paradigm wants to offer a new worldview of religious humans and scientists, which is more open, able to open dialogue and cooperation, transparent, publicly accountable and forward-looking. Third, ontologically, the relationship between various disciplines has become increasingly open and fluid, although the blocks and boundaries between the supporting culture of Hadlarah al-Nash and the supporting culture of Hadlarah al-Ilm and the supporting culture of Hadlarah al-Falsafah still exist [27].

To understand the concept of scientific integration-interconnection comprehensively, M. Amin Abdullah further introduced the anthropocentric-integralist spider web scientific paradigm [58].



Figure 3. Scientific Paradigm

The picture above illustrates that the visibility or horizon of intergalactic science is so broad, as well as skilled in the fairy life of the traditional and modern sectors because of the mastery of one of the basic sciences and skills that can sustain life in the information-globalization age. In addition, it depicts the figure of a religious man (Islam) who is skilled in handling and analyzing issues that touch humanitarian and religious problems in the modern and postmodern era with the mastery of various new approaches provided by the natural sciences, social sciences and humanities. Above all, in every step taken, there is always an objective and solid foundation of religious moral ethics, because the existence of the Qur'an and the Sunnah which is interpreted in a new way (hermeneutical) has always been the basis for the religious view of life (Weltanschauung) of man that is united in one breath of science and religion. All of them are dedicated to the welfare of human beings together regardless of ethnicity, race, religion or group background [\[59\]-\[61\]](#).

Through the image of the scientific spider web, M. Amin Abdullah also criticized that the radius of scientific activities at Islamic Religious Universities (PTAI) in Indonesia is only focused on circle 1 and layer 2 ring lines (Kalam, Philosophy, Sufism, Hadith, Tarikh, Fiqh, Tafsir, Lughah). Even that, according to this Ankara University Doctorate, is only limited to the space for the classical humanities scientific approach. PTAI in general has not been able to enter the discussion of contemporary social sciences and humanities as illustrated in ring line 2 (anthropology, sociology, psychology, philosophy and the various theories and approaches it offers). As a result, there is an unbridgeable gap in scientific insight between the classical sciences and the new Islamic sciences that have utilized the analysis of the social sciences and humanities, even the natural sciences. Moreover, issues of social, political, economic, religious, military, gender, ecology, and postmodern contemporary social-humanities sciences as depicted in the layer 3 ring line are almost untouched by the social sciences and Islamic studies in the country [\[62\]-\[64\]](#).

The Relevance of M. Amin Abdullah's Epistemological Thought to Higher Education Scientific Development

M. Amin Abdullah's epistemological thinking through the integration-interconnection paradigm is always relevant as a foothold for the scientific development of universities in Indonesia, especially for Islamic Universities and/or Islamic-based universities such as Muhammadiyah Universities (PTM). The integration-interconnection paradigm can be used as a scientific paradigm of universities (especially Islamic or Islamic-based universities) to develop a non-dichotomous scientific model [\[65\]](#).

In the context of scientific development in universities, the integration-interconnection paradigm can concretely be implemented at various levels:

Philosophy Level

The integration and interconnection at the philosophical level in the teaching of courses is that each course must be given fundamental existential value about other scientific disciplines and relation to humanistic values. Teaching fiqh for example in addition to its fundamental meaning as a philosophy of building relationships between humans, nature and God in Islamic teachings, in teaching fiqh must also be instilled in students that the existence of fiqh is not alone or self-sufficient, but develops with its accommodating attitude towards other scientific disciplines such as philosophy, sociology, psychology, and so on [\[66\]](#).

Material Level

The implementation of integration and interconnection at the material level can be done with three models of embodiment of scientific interconnection between scientific disciplines. First, the integration model into course teaching. Second, the model of planting courses shows the relationship between the two disciplines of general and Islamic. This model requires each course to include Islamic words such as Islamic economics, Islamic politics, Islamic sociology, and others. Third, the integration model into course teaching. This model requires

that every Islamic and religious course must be injected with related general scientific theories as a form of interconnection between the two. On the contrary, in every teaching of general science courses, theoretical discourses must be given Islamic and religious theoretical discourses [67].

Methodology Level

When disciplines are integrated or interconnected with other disciplines, such as psychology with Islamic values, methodologically, interconnective science must use approaches and methods that are safe for the science. For example, phenomenological approaches that give an empathic appreciation of people who experience are considered safer than other approaches that contain anti-religious biases such as psychoanalysis [68]. In terms of research methods, it does not matter because a study that is carried out objectively then the result is objective truth. This kind of truth will support the truth of religion itself [69].

Strategy Level

The level of strategy referred to here is the level of implementation/praxis of the integrative-interconnective scientific learning process. In this context, at least the quality of science and teaching skills of lecturers are the key to the success of lectures based on the interconnection paradigm. In addition to these qualities, lecturers must be well-facilitated regarding the provision of diverse reading resources and teaching resources in the classroom. Similarly, learning with an active learning model with various strategies and methods becomes a necessity [70].

CONCLUSION

With the implementation of the integration-interconnection paradigm in Higher Education (Islamic and/or Islamic-based), in addition to being able to cut scientific dichotomies, in the future it is also expected to be able to deliver Higher Education (Islamic or Islamic-based) to achieve progress, especially in the development of science and technology. Because it has become an open secret, the mastery of science and technology in the Islamic world is very low. According to Azyumardi Azra, several rough indicators can be used as a measure to assess low mastery of science and technology. According to him, until now most Islamic countries are producers of raw materials such as oil, natural gas, rubber, palm oil, food seeds, cotton, and cane sugar. The economic resources in many Islamic countries are mining and agriculture. Factories that can produce added value make up only a small part of the entire economy of most Islamic countries. In agriculture, Islamic countries lag in the aspects of agricultural research and development and agribusiness compared to other countries. Director of the Graduate School of UIN Syarif Hidayatullah further stated that the weak scientific research and development in most Islamic countries is related to the reality that scientific institutions owned by most Islamic countries have not functioned optimally to encourage scientific discoveries. In the West and other countries, scientific institutions continue to grow in anticipation of the era of globalization, while in most Islamic countries growth is very slow. In most Islamic countries, the number of scientific research institutions remains very low, the budget allocated to scientific programs is almost inadequate, and the number of scientific communities and the productivity of scientists is also low. Some of these weaknesses are closely related to the Islamic world's education level. Last but not least, the challenges in the era of globalization demand a quick and appropriate response from the Islamic education system as a whole. If Muslims not only want to survive during increasingly fierce global competition but also want to appear at the front, then the reorientation of Islamic educational thinking and the reconstruction of systems and institutions is a necessity. Hopefully what M. Amin Abdullah did can position philosophy as the foundation for the development of science. That is, to ensure that the development of science does not become the sword of Damocles due to its emptiness from the perspective of the purpose of the development of science itself, namely human happiness, and not just prosperity or materialistic power and also the absence of ethics at the end of its application which can have counterproductive consequences to the

goal of the development of science itself. In the Islamic world, the importance of these scientific interconnections is even greater. That is to lift the Islamic ummah from the pit of its decline in this field, given that philosophy once proved to be the greatest impetus for the advancement of science in this part of the world.

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Author Contribution

All authors contributed equally to the main contributor to this paper, all authors read and approved the final paper, and all authors declared no conflict of interest.

Conflicts of Interest

All authors declare no conflict of interest.

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