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Harmonizinng Knowledge Integration: Insights from Amin Abdullah and Nidhal Guessom in Pesantren-Based Higher Education

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ABSTRACT

This article aims to find a feasible concept of integrated knowledge for pesantren-based higher education. This research is essential considering the issue of the integration of knowledge is still challenging for most educational institutions in Indonesia, especially higher education and pesantren. Higher education emphasizes the importance of general science based on research and methodology. it is important to adopt pesantren that emphasize Islamic teachings and building character. This research is based on a literature study where the data is taken from documents such as books, journals, and papers. The data analysis steps in this research are reducing data, presenting or displaying data, and verifying data or conclusions. The theistic science of Guessoum and the integration interconnection of Abdullah's approach potentially solve this problem hence a comprehensive study on these theories is required. The outcome is the concept of integrated knowledge namely the integration of theistic science. It offers the development of general science based on the Divinity modern sciences. The integration of theistic science implemented in pesantren-based higher education should involve the aspects of philosophical foundation, the scope of integration, and educational goals.

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1. INTRODUCTION

In the 12th century, the accomplishment of Muslim scholars in various scientific fields was dimmed and diminished due to the emergence of separative political groups that influenced Muslims in general to understand Islam exclusively and separate religion from science and philosophy (Sardar, 2016) . This understanding had an impact on the development of knowledge among Muslims as religious studies became the only focus while general science and philosophy were dormant. This paradigm brought adverse effects on Muslims, including backwardness in various aspects of life such as economics, technology, politics, and scientific fields (Elshakry, 2020). It can be concluded that Muslim scholars, especially Abbasiyah and Umayyah empire have big contribution in developing the knowledge such as natural science, social science, technology and theology.

In the last few decades, the conflict between science and Islam was campaigned by a number of Muslim groups. They believe that modern science developed based on Darwin's theory of evolution disputes Islamic teachings. This dichotomy affects the educational process held in Muslim countries. It leads to separated educational systems, namely Islamic private schools and general public schools (Mansir, 2021). Nevertheless, the dichotomous pattern of knowledge must be ended immediately due the importance of both religion and science for learners. One of the efforts is by constructing an integrative knowledge. Integration is the act of combining or mixing two or more things in order to produce a functional unit. Knowledge derived from the Qur'an and Hadith must be interrelated and integrated to general knowledge derived from nature and human intellectuals (Arifin, Amirullah, Yahman & Saputro, 2022).

This dichotomy between religion and science has caused a polarization of education system. It is reflected by pesantren and madrasah as Islamic educational institutions that only deliver Islamic sciences without general sciences, while general public schools only focus on general sciences without strengthening religious aspects. Currently, many efforts have been carried out to resolve such dichotomy that occurs at various levels of educational institutions. Pesantren that once was considered a private educational institution to learn and understand religious matters (*tafaqquh fiddin*) has currently incorporated various general sciences into its curriculum and even established universities (Ali, 2020).

The dichotomy between religion and science is a crucial problem for Muslims. Nevertheless, it can be solved by designing an integrative education through the integration of the concept of higher education and pesantren. This integration, is aspired to equip students with both Islamic and scientific knowledge (Efrinaldi, Andiko & Taufiqurrahman, 2020). Abdullah (2012) suggested that in this era, Muslims must develop integrative science to produce ideal outcomes: master of religious and science. Similarly, Goessoum (2011) reinforces the importance of integrative science as studying both sciences is a mandate from Allah as enshrined in the Qur'an.

The concept of integrated science has gained positive responses from educational leaders in Indonesia. Some of the notions include integrating Islamic values and science by incorporating relevant verses from the Al-Qur'an and Hadith to demonstrate Allah Almighty's infinite power and greatness through various scientific subjects, and to reveal the benefits of worship in Islam. In addition to these strategies, teachers can also empower students through the use of learning resources that allow them to learn from the Al-Qur'an (Darwis, 2019).

Several contemporary Muslim scholars have attempted to construct an integrative model of science and religion, namely Abdullah and Guessoum. Abdullah is a professor at the State Islamic University of Sunan Kalijaga Yogyakarta, renowned for his spider web integrative model. This model shows the interrelationships between disciplines that enable humans to solve problems and comprehensively fulfil life's necessities (Zulfa, n.d.). Meanwhile, Guessoum is an Algerian astrophysicist and professor at the American University of Sharjah, United Arab Emirates. He developed a concept of the integration of religion and science known as the theistic science (Guessoum, 2010).

In the effort to formulate a concept of Islamic education, many researchers have conducted research and published books, the results are; *first*, a book entitled "Rethinking Reform in Higher Education; From Islamization to Integration of Knowledge" explains that the crisis of education experienced by most educational institutions, including higher education, is actually not limited to Muslim societies. The core problems of higher education are linked to epistemological and ethical dimensions. Such challenges require great efforts, including the integration of knowledge. Nevertheless, the process of integrating revealed knowledge and human efforts necessitates the contemplation of disciplinary identities as well as a new perspective toward the production of knowledge. In other words, it requires a new Qur'anic paradigm to build the epistemology based on the principle of Tawhid, and one's responsibility to God, one's soul, mankind, all created being, and the universe (Sardar, 2017).

Second, "Islam and Science: Integration of Religion and Science to Build a Second Islamic Golden Age". It suggests that Muslims have to revive the Golden Age of Islam in order to catch up with the West in science and technology. Muslim scholars used to practice religion and science in an integrated manner,

therefore, the achievements can be an insight into the implementation of integrated knowledge at the current higher education.

Third, "Al-Jabiri's Traces in Abdullah's Idea about Integrative-Interconnective Paradigm for Higher Education". It explains that the integrative-interconnective paradigm initiated by Abdullah is a model that changes the dyadic into a triadic paradigm pattern. This triadic pattern is inspired by the epistemology of *Bayani, 'Irfani* and *Burhani*. It is expected that this pattern will enable for the current Islamic Religious Higher Education in providing a system of higher education that is able to adapt to the changing circumstances and times with the sacred scripture and inner experiences (Kurniawan, 2020).

Fourth, research was conducted by Nur Aly, entitled "Integrative curriculum of religion and science at special Islamic boarding schools for university students". The results of this article show the importance of integrating religion and science curricula in student boarding schools to remove the dichotomy of knowledge inherent in society. This scientific integration model is implemented through learning religious studies that are comprehensive and adapted to each student's major and by promoting a dialogical-interactive approach (Ali, 2019).

This research has differences from the studies above. This study analyzes the thoughts of Abdullah and Guesooum to find an ideal scientific integration concept for Islamic tertiary institutions. So this research is expected to contribute to Islamic tertiary institutions in formulating the concept of integration of religion and science. This article focuses on determining the concept of integrative knowledge for pesantren-based higher education as a solution to the dichotomy of knowledge and educational institution. So, in this article the author wants to discuss how are the scientific integration patterns of Abdullah and Guessoum?; and how to implement the scientific integration of Abdullah and Guessoum in pesantren-based higher education. The author hopes that this article will be useful as a basis for developing the integration of knowledge in Islamic educational institutions.

2. METHODS

This study used a technique of literature study to collect data and information through books, magazines, documents, photographs, and monumental works. The data sources included primary data and secondary data**.** The primary data in this research consist of 7 books, they are "Islamic Studies di Perguruan Tinggi, Pendekatan Integratif-Interkonektif, Multidiscipline, Interdisiplin, and Transdisiplin; Metode Studi Agama, Studi Islam Kontemporer, and Islam's Quantum Question: Reconciling Muslim Tradition and Modern Science. Meanwhile, among the secondary sources are "Islamic Theological Views on Darwinian Evolution, Paradigma Keilmuan Perguruan Tinggi Islam; membaca integrasi keilmuan atas UIN Jakarta, UIN Yogyakarta, dan UIN Malang, and other books or articles related to the integration of knowledge. The data collection technique was documentation techniques by analyzing data from various sources (Creswell, 2014). The steps in data analysis are reducing data, presenting or displaying data, and verifying data or conclusions (Kothari, 2004).

3. FINDINGS AND DISCUSSION

This study observed the ideas of integration of knowledge from Guessoum and Abdullah. Moreover, the researcher found that their ideas have relevance in creating the concept of knowledge in pesantren-based higher education. They are explained in detail as follows.

3.1. Nidhal Guessoum's Theistic Science

Theistic science is a concept of integrating science and religion formulated by Guessoum, a Professor of Physics and Astronomy at the American University of Sharjah, United Arab Emirates. Guessoum attempted to bridge the gap between Islam and science from an epistemological perspective. He argued that the Qur'an is a source of science that provides various insights to develop science, emphasizing the necessity to integrate Islam and science. This concept is actually inspired by Ibn Rushd's scientific (Guessoum, 2011).

Guessoum wrote Islam's Quantum Question to revive the discussion about the contribution of science in Muslim society. In addition, Guessoum's work is intended to demonstrate a harmonious synthesis between modern science and Islam by integrating religion, science, and philosophy. Religion is derived from God, science is derived from nature, and philosophy derived from reason. Therefore, principally, Islam is not only important to enrich oneself with science, but also to reform oneself with the dynamics of science.

According to Guessoum, in general, the sources of science share three interrelated and intertwined features namely; First, the similarity of sources. Religion, science, and philosophy originate from God. Allah sent His revelation as the basis of religion, Allah created the universe as the basis for the development of science, and Allah created reasons as the basis of philosophy (Soleh, 2020). Second, the common goal. Specifically, religion aims to position humans as servants of God, philosophy aims to understand the truth of Allah as the Creator, and science aims to discover and reveal the Greatness of Allah as the Creator. According to Miskawaih, religion achieves its goals through Revelation and Prophets, while philosophy reaches its final answer through reason which echoed by philosophers (Guessoum, 2008). Third, the similarity of methods. Guessoum stated that the scientific method of religion is related to philosophy because both of them employ the same approaches, namely dialectical and demonstration (*Burhani*). In addition, philosophy does not necessarily rely on the rational validity as it also requires the analysis of the Scriptures (Guessoum, 2008). Fourth, the same content. The verses of the Qur'an repeatedly enjoin us to ponder and reflect on Allah's creation, namely the universe. Deep thought and reflection will lead humans to philosophical understanding, while studying the universe will lead humans to scientific knowledge. Essentially religion commands humans to learn and explore both philosophy and science, thus preventing the conflict between them with religion (Guessoum, 2008).

Based on those similarities, theistic science has some scopes that consist of the integration of science and the Qur'an, the integration of science and God, and the integration of Islam and the Theory of Evolution. First, science and the Qur'an. Guessoum argues that the verses of the Qur'an are the basis and inspiration for the advancement of science as implied in numerous verses scientific terms such as to think, observe, examine, and similar words. While the development of science can be done massively, it must be followed by the inculcation of divine values to balance them for the benefit of life. The truth in the context of religion is not only empirical but it also includes transcendental values. Therefore, rational power must be accompanied by intuitive power (Guessoum, 2015).

Second, Islam and the Theory of Evolution. Basically, the theory of evolution has a relationship with Islam; hence an appropriate interpretation to reveal the relationship between them required (Guessoum, 2008). Guessoum noted the importance of a study on evolution as evolution is factual in nature. The theory of evolution can be studied from various perspectives, and evolution is an important discussion in terms of the relationship between religion and science (Guessoum, 2016).

Third, Science and God. To construct an eligible and correct understanding of the relationship between science and Islam, the basic in Islam, namely divinity with all the attributes attached to Him, must be underlined. The essence of the concept of divinity in Islam is monotheism (*Tawhid*). (Soleh, 2018) Philosophers and scientists are required to understand the Qur'an, not only textual but also understanding God and the universe simultaneously through observation and mystical experience of Sufism (Guessoum, 2010).

To integrate these disciplines, Goessoum offers a layered or contextual interpretation of the Qur'an. The interpretation of the Scripture is very important considering the necessity of understanding the texts Al-Qur'an using various approaches as an effort to integrate religion, philosophy, and science (Guessoum, 2010). Based on Ibn Rushd's concept, Guessoum divides the level of reasoning into three layers. First, the interpretation for the general public entails the textual-historical level and excludes contextual analysis. The understanding is only at the level of what is plainly written in the text. Second, the interpretation of the middle class. At this level, reasoning is involved but it has not reached the philosophical critical level yet. Third, the level of the philosopher is able to analyze the texts using

dialectical and demonstrative approaches (*Burhani*). At this level, a person is able to interpret the scripture through *ta'wil* or by interpreting the text slightly different from its textual meaning or using metaphors (*majaz*) (Soleh, 2018).

Based on similarities between sources of knowledge, relationships between disciplines, and patterns of contextual interpretation, Guessoum constructs an objective and systematic theistic science. This concept is illustrated in the scheme below.

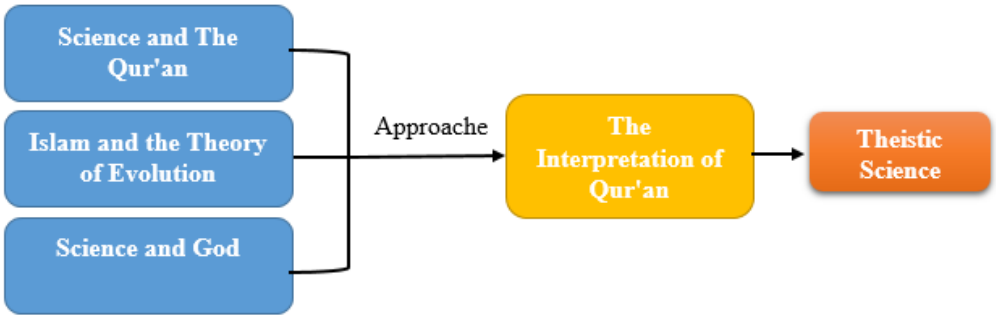

Figure 1. The Concept of Theistic Science

Based on Figure 1, the scope of theistic science includes the integration of Islam and science, the integration of Islam and the theory of evolution, and the integration of science and divinity. To gain a profound understanding of these scopes, it is necessary to interpret the Qur'an as an inspiration for the development of science through layered interpretations so as to obtain theistic science.

To support an objective and systematic theistic science, Guessoum describes several steps in the development of the scientific method, namely; (1) Conducting in-depth observations of a phenomenon, (2) Formulating the hypothesis, (3) Testing the hypothesis, (4) Accepting or rejecting the hypothesis.(Guessoum, 2010)

In addition to methodology, science is inseparable from metaphysics which will form a paradigm or worldview in the development of science. According to Ferguson in Guessoum science incorporates several metaphysic principles including: (1) the universe is a proof of God's power that can be understood by humans, (2) there is an essential truth behind any findings found through observation because God is the Creator and the Omniscient, (3) God is the source for everything that happens (Ferguson, 2004).

Finally, Guessoum explained that the holistic aim of knowledge in the Qur'an for humans is to have fear (*taqwa*) of Him (Soleh, 2018). Guessoum emphasizes the theistic paradigm or Islamic worldview in the developing sciences. This perspective is based on several things; first, theism means believing in God as the creator and humans as the custodian of God's universe hence God always interacts with or intervenes in everything that happens to His creatures. Second, the theistic paradigm is seen as the most appropriate to depict all events in the universe in which the higher the level of human understanding about the universe, the higher the level of human belief in the existence of God. Third, the theistic paradigm will motivate humans to continually observe, explore, and discover new things, in terms of concrete, visible, and metaphysical dimensions (Soleh, 2020).

3.2. Integration Interconnection of Amin Abdullah

The integration interconnection paradigm was initiated by Abdullah, a professor at the State Islamic University of Sunan Kalijaga, Yogyakarta. The concept of the integrative interconnection paradigm seeks to combine the things that have been treated dichotomously, namely the separation between religious knowledge and general knowledge (Abdullah, 2012). He constructed the epistemology of Islamic scholarship based on the thoughts of Abid Al-Jabiri, which includes three perspectives; *Bayani, Irfani,* and *Burhani* (Abdullah, 2012). *Bayani* epistemology is a way of thinking that

emphasizes text without any context analysis that seems rigid, exclusive, and restricted to further dialogue with other sciences. *Irfani* epistemology is a way of thinking through intuition, spirituality, or a way to reveal knowledge from God based on the texts. It is a continuation of *Bayani* epistemology as it involves one's intellectual analysis to understand the text. (Bahri, 2017) These two epistemologies have not been able to face the increasingly complex modernity. Therefore, *Burhani* epistemology is proposed to answer the challenges, because it covers the knowledge from natural, social, and human realities (Sifa, n.d. 2019).

These three perspectives are interrelated in that they do not lead to the finality and exclusivity of science. In fact, the finality and exclusivity of science can cause disharmony in human life. Abdullah modified the three epistemologies (*Bayani, Burhani,* and *Irfani*) through three scientific entities, namely *hadharah al-nash* (text civilization), *hadharah al'ilm* (science civilization), and *hadharah al-falsafah* (ethics, prophetic). The concept shows that every science has its own limitations and shortcomings. Consequently, continuous linkages, dialogue, and cooperation between sciences are required. Each scientific discipline must correct, provide input, and collaborate with others (Abdullah, 2012).

Based on the three scientific entities discussed previously, an integrated interconnected scientific paradigm in the form of a spider web was developed. It illustrates that a religious person must be able to analyze and adapt to global developments, both in the context of humanity and religion in the modern era. This ability can be achieved by mastering new scientific approaches or methods that include the contemporary sciences, social sciences, and humanities. These modern sciences must be based on religion, morals, and ethics in order to bring benefits, namely the achievement of harmony and prosperity in life. The scientific integration of the spider web is illustrated below.

Figure 2. The Concept of Integration-Interconnection

Based on Figure 2, the first layer is the Qur'an and Hadith which represent Islamic knowledge. It includes the belief and understanding of Revelation that has been translated, interpreted, and contemplated by Muslim scholars. At this level, the most important thing is practice (Abdullah, 2012). The second layer shows the knowledge that has been designed regularly and systematically by experts according to their fields. It includes the knowledge of the Qur'an, the knowledge of Hadith, Kalam, Tasawwuf, Law, social, Civilization, and Islamic Thought. This area represents Islamic scientific theories abstracted from the Revelation or the Qur'an and Hadith through deductive reasoning and from religious practices in society through inductive reasoning (Abdullah, 2012).

The third layer shows the area of metadiscourse or critical study of the theories raised by the scientists and scholars of the second layer of science. It is developed as Islam can be a source for various disciplines with diverse methodologies, systems, mindsets, values, and beliefs. Among the disciplines are Sociology, Philology, Hermeneutics, Psychology, Phenomenology, Archeology, History, Semiotics, Philosophy, and Anthropology. The fourth layer is applied science which consists of; the Issues of Religious Pluralism, Sciences and Technology, Economics, Human Rights, Politics/Civil Society, Cultural Studies, Gender Issues, Environmental Issues, and International Law (Abdullah, 2012).

The relationship between the four layers can be explained briefly as follows; the first layer contains the Qur'an and Hadith, studied based on the scientific approaches and methods contained in the second layer so as to produce the third layer of knowledge in the form of traditional Islamic science. The third

layer of science needs to be enriched with meaning and contextualized through the fourth layer of science and vice versa, the fourth layer of science requires the third layer of science as inspiration and to enrich its development. Communication and inter-science linkages in a layer will encourage the presence of new sciences and the development of integration-interconnection must cover the fourth scientific layer in the form of contemporary issues (Abdullah, 2017).

To support the integration among disciplines of knowledge, Abdullah offers three approaches namely multidisciplinary, interdisciplinary, and transdisciplinary (Fitri, Nafis, & Indarti, 2020). First, multidisciplinary is a process to link or integrate two or more sciences using the methods and approaches of the respective science. In a multidisciplinary approach, each science still maintains its attributes and method hence the outcome still reflects the characteristics of the involved sciences (Abdullah, 2020).

Second, the interdisciplinary approach uses various perspectives from a relevant or integrated scientific group to solve a particular problem. Thus, interdisciplinary shows the intensive interaction between one or more disciplines, whether directly or indirectly through teaching and research programs to integrate concepts, methods, and analysis (Abdullah, 2020). Third, the transdisciplinary seeks to develop new theories or axioms by linking various disciplines and the involvement of non-experts to arrive at a conclusion and policy. This approach is used to achieve targets, including how to deal with the complexity of reality, how to understand complex global issues, how to encourage synergy between disciplines, and how to build collaboration between experts from various sectors (Abdullah, 2020).

3.3. The Relevance of Nidhal Guessoum and Amin Abdullah's Concept for Pesantren-Based Higher Education

The concept of pesantren based on higher education is an effort to advance Islamic education through the integration of knowledge; religion, nature, and social science (Abdullah, 2017). It is important to integrate the higher education system and the Pesantren education system. Higher education emphasizes the empiric, scientific, and systematic knowledge that is based on research and observation methods. Meanwhile, Pesantren focuses on delivering Islamic studies and character-building.

The Islamic studies in pesantren consist of the interpretation of the Qur'an and Hadith, Arabic language (Nahwu, shorof, Balaghah), History of Islamic Culture, Faroidh, Fiqh, Aqidah, Al-Akhlak, Tasawwuf, and others (Prastowo & Mulyanto, 2021). The majority of references are books written by scholars during the Golden Age of Islam. However, the current pesantrens have modernized their curriculum as indicated by the presence of general subjects, such as natural and social sciences. This process is carried out by adopting the formal education systems, namely Elementary School, Junior High School, Senior High School, and Higher Education (Abidin, 2020).

Pesantrens have also strengthened the mastery of knowledge through character-building education. Among the characteristics instilled in the pesantren are sincerity, modesty, independence, *ukhuwwah Islamiyah* (Islamic brotherhood), and self-reliance (Purwanto, M. R., Mukharrom, T., & Rahmah, 2021). Based on the explanation, it is possible for Pesantren to integrate religious and scientific knowledge. Furthermore, it is expected that Pesantren will have a significant role in fostering Islamic worldview in students, and at the same time, the science developed in the pesantren and higher education institutions will not be separated from divine values. The integration of higher education and pesantren education system will produce a valuable concept of integrated knowledge.

The author offers the concept of pesantren-based higher education. To develop the knowledge in pesantren-based on higher education, it is suitable to combine the concepts of integrated knowledge developed by Guessoum and Abdullah. Essentially, Guessoum discusses the integration of science and Islam, such as the theory of evolution and nature. While Abdullah emphasizes the link between religious science and contemporary social issues. Furthermore, Guessoum and Abdullah have similar

approaches to the integration of knowledge, namely by conceptualizing the method to interpret the Qur'an and Hadith and then linking them with the reality of life. Guessoum stated that to obtain applicable integrated knowledge, the researcher should interpret the Qur'an through philosophical, critical thinking. This approach is useful to answer the current scientific challenges (Soleh, 2020).

Abdullah emphasizes the adaptive interpretations of the current realities. He also introduced three approaches, namely interdisciplinary, multidisciplinary, and transdisciplinary (Abdullah, 2020). Principally, Guessom and Abdullah have the same goal namely a Divine-based science. Therefore, based on these two concepts of the integration of knowledge, the author attempted to combine them and generate a concept of the integration of theistic science. The concept is illustrated in the following scheme.

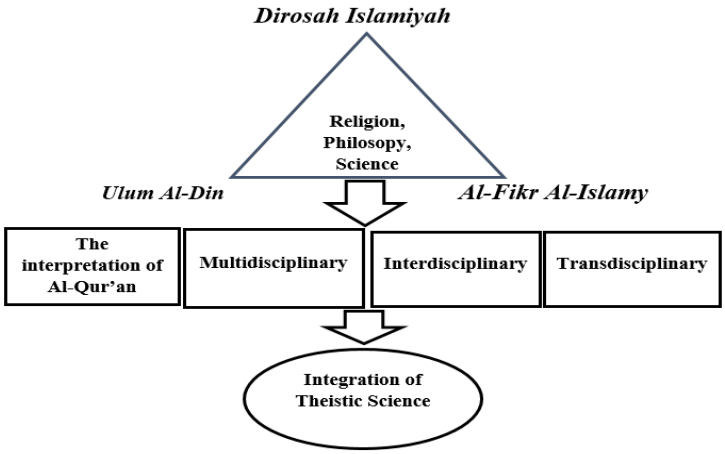

Figure 3. The Integration Concept of Theistic Science

The integration of theistic science is useful in building the scientific integration of higher education and pesantren. Additionally, during the integration process, it is necessary to pay attention to the components of the philosophical foundation, the scope of scientific integration, and educational goals.

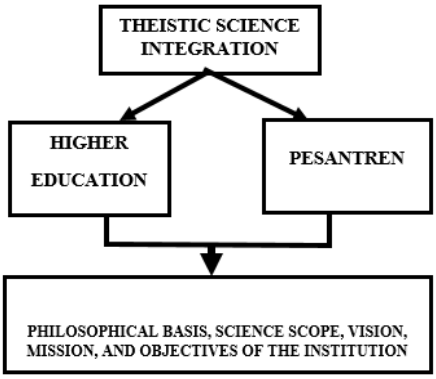

Figure 4. The integration of theistic science in higher education and pesantren

First, philosophical foundation. The integration of theistic science must be designed meticulously by considering the ontological, epistemological, and axiological aspects.(Kemenag, 2019) Epistemologically, God's Revelation is used as a source for the acquisition of general knowledge, while from the axiological aspect, modern science must be based on ethical principles and theological values in order to create a harmonious life (Kemenag, 2019).

The process of integrating science and religion is carried out by reconstructing the methodology and ethical framework of scientific disciplines, especially the general scientific fields, in order to produce a religious value-based science (Kemenag, 2019). According to Abdullah, the process can be done by juxtaposing several types of knowledge to the same degree. Each science is positioned as core knowledge (primary science) and auxiliary knowledge (secondary science) according to the targeted discipline. As an illustration, in Fiqh, religion becomes the primary science sociology and psychology are the secondary sciences. Meanwhile, religious knowledge can serve as a secondary science, such as in a study of healthy food that can be analyzed from the perspective of Fiqh (Kemenag, 2019).

Guessoum also emphasized the parallelism of science in which religion, philosophy, and science have the same source of knowledge, namely God the Creator. Both Guessoum and Abdullah offer a concept of interaction, dialogue, or reciprocity between religion and science that also strengthens Barbour's perspective on the relationship between religion and science (Mucci, 2018).

Second, the scope of scientific integration of higher education and pesantren includes the fields of education and learning, research, and community service. In the field of education and learning, the development of education does not only involve Islamic science but also the realm of general science such as medicine, architecture, and technology, through a comprehensive and integralistic approach by incorporating Islamic values (Kemenag, 2019). This concept is supported by Guessoum on the need to integrate science and the Qur'an, the theory of evolution and Islam, and science and Divinity (Guessoum, 2015).

The other scope of integration is the field of research. Research must be flexible in terms of the possibility of using methodologies and approaches from various disciplines, like interdisciplinary, multidisciplinary, and transdisciplinary. Nevertheless, these approaches must be strengthened by the interpretations of the Qur'an and Hadith based on critical and philosophical methods; and dialectical and demonstrative (*Burhani*) approach. Principally, the Qur'an is interpreted with a variety of scientific approaches, related to both social and natural sciences.

Third, educational goals are adopted in the integration of knowledge at higher education related to the vision, mission, and goals of integration. In general, the integration of knowledge at higher education has the aim of increasing the competitiveness of higher education at the global level by providing excellent and innovative human resources, who are able to solve various challenges of the times using interdisciplinary, multidisciplinary, and transdisciplinary approaches.

Finally, the integration of theistic science has a great role in the aspect of axiology where the general sciences must be optimized for the welfare of Islam in particular and all human beings in general. Essentially, the role of religion in general science is to emphasize that the essence of science actually comes from God as the Creator therefore it must be utilized in accordance with the instructions of God as the Creator.

4. CONCLUSION

The integration of the higher education system and pesantren system is expected to produce graduates who are excellent and competitive in various scientific fields and have good faith, piety, and noble character. Researchers found that it is important to develop knowledge based on the integration of theistic science in pesantren-based higher education. Pesantren becomes the basis for learning and understanding religion, while higher education serves to develop religious knowledge into the realm of science. Therefore, science cannot be separated from religion, and religion that is developed with science will be more useful for humans. In order to support the effectiveness of this concept, higher education needs to take several steps, namely: first, to establish a philosophical foundation to develop an integrative science; second, to devise a concept of integration of theistic science in relation to the vision and mission of the institution; and third, to pay attention to the scope of knowledge. Every science or study program cannot be separated from religion, and religious studies cannot be separated from science as well. This research is limited to a literature review of two figures (Abdullah and Goessoum) of scientific integration so that it only produces a concept. It is expected the next researchers

will explore more deeply with field studies, and then they can produce a more perfect concept and real implementation.

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