TÜRK FEN EĞİTİMİ DERGİSİ
Yıl 17, Sayı 1, Mart 2020

Journal of
TURKISH SCIENCE EDUCATION
Volume 17, Issue 1, March 2020

http://www.tused.org

Reconstructing Distinction Pattern of Science Education Curriculum in Indonesian Islamic Universities: An Integrated Paradigm for Science and Religion

Muhammad NASIR [1], Yatin MULYONO [2], Luvia Ranggi NASTITI[3]

[1] M.Pd., Physics Education Study Program, Institut Agama Islam Negeri Palangka Raya, INDONESIA, ORCID ID: 0000-0003-0245-4033
[2] M.Pd., Biology Education Study Program, Institut Agama Islam Negeri Palangka Raya, INDONESIA
[3] M.Pd., Physics Education Study Program, Institut Agama Islam Negeri Palangka Raya, INDONESIA

Received: 21.11.2018 **Revised:** 28.09.2019 **Accepted:** 31.12.2019

The original language of article is English (v.17, n.1, March 2020, pp.11-21, doi:10.36681/tused.2020.10)

Reference: Nasir, M., Mulyono, Y, & Nastiti, L.R. (2020). Reconstructing Distinction Pattern of Science Education Curriculum in Indonesian Islamic Universities: An Integrated Paradigm for Science and Religion. *Journal of Turkish Science Education*, *17* (1), 11-21.

ABSTRACT

This study aimed to evaluate the formulation of science education curriculum in Indonesian Islamic universities through an integrated paradigm of science and religion. This study used literature review method to form a knowledge metaphor. Because this integration pattern covered philosophical, methodological, material, and strategic levels, it could not be normatively measured. The integrated paradigm of science and religion should be implemented in an interdisciplinary integrated curriculum. Both science and religion should be concentrically distributed to distinction courses to well-formulate the integrated curriculum.

Keywords: Distinction courses, integrated curriculum, science and religion.

INTRODUCTION

The dichotomy of science and religion emerges a paradigm difference because they differently seek the truth. Namely, scientists believe that truth is empirical obtained through scientific methods, while religionists believe that truth is normative originating from revelation (Popper, 2014; Malinowski, 2014; Plantinga, 2011; and Hooykaas, 2000). Scientists consider that religion is imaginary truth because it cannot be proven through effectively scientific methods. Religionists and anti-philosophical clerics view science as emotional truths, incomprehensive and lack of ultimate happiness (Nelson, 2009). An integrated discourse seems to capture the sentiment of religion into science. That is, science and religion should not be somehow separated from each other (Bagir, 2005).

Correspondence author e-mail:nasir@iain-palangkaraya.ac.id

After this dichotomy is prolonged, rationalists realize that scientific methods can test physical things, but they cannot explain metaphysical issue(s). That is,, the dichotomy has difficulty addressing the essential truth(s) of any metaphysical issue. On the contrary, religion begins to realize that science and technology are far from happiness in the world. Recently, both scientists and religionists have strived to carry out an integrated paradigm for intertwining science with religion. Because physical and metaphysical studies lead to the emergence of an integrated comprehensive study (Esbjörn & Wilber, 2006), humans are able to verify the truth through scientific method. Further, religion is a way for generating meaning (Wilber, 1999; Warren, 1998). Scientific methods can be applied to physical studies because their parameters can be tested and generalized for truth. Metaphysical parameters cannot be tested by scientific methods but can only be perceived by the devotional heart (Van & Howell, 2007). If physical studies continue with metaphysical ones, they will create real knowledge (Kant, 2004; Burtt, 2014). Thus, all oriented knowledge aims at understanding the existence of God.

Unifying science with Islam or Islamic sciences is a manifestation of the reaction to secularism, which dichotomizes science and religion (Hafez, 2011; Haneef, 2011). Secularism, which has made a very sharp gap between science and religion, claims that science and religion have methodologically different ways of explaining the truth (Stenmark, 2017; Kitcher, 2003). Scientific method, which is objective, obtain the experimental results through observation, data analysis, interpretation, verification, and conclusions (Giere, 2010). Religious methods, which are generally subjective, depends on the intuition or personal experience and authority of the prophet or scripture. Because scientific method is inadequate for understanding the reality, religious needs to make sense of the reality (Nord, 1999). A mapping for scientific and religious researches is as follows:

> (1) Science tries to explain data objectively, publicly and can be repeated while religion explains things that relate to the existence of the world; (2) Science answer the "how" questions, while religion answer the "why" questions; (3) Authority in science is coherence, logical and experimental suitability while the highest authority in religion is God; (4) Science can be tested experimentally while religion must use symbolic and analogy (Longdon Gilkey, 1960 cited by Barbour, 1971, p.67).

Although science and religion have different paradigms, both of them have the same commitment to seek the truth (Dagher, & Bou Jaoude, 1997). Science bases on the existence of a cause while religion seeks the meaning behind the event. For science, the term "cause" is a series of causality that can be empirically observed. The term "meaning" is the core of the significant comprehension, which isan important thought even though it is sometimes vague. Difference between the terms ‘cause and meaning,’ is questions of relativity. That is, science answers the question "how", while religion responds the question "why".

The integration of science and religion arises the intellectual awareness of the religion. Namely, religion cannot be steriled from the question (“how”) of science, which enables religion to understand natural phenomena. Today, the doctrines in the scriptures is not enough for the truth of religion without scientific explanation (Roth, & Lucas, 1997; Boyer, 2008). In this context, the meeting point of science and religion is very possible. Besides, these reasons show that religional values can be used as ethics to develop science. Thus, they are not far from universal values that are valid for worldwide. Awareness of values can bridge science to religion (Esbjörn-Hargens, & Wilber, 2006; Rolston, 2006; Brooke, 1991). In the context of religion, axiology views life as a foundation in constructing facts. Hence, systems of science and value cannot be separated because both are closely related. Science is a function of the revelation teachings.

Several approaches are available to integrate science into religion. The first approach departs from scientific data that offer conclusive evidence for religious beliefs to come up with an agreement and become aware of God's existence. The second approach reviews the religious doctrines to relate them to scientific theories. In other words, religious beliefs are tested with certain criteria and reformulated by the latest scientific findings. Then, the thought of religious science is philosophically interpreted by the same conceptual framework.

The concept of integration gives a provisional approach to God and humans in science. Thus, scientific integration is not 'secularism', nor 'asceticism'. It resolves any conflict between extreme secularism and radical religion(s) in many sectors (Kuntowijoyo, 2006). Because integration can be done on two or more things, science and religion can complement each other (Woodford, 2003). This research integrates and combines the perspective(s) or mindset(s) of science (e.g., scientific-rational-empirical) within religion (e.g., normative-theological-transcendental). Thereby, it formulates the distinction of the science education curriculum in Islamic universities. These two paradigms are one of the variables in the integrated curriculum. In view of Drake (1998), an integrated curriculum model prioritizes various perspectives for learning experiences/knowledge and makes learning more meaningful.

Indonesian Islamic universities have abandoned the dichotomous paradigm (Darda, 2016). Preparing and developing an integrated curriculum in Indonesian Islamic universities have not systematically been done. Since the concept of scientific integration has still remained at the normative-philosophical level, the universities have been looking for appropriate form(s) of its applicability (Rifai, Fauzan, Sayuti, & Bahrissalim, 2014). Normative features of the concept cannot be carried out operationally and measured accurately.

The Indonesian Islamic Universities have carried out to integrate science into religion in by connecting each subject with the verses of Al-Quran or Hadith (Purwaningrum, 2017; Muspiroh, 2013; Fakhry, 2010). Verses of the Qur'an inspire the humans to think science (Khoirudin, 2017). However, all subjects cannot be discussed in an integrated manner with Al-Quran or hadith verses. Hence, the integrated pattern of totalistic monadic models is difficult to implement. Meanwhile, curriculum developmentcontains: (a) special goals, (b) cultural conception(s), (c) tension between cultural uniformity and diversity, (d) social pressure, (e) social change, and (e) future planning (Hasan, 2006) Furthermore, curriculum development should handle two important questions: (1) What subject knowledge is the most beneficial for students? (2) How should the courses be organized to make students master? (Nasution, 1998).

The Indonesian Islamic University has been connecting the subject matter with Islamic values (e.g., verses and hadiths). Thus, it has been linking Islamic values to the material(s) in the syllabus of any subject (Purwaningrum, 2017; & Aminuddin, 2010). It is expected that such an integrated curriculum only brings up dialogic integration patterns. There has been no concern about the subject distinction as the main goal of learning. Besides, the program has not concentrated on the distinction courses or their proper distribution. Given these unexplored problems, this research attempted to respond the research question “How are science and religion integrated into the curriculum? The purpose of this study was to integratescience into religion to formulate the distinction of science education curriculum in the Indonesian Islamic university.

METHODS

The study followed the literature review method recommended by Popay et al. (2006). This method consists of: (a) Identifying the review focus (i.e., the integrated curriculum of science and its implementation through science and religion), (b) Searching and mapping the

available evidence (e.g., searching resources from Google Scholar and sciendirect databases), (c) Specifying the review question (e.g., How is the distinction pattern of science education curriculum in the Indonesian Islamic Universities formulated?), (d) Identifying studies to include the review (e.g., primary and secondary sources(e.g., the researchers exploited these keywords (science paradigm, religion paradigm, integrated science and religion, integrated curriculum, knowledge metaphor in Islamic Universities in Indonesia) to search related studies and only focused on the first six Islamic universities in Indonesia), (e) Data extraction and study quality appraisal (e.g., the researchers focused on author's name, nationality, type of study, method, and major finding to extract data), (f) Synthesizing findings to draw meaningful conclusion(s) (e.g., this research, synthesized the primary idea integrating and implementing the paradigm in the Indonesian Islamic universities and gave a critical interpretation of the primary idea using opinions or other theories to find a distinctive meaning), and (g) Reporting the results for dissemination.

FINDINGS

The first six Indonesian Islamic universities, which have integrated religion into science, substantially refers to the same estuary. Namely, eliminating the truth dichotomy between revelation and science involves in the implementation of the educational process. However, each Indonesian Islamic university has a different knowledge metaphor of the concept 'knowledge integration.' Table 1 summarizes the results of the the concept 'knowledge integration' in the Indonesian Islamic universities and some countries.

Table 1. *Integrating religion into science for the Indonesian Islamic Universities and some countries*

No	Name, year, & Nationality	Methods	Major Findings
1	Rifai, Fauzan, & Bahrissalim, 2014, Indonesia.	Qualitative research approach using the evaluative research method	(1) State Islamic University of Syarif Hidayatullah, which integrates science into religion, includes 3 aspects--ontological integration, integration of knowledge classification, and methodological integration. (2) State Islamic University of Sunan Gunung Djati, whose knowledge integration follows the philosophy of the wheel, has 3 components--axle, wheel radius, and tire. The three components work simultaneously according to their respective functions. Therefore, knowledge integration, which links Qur'an verses with natural phenomena, covers ontological, epistemological, and axiological aspects. (3) State Islamic University of Sunan Kalijaga, which has interconnections with universal knowledge structures, doesnot separate religious and scientific areas from each other. Therefore, knowledge integration is carried out through two models, namely; (a) interconnection within the internal domain of Islamic knowledge, and (b) integrating Islamic knowledge into sciences to yield interconnections. (4) State Islamic University of Sultan Syarif Kasim, which combines science and religion, claims that justifying the Qur'an verses for every discovery in science and giving Islamic labels on scientific terms are not enough, but knowledge relations with metaphysical, religious and sacred texts are need. (5) State Islamic University of Maulana Malik Ibrahim, which combines religion and science within one unit, together and simultaneously originates both types of knowledge from different sources. The metaphor is used to explain this case. That is, a tree with sturdy, branchy, leafy, and fruitful is supported by strong roots. Strong roots not only functionally support tree trunks but also absorb soil content for tree growth. (6) State Islamic University of Alauddin, which combines science, religion, and

			technology, follows scientific integration.
2	Darda, 2016, Indonesia.	Qualitative research approach using literature review method	(1) State Islamic University of Sunan Gunung Djati, which integrates Islamic and general sciences within the concept 'integrated twin towers,' bridges them to realize an epistemological construction. Visually, curved lines at the top of interconnected scientific towers gave the birth to multidisciplinary Islamic sciences such as the sociology of religion, philosophy of religion, Islamic economics, Islamic politics, and others. (2) State Islamic University of Sunan Kalijaga, which develop an interdisciplinary approach through interconnection and interrelation (called integration-interconnection), has an effort to bring the religious sciences (Islam) and general sciences (science-technology and social humaniora) together. Implementing interconnections appears various forms as follows: (a) The sciences of religion (Islam) are met with science and technology. (b) the science of religion (Islam) is met with the social sciences or humanities. (c) technological sciences are met with the humanities social sciences. However, bringing all three together (religious sciences (Islam), science-technology, and social sciences-humanities) is the best way. The interaction amongst three disciplines will strengthen each other so that science scaffold of each will be stronger. (3) State Islamic University of Maulana Malik Ibrahim, which integrates science into an interdisciplinary approach through the metaphor sturdy tree, shady branches, fertile leaves, thick fruit and strong roots.' Tree roots describe the university's scientific foundation. Branches and twigs represent the scientific fields of this university, which are constantly growing and developing. Flowers and fruit illustrate the outputs and benefits of the university's educational efforts, namely: faith, piety, and science.
3	Iskandar, 2016, Indonesia.	Qualitative research approach using the evaluative research method	State Islamic University of Sunan Gunung Djati has not found an operational formula (at the leadership level) in implementing the concept of scientific integration in the curriculum. Since it needs to align the curriculum, its learning process has still relied on the creativity and innovation of individual lecturers in each faculty to apply scientific integration.
4	Anderson, 2002, China.	Qualitative research approach using literature review method	The Great Nest of Being (sensory, mental, spiritual) integrates modernity (art, morals, and science) within the differentiation. Understanding the relationship between science and religion is known as the terms 'eye of flesh' (monological), 'eye of mind' (dialogical), and 'eye of contemplation' (trains logical). Monological, which means a single person talking, reflects empirical science's approach to investigate objects that involve no discussion with the object. Dialogical, which means talking with someone, attempts to understand them. Translogical means transcending the logical, rational, or mental in general.
5	Alberts, 2010, Swedia.	Qualitative research approach using literature review method	The concept *livsåskådning* (view of life) has helped to find the abroad secular religious concept for religion education If *livsåskådning* is regarded as a superordinate concept, which includes religious and secular views of life, it can provide a valuable starting point for integrative religion education.
6	Loobuyck & Franken, 2011, Belgia.	Qualitative research approach using literature review method	Belgian Constitution makes a room for the integrated religion education as a new compulsory school subject in all schools.
7	Evers, 2015, German.	Qualitative research approach using literature review method	The interaction between science and religion in Germany emphasizes the importance of private institutes for the intersections amongst the academy, society, churches, and ethical challenges.

DISCUSSION and CONCLUSION

Discussion

Integrating science into religion in the Indonesian Islamic universities is using a knowledge metaphor (a combination of science and religion). Several countries, which follow the concept of view of life and integrate religion into their educational systems through compulsory subjects, strengthen the role of campuses in worship places. Integrating science into religion in the Indonesian Islamic universities provides a provosional approach of school subjects between science and religious.

The typology of relations between science and religion consists of four views: Conflict, Independence, Dialogue, and Integration (Barbour, 2002). Conflict typology, which puts science and religion in two opposing extremes, require people to choose one of them. Each collects adherents by taking opposite positions. Both of them recognize the validity and existency of science and religion (Russell, 2003). In independent typology, scientists are free to carry out their activities without the involvement of theological elements because the methods and subject matter are different. In dialogue typology, science is built on human observation and reasoning while theology is based on revelation.

An integrated paradigm between science and religion is of interest in the six Indonesian Islamic universities: (1) In the State Islamic University of Syarif Hidayatullah, Islam does not recognize the knowledge dichotomy because the source of all knowledge is God. Therefore, the developed knowledge paradigm meets science with the truth of revelation. (2) In the State Islamic University of Sunan Gunung Djati, teligion and science evolve along with knowledge dynamics and human thought. Likewise, science is founded from deep reasoning of the objects created by God, but God is himself as the sources of all knowledge. Combining the natural phenomena with the verses of the Quran creates a scientific paradigm that rests on revelation and rationality. (3) In the State Islamic University of Sunan Kalijaga, Islam develops a universal knowledge and does not recognize the dichotomy amongst religious verses, natural phenomena, social sciences, and ethical-philosophical knowledge. (4) In the State Islamic University of Sultan Syarif Kasim, the oriented science equally combines knowledge with natural science, society, and philosophical ethics. (5) In the State Islamic University of Maulana Malik Ibrahim, Al-Quran and Hadith are positioned in the development of science as sources of revelation while the results of observation, experimentation and logical reasoning are positioned as sources of natural phenomena. Thus, various sources of knowledge are found in the sources of the Quran and Hadith. (6) The State Islamic University of Alauddin keeps the Quran and Hadiths as a center of knowledge. Both of these sources inspire knowledge in the next layer, namely classical Islamic sciences, natural sciences, social sciences, humanities, and contemporary sciences.

The integration concept in the six Indonesian Islamic Universities has still been normative and cannot be measured operationally. This concept, which can be operationalized to design curriculum for each Islamic university, may be implemented for graduate profiles. Also, it may facilitate students' achievement levels by integrating strategies and media into the knowledge measurement tools. Agus Purwnto's thoughts on the epistemology methodology of Islamic science are: (1) the Qur'an, hadith and nature are the basic foundation for building science. (2) the process synthesizes scientific integration, understanding revelation and other scientific treasures. (3) a new paradigm of science is paradigmatic of revelation (Yusuf, 2017).

Integrating learning materials from various subjects into themes or several subjects from various disciplines can eliminate subject boundaries(Nasution, 1993). The integrated curriculum departs from the concept of unity, which is meaningful (which has certain benefits) and structured (assuming that every part of the unity is located and functioned in a certain structure) (Hamalik, 2011). Child education forms the overall totality of the child and

cannot separate from the child's cognitive, affective, and psychomotor aspects. Therefore, the integrative curriculum intends to educate a person, who potentially livess in a society. For xxample, Turkish education system integrates science, technology, engineering, and mathematics (STEM) approach into science curriculum and science learning (Altan, & Ercan, 2016; Ata Akturk, Demirca, Senyur, & Cetin, 2017).

In view of Fogarty (1991), ten integrated learning models are available: (1) fragmented model; (2) connected model; (3) nested model; (4) sequenced model; (5) shared model; (6) webbed model; (7) threaded model; (8) integrated model; (9) immersed model; and (10) networked model. An integrated curriculum can be done in several ways:

> First, a fusion of several topics into one, for example, topics on the environment, social responsibility and community behavior combined into one in geography studies. Second, to include the scientific sub-discipline into its parent into one unit (within one subject), for example, physics, mathematics, chemistry, and biology are included in the pure science group. Third, by connecting one topic with other knowledge that is being studied by students but different hours (multidisciplinary), for example, when certain hours students learn about living things, the teacher can ask students to stay alert or express the knowledge gained in other lessons which are related. Fourth, study one topic by using various perspectives at the same time (interdisciplinary), for example, environmental topics are explained through the perspective of culture, geography, biology, social, religion and so on. The fourth step tends to put forward a comparative perspective. Fifth, Transdisciplinary (linking a topic with values, events, current issues that are developing) (Drake,1998, p. 18-23)

Recently, the Indonesian Islamic universities have proportionally distributed science and religion to the study materials. But, both of science and religion have not been bounded and studied comprehensively by the distinction course. During this time, the Indonesian Islamic Universities have overloaded compulsory undergraduate courses from the standard amount of credit by challenging an integrated science and religion curriculum. Educators find the overloaded syllabus difficult for conducting extra classes to cover all the subjects (Humaid, Anwar, Oussama, Anwar, Abderrahim, & Anita, (2019).

Understanding science does not integrate religious values into the profile of science understanding in Islamic universities. That is, this is the same with public universities. Indeed, graduates of the Islamic universities are only distinguished by a deeper religious understanding. They formulate the concept of integration into philosophy, methodology, subject matter, and strategy levels. Since the concept of integration that the built has still been normative, its achievement level(s) cannot be measured. The expected integration between the Islamic religious education and Science/Technology provides an interspersed Islamic religious education material with science/technology one(s). But, the existence of real integration explains how an Islamic religious education material supports the facts of science and technology (Rusdiana, 2014).

Integration religion into science needs basic knowledge to achieve a meaning of the paradigm. Making an integrative curriculum from science and religion is impossible unless the basic materialis understood. Therefore, the study material of the paradigm should be balanced. In view of Fogarty (1991) and Drake (1998), an interdisciplinary approach is a suitable way to integrate science into religion. This concept should not only be normative but also be implemented in an integrated curriculum of the Indonesian Islamic universities. The Indonesian Islamic universities have been formulated such knowledge metaphor as science tree, spider networks, and wheels to integrate science into religion.

The integrated distinction between science and religion has not been implemented in a comprehensive study at the Indonesian Islamic universities. An integrative science and

religion (course distinction) should be formulated in the Islamic universities to differentiate them from public ones. The course distinction in the integrated curriculum perspective should combine the science and religion paradigms. The course distinction should be used as the content of the core curriculum to achieve the content of the religious and general curriculum. The distinction course should be formulated in the compulsory courses of the study program after the basic science and religion courses are delivered.

Distinction courses are positioned as the distributed core of the science and religion course (see Figure 1).

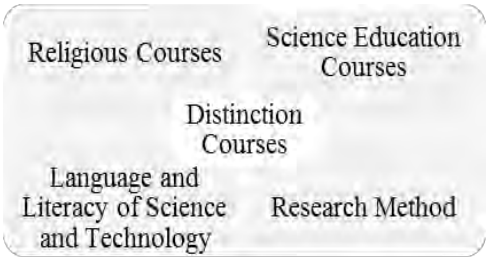

Figure 1. A Distribution Chart for the Integrated Science and Religion Courses

To get a comprehensive study for the integrated science and religion, science courses should be supported by the language, scientific literacy, and research methods, which are concentrically distributed to the distinction courses. These distinction courses should be coherent with central learning components of the curriculum or distinction courses (Sand, Davis, Lammel, & Stone, 1960). Howkins (1994), who developed the curriculum model, claims that the community provides the central focus to the course. In this case, the distinction courses act as the community within the integrated science curriculum. Besides, the Medical School of the University of Barcelona, which implemented the integrated curriculum of preclinical and clinical in 1994, distributed the content through horizontally-integrated approach based on the body systems (Carreras,1997). In this context, the body systems act as the distinction courses within the integrated science curriculum.

Conclusion

In light of the results and related arguments, it can be concluded that the normative integrated curriculum concept formulated by the Indonesian Islamic universities should be carried out within an integrated interdisciplinary approach in a connected model. The integrated curriculum should concentrically distribute science and religion to the distinction courses.

REFERENCES

Alberts, W. (2010). The academic study of religions and integrative religious education in Europe. *British Journal of Religious Education*, *32*(3), 275-290. doi: 10.1080/01416200.2010.498621.

Aminuddin, L. H. (2010). Integrasi ilmu dan agama: Studi Atas Paradigma Integratif Interkonektif UIN Sunan Kalijaga Yogjakarta. *Kodifikasia: Jurnal Penelitian Islam*, *4*(1), 1-34. doi : 10.21154/kodifikasia.v4i1.746.

Anderson, B. J. (2002). Integrating science and religion-implications for the scientific understanding of Chinese medicine. Part I: An essay review of The Marriage of Sense and Soul: Integrating Science and Religion, by Ken Wilber. *Clinical Acupuncture and Oriental Medicine*, *3*(1), 51-58. doi: 10.1054/caom.2001.0121.

Altan, E. B., & Ercan, S. (2016). STEM education program for science teachers: Perceptions and competencies. *Journal of Turkish Science Education*, *13*(special), 103-117. doi: 10.12973/tused.10174a.

Ata Aktürk, A., Demircan, H. Ö., Şenyurt, E., & Çetin, M. (2017). Turkish early childhood education curriculum from the perspective of STEM education: A document analysis. *Journal of Turkish Science Education (TUSED)*, *14*(4). doi: 10.12973/tused.10210a.

Bagir, Z. A. (Ed.). (2005). *Science and Religion in a Post Colonial World: Interfaith Perspectives*. Atf Press.

Barbour, I. (1971). *Issues in Science an Religion*. New York: Harper and Row Publisher.

Brooke, J. H. (1991). *Science and religion: Some historical perspectives*. Cambridge University Press.

Burtt, E. A. (2014). *The metaphysical foundations of modern physical science: A historical* and *critical essay*. Routledge.

Boyer, P. (2008). *Religion explained*. Random House.

Carreras, J. (1997). The teaching of biochemistry at the faculty of medicine at the University of Barcelona: A new integrated curriculum. *Biochemical Education*, *25*(2), 81-82.

Dagher, Z. R., & BouJaoude, S. (1997). Scientific views and religious beliefs of college students: The case of biological evolution. *Journal of Research in Science Teaching*, *34*(5), 429-445. doi: 10.1002/(SICI)1098-2736(199705)34:5<429::AID-TEA2>3.0.CO;2-S.

Darda, A. (2016). Integrasi ilmu dan agama: perkembangan konseptual di Indonesia. *At-*Ta'dib, *10*(1), 33-46. doi: 10.21111/at-tadib.v10i1.323.

Drake, S. M. (1998). *Creating an integrated curriculum: Proven ways to increase student learning*. Corwin Press, Inc., Thousand Oaks, CA.

Evers, D. (2015). Religion and science in Germany: with Ernst M. Conradie and Cornel W. du Toit,"Knowledge, values, and beliefs in the South African Context since 1948: An overview"; Ignacio Silva,"Science and religion in Latin America: Developments and prospects"; Dirk Evers,"Religion and science in Germany"; and Jianhui Li and Zheng Fu,"The craziness for extra-sensory perception: Qigong fever and the science–pseudoscience debate in China.". *Zygon*, *50*(2), 503-533. doi: 10.1111/zygo.12172.

Esbjörn-Hargens, S., & Wilber, K. (2006). Toward a comprehensive integration of science and religion: A post-metaphysical approach. In *The Oxford handbook of religion and science*. doi: 10.1093/oxfordhb/9780199543656.003.0032.

Fakhry, J. (2010). Sains dan Teknologi dalam al-Qur'an dan Implikasinya dalam Pembelajaran. *Ta'dib: Journal of Islamic Education (Jurnal Pendidikan Islam)*, *15*(01), 121-142.

Fogarty, R. (1991). *How to integrate the curricula*. New York: The mindful school.

Giere, R. N. (2010). *Explaining science: A cognitive approach*. University of Chicago Press.

Hafez, S. (2011). *An Islam of her own: Reconsidering religion and secularism in women's Islamic movements*. NYU Press.

Hamalik, O. (2011). *Dasar-dasar pengembangan kurikulum*. Bandung: Remaja Rosdakarya.

Haneef, S. S. S. (2011). Integration of scientific knowledge into Islamic juridical work the search for a unified legislative framework. *Revelation and Science*, *1*(2), 62-74.

Humaid, A. S. M., Anwar, L. S., Oussama, S., Anwar, L. T., Abderrahim, B. E., & Anita, L. (2019). Determining students' intention: The role of students' attitude and science curriculum. *Journal of Turkish Science Education*, *16*(3), 314-324. doi: 10.12973/tused.10284a.

Hooykaas, R. (2000). *Religion and the rise of modern science* (No. 168). Vancouver Canada: Regent College Publishing.

Howkins, E. (1994). Designing an integrated curriculum with a common core for an inter-disciplinary course in community nursing. *Nurse education today*, *14*(5), 380-387. doi: 10.1016/0260-6917(94)90033-7.

Iskandar, S. (2016). Studi AlQuran dan integrasi keilmuan: Studi kasus UIN Sunan Gunung Djati Bandung. *Wawasan: Jurnal Ilmiah Agama dan Sosial Budaya*, *1*(1), 86-93. doi: 10.15575/jw.v1i1.580.

Kant, I. (2004). *Immanuel Kant: Prolegomena to any future metaphysics: That will be able to come forward as science: With selections from the critique of pure reason*. Cambridge University Press.

Kitcher, P. (2003). *Science, truth, and democracy*. Oxford University Press.

Khoirudin, A. (2017). Sains Islam berbasis nalar ayat-ayat semesta. *At-Ta'dib*, *12*(1), 195-217. doi: 10.21111/at-tadib.v12i1.883.

Kuntowijoyo. (2006). *Islam sebagai Ilmu*. Yogyakarta: Tiara Wacana.

Loobuyck, P., & Franken, L. (2011). Towards integrative religious education in Belgium and Flanders: Challenges and opportunities. *British Journal of Religious Education*, *33*(1), 17-30.

Malinowski, B. (2014). *Magic, science and religion and other essays*. Read Books Ltd.

Muspiroh, N. (2013). Integrasi nilai Islam dalam pembelajaran IPA (perspektif pendidikan Islam). *Jurnal Pendidikan Islam*, *28*(3), 484-498. doi:10.15575/jpi.v28i3.560.

Nasution, S. (1998). *Kurikulum dan Pengjaran*. Jakarta: Bina Akasara.

Nasution. (1993). *Pengembangan kurikulum. Bandung*: Citra Aditya Bakti.

Nelson, J. M. (2009). Science, Religion, and Psychology. In *Psychology, Religion, and Spirituality* (pp. 43-75). Springer, New York, NY.

Nord, W. A. (1999). Science, religion, and education. *Religion & Education*, *26*(2), 55-66.

Plantinga, A. (2011). *Where the conflict lies: Science, religion, and naturalism*. OUP USA: Oxford University Press.

Popay, J., Roberts, H., Sowden, A., Petticrew, M., Arai, L., Rodgers, M., ... & Duffy, S. (2006). Guidance on the conduct of narrative synthesis in systematic reviews. *A product from the ESRC methods program Version*, *1*, b92.

Popper, K. (2014). *Conjectures and refutations: The growth of scientific knowledge*. Routledge.

Purwaningrum, S. (2017). Elaborasi ayat-ayat sains dalam Al-Quran: Langkah menuju integrasi agama dan sains dalam pendidikan. *INOVATIF: Jurnal Penelitian Pendidikan, Agama dan Kebudayaan*, *1*(1), 124-141.

Rifai, N., Fauzan, F., & Bahrissalim, B. (2014). Integrasi keilmuan dalam pengembangan kurikulum di uin se-indonesia: Evaluasi penerapan integrasi keilmuan uin dalam kurikulum dan proses pembelajaran. *TARBIYA: Journal of Education in Muslim Society*, *1*(1), 13-34.

Rusdiana, A. (2014). Integrasi pendidikan agama islam dengan sains dan teknologi. *Istek*, *8*(2), 123-143.

Rolston, H. (2006). *Science and religion: A critical survey*. USA: Templeton Foundation Press.

Roth, W. M., & Lucas, K. B. (1997). From "truth" to "invented reality": A discourse analysis of high school physics students' talk about scientific knowledge. *Journal of Research in Science Teaching*, *34*(2), 145-179.

Russell, C. A. (2003). The conflict between science and religion. *The History of Science and Religion in the Western Tradition*. New York: Routledge.

Sand, O., Davis, D., Lammel, R., & Stone, T. (1960). Chapter III: Components of the Curriculum. *Review of Educational Research*, *30*(3), 226-245.

Stenmark, M. (2017). *Scientism: Science, ethics and religion*. Routledge.

Van Bruinessen, M., & Howell, J. D. (Eds.). (2007). *Sufism and the modern in Islam*. United Kingdom: Ib Tauris.

Warren, E. S. (1998). The marriage of sense and soul: Integrating science and religion. *Constructivism in the Human Sciences*, *3*(2), 189.

Wilber, K. (1999). *The marriage of sense and soul: Integrating science and religion* The United States: Random House.

Woodford, K. (2003) *Cambridge advanced learner's dictionary.* USA: Cambridge University Press.

Yusuf, M. Y. (2017). *Epistemologi sains islam (studi pemikiran agus purwanto dalam buku ayat-ayat semesta dan nalar ayat-ayat semesta)*.Yogyakarta: UIN Sunan Kalijaga.