THE CHALLENGE OF SCIENCE IN ISLAMIC EDUCATION IN ERA 4.0

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ABSTRACT

Critical analysis of the challenges of science in Islamic education in the 4.0 era, the goal is to realize superior knowledge in Islamic education, especially in the era of disruption (4.0), so that in this study etymologically it is necessary to uncover and explore the views of the reformers. Islam in responding to challenges in Islamic education in the 4.0 era. This research concludes that in realizing superior knowledge in Islamic education, especially in the era of disruption (4.0), the solution is, the knowledge needs to be adapted to the current developments, this is because science is 1) unraveling, 2) assist (supporters), in realizing the development of superior Islamic Education through the arguments contained in the Qur'an and Hadith. The real example is the establishment of formal schools, from elementary school (elementary school) to Islamic boarding school-based universities that exist in Indonesia. In addition, in order to develop superior science, it can be done through an alternative paradigm of integralism, which is integrated through religious sciences with non-religious sciences which can be done by Islamic boarding school-based institutions. As a result, the relevance of the views of Islamic reformers to the challenges of science in Islamic education in Era 4.0 is relevant, where this can be implemented through the development of superior Islamic education through the arguments contained in the Qur'an and Hadith. In addition, in forming a complete generation and competitive superior human beings, the concept of Islam demands to always think, be innovative, have character, be independent, and religious in facing Era 4.0, where humans are required to be fast, precise, effective and efficient in carrying out life activities..
Keywords: *Epistemology of Islamic Education, Challenges of Science, Era 4.0*

ABSTRAK

Analisis Analisis Kritis terhadap tantangan ilmu pengetahuan dalam pendidikan islam di era 4.0 tujuannya adalah dalam rangka mewujudkan ilmu pengetahuan yang unggul dalam pendidikan islam, khususnya di era disrupsi (4.0), sehingga dalam kajian ini secara etimologis maka perlu

menguak serta menggali tentang bagaimana pandangan para tokoh pembaharu islam dalam menjawab Tantangan dalam pendidikan islam di era 4.0. Penelitian ini disimpulkan bahwa dalam mewujudkan ilmu pengetahuan yang unggul dalam pendidikan islam, khususnya di era disrupsi (4.0), sebagai Solusinya adalah, maka ilmu pengetahuan tersebut perlu disesuaikan dengan perkembangan zaman yang ada, hal ini dikarenakan ilmu pengetahuan bersifat 1) mengurai, 2) mendampingi (pendukung), dalam mewujudkan pembangunan Pendidikan Islam yang unggul melalui dali-dalil yang terdapat dalam Al-Qur'an dan Hadits. Contoh riilnya adalah pendirian sekolah-sekolah formal, dari tingkat SD (sekolah dasar) hingga Perguruan tinggi berbasis pesantren yang eksis di Indonesia. Selain itu dalam rangka mengembangkan ilmu pengetahuan yang unggul, dapat dilakukan melalui paradigma alternatif integralisme, yang diintegrasikan melalui ilmu-ilmu agama dengan ilmu-ilmu non-agama yang mana hal dapat dilakukan oleh lembaga-lembaga Sekolah berbasis pesantren. Alhasil Relevansi Pandangan Para Tokoh Pembaharu Islam terhadap Tantangan Ilmu Pengetahuan dalam Pendidikan Islam di Era 4.0 adalah relevan, dimana hal ini dapat diimplementasikan melalui pembangunan Pendidikan Islam yang unggul melalui dali-dalil yang terdapat dalam Al-Qur'an dan Hadits. Selain itu dalam membentuk generasi seutuhnya dan manusia unggul yang berdaya saing, maka konsep Islam yang menuntut untuk selalu berfikir, inovatif, berkarakter, mandiri, dan religious dalam menghadapi Era 4.0, dimana manusia dituntut serba cepat, tepat, efektif dan efisien dalam melakukan aktivitas kehidupan.

Kata Kunci: *Epistemologi Pendidikan Islam, Tantangan Ilmu Pengetahuan, Era 4.0*

INTRODUCTION

Discussing the philosophy of science, you will definitely encounter the term epistemology, because humans not only need basic needs, but humans also need information to find out the conditions in their surrounding environment (Haetami, 2017). In an effort to obtain information, humans often communicate or in other ways that can be used, and one of the information obtained from that communication is knowledge. Knowledge is indispensable today for human life because it can provide enormous benefits for this life. As for humans in seeking that knowledge, they often have to study Epistemology, such as wanting to know how a person's thinking model is, whether it is rational or empirical (Vera & Hambali, 2021). Epistemology today has been used as a branch of science rather than philosophy where this science has a fairly important position in science, including in the world of Islamic education. this is as research conducted by (Razaq & Umiarso, 2019), where he revealed that related to scientific epistemology, nowadays it is necessary to be designed to understand the theories, concepts, and propositions of the Islamic education system. Scientific epistemology, which contains a lot of philosophical-verification logic and also intuitive-revelation logic, which is as enshrined in the Qur'an and al-Hadith (sunnah). This epistemology has unified/dimensionally-critical, empirical, intuitive, and prophetic (illahiyah/prophetic) and is also

called prophetic criticism. so that with the above term, the implication is that in the world of Islamic education there will be a view which states that there is an integrative from the physical side (profane) and also in the form of metaphysical (transcendental).

The European nation or what we often call the Western World, has now experienced very rapid modernization and progress because it has a strong epistemological building (Rosana, 2015). Approaches in western epistemology are built on rationalist and empirical grounds, as the basis for building a science or science. Meanwhile, Muslims are currently still lagging behind in all fields, when compared to Western nations (www.cnnindonesia.com, 2021). In addition, Muslims do not formulate their own epistemology, but they take epistemology from the West (Nurcholis, 2021). Which in this case there is a separation between Islam and science, which can lead to a decline in civilization against Muslims. Apart from that, further integration can lead to the achievement of a new and more perfect civilization at the same time (meaning that human morals will become more dignified). Epistemology has several negative impacts that endanger Islamic culture and beliefs. Therefore, every Western epistemology that enters Islam needs a filter. Because Western epistemology has a very broad scope, the filter in Islam must also be broad. For example, in terms of the Impact Between Epistemology and Functional Librarians as research by (Puspitasari, 2010) that the activities carried out must be programmed, librarians as the frontline need to study philosophy, especially epistemology in order to provide good service to the community.

That science in Islam has universal, empirical and metaphysical dimensions that are different from knowledge born from the Western worldview which is only limited to rational and empirical areas. The concept of science in Islam is an integral part of the Islamic worldview or way of life, so that it has its own characteristics that make it different from concepts in other civilizations. Science according to the Islamic view of life not only covers the substance of knowledge, but also becomes an important element in civilization. A Muslim should stick to the Islamic scientific tradition and not be dazzled by the Western scientific tradition even though it looks more attractive. The position of science is very urgent in Islam, as the views of several figures such as Ibn Khaldun, Imam al-Ghazali, Syed Muhammad Naquib al-Attas provide several characteristics of the classification of science to place which one has more priority, which in the future is related to how the object of knowledge is. in Islam is determined. So it can be seen that science in Islam does not only include the sciences of faith and sharia, but also there are a number of other sciences such as physics, biology, and so on that need to be studied. As for how to obtain this branch of knowledge, each has its own approach and method, both in the form of internal and external senses, khabar, shaadiq, and intellect (Khalid et al., 2020).

Thus, regarding the existence of a science in terms of Islam, in which Islam contains a universal dimension (needs many interpretations), which is in stark contrast to the knowledge born of scientific experience in the Western world, where the west views science only with rational and empirical science alone. So that what is in the concept of science in the

Islamic world, will be used as an integral part of the view of life in Muslim society, so that the sciences that exist in Islam, have many characteristics of their own which in terms of differentiating them from other science concepts are: influenced by other civilizations. Meanwhile, regarding science, according to some Muslim views, it is not only related to the substance (content) that exists in science, however, science in Islam is an important element in terms of civilization that leads to the development of science. Today for a Muslim, he must adhere to the tradition of an Islamic scholarship, and it is necessary to pay attention also if a Muslim is already established in science (capable of knowledge), then he needs to pay attention again and need to be careful so that the Muslim does not get caught up in the existence of the tradition. science in the Western world, which incidentally is indeed the western world is more interesting in terms of science. The position of science today is also very urgent (important) in order to expand the repertoire of Islam, it is evident that there are several views of Islamic figures, such as Ibn Khaldun, and Imam al-Ghazali, and Syed Muhammad Naquib al-Attas, in which these figures This Muslim gives a lot of characteristics (way of view) in classifying a science, where this is done without determining the direction (not saklek) is not prioritizing the science, where science is not steady, meaning that it needs development, where today Islamic knowledge is not only discuss the science of aqidah and sharia alone, but Islam also needs to synergize with other sciences such as science (physics, biology). As for the way in order to obtain this branch of knowledge which is used as a scientific development, then each of them has become a necessity in acquiring a knowledge through various approaches and separate ways/strategies/methods to achieve this knowledge, As a result, Islam needs to use their five senses. , such as obtaining a knowledge by seeking from various Khabar (news), seriousness in seeking knowledge, and also using the minds of the Muslim people (Khalid et al., 2020).

That not all knowledge can be called science, because science is knowledge how to get it must meet certain conditions, so that knowledge can be called science listed in what is called the scientific method. "Method" is a procedure or way of knowing something, which has systematic steps. The scientific method is a procedure for obtaining knowledge which is called science. Methodology is the study of the rules contained in the scientific method. This methodology is philosophically included in what is called epistemology (Swantara, 2015, p. 1) Departing from the problem of how this epistemology is used as a thought that needs to be developed scientifically. The view (Hidayat, 2016) in his journal revealed that the Epistemology of Islamic Education is an effort, method, or steps to gain educational knowledge based on the Qur'an and As-Sunnah. Furthermore, in the Concept of Islamic Religious Education Imam Al-Ghazali's perspective that science is a source for obtaining happiness in the world and the hereafter. With knowledge, humans will become noble and honorable creatures compared to other creatures. (Putra, 2016) Furthermore, the Concept of Islamic Education According to Imam Al-Ghazali as researched by (Azhari & Mustapa, 2021) that Al-Ghazali's view, Islamic education is education that strives in the formation of perfect human beings, both in this world and in

the hereafter. According to Al Ghazali, humans can achieve perfection if they want to seek knowledge and then practice fadhilah through the knowledge they learn. According to Al Ghazali, the main goal of Islamic education is to be taqarrub to Allah the Creator, and the most perfect human in his view is a human who always draws closer to Allah. The goal seems religious and moral, without ignoring worldly problems. The method used to classify al-Ghazali is divided into two parts: First, the special method of religious education, this special method of religious education has an orientation towards knowledge of aqidah because religious education is in reality more difficult than other education, because religious education involves intuitive problems and focuses more on the formation of the personality of students. Second, the special method of moral education, Al-Ghazali said: Just as a doctor, if he gives his patient only one kind of medicine, it will kill most of the sick, so does the teacher, if he shows the students the way with only one kind of practice, it will destroy their hearts.

Science is a conscious effort to investigate, discover, and improve human understanding of various aspects of reality in the human world. These aspects are limited in order to produce definite formulations. Science provides certainty by limiting the scope of its view, and the certainty of science is obtained from its limitations. Science is not just knowledge but summarizes a collection of knowledge based on agreed theories and can be systematically tested with a set of methods recognized in a particular field of science. From a philosophical point of view, science is formed because humans try to think further about the knowledge they have. Science is a product of istemology. Science is the whole conscious effort to investigate, discover, and improve human understanding of various aspects of reality in the human world. These aspects are limited in order to produce definite formulations. Science provides certainty by limiting the scope of its view, and the certainty of science is obtained from its limitations (Mujib, 2019).

Ontologically, science is not an abstraction of the object being observed, but the essence of knowledge is the divine light that radiates to the soul (al-ruh divineyah) that exists in all humans. Epistemologically, knowledge can be obtained through optimization of reason. Therefore, mujahadah and riyadhah are tasks that must be carried out by students in order to secure the knowledge of mukasyafah. Axiologically, science is a means to get closer to Allah SWT, to obtain happiness in this world and the hereafter. That is why the profile of the learning outcomes of Sufi education is that of the scholars of the hereafter; namely scholars who have the following characteristics; 'abid, zahid, 'alim, faqih and mukhlish (Fadhil & Sebgag, 2021). Reform in Islam is not in matters concerning the basic or fundamental teachings of Islam. The Islamic Reformation is not to change, modify, or revise Islamic values and principles to suit the tastes of the times, but rather to relate to the interpretation or interpretation of basic teachings to suit the needs of development and the spirit of the times. Related to this explanation, it can be understood that reform is the actualization of religious teachings (Islam) in social development. Reform efforts were pioneered by, among others, Muhammad Ali Pasha, Rifa'ah Badawi at-

Tahtawi, Jamaluddin al-Afgani, Muhammad Abduh and Muhammad Rasyid Rida with their respective ideas about education (Fauzi, 2017).

Regarding the Islamic movement, which is a phenomenon that reflects the spirit of its era. The cultural and social environment encourages a person to do something and build networks, formulate problems, find solutions, and take social and cultural reform actions. External factors which are the determining factors for the emergence of the transformation process can take place more quickly than internal factors. The role of the mass media is very supportive of the success of the socialization of new ideas both on a national and international scale. The Islamic Reform Movement has succeeded in showing its physical success. Educational institutions, social service facilities, such as hospitals, office buildings, and other physical infrastructures, have been successfully realized. The effectiveness of the Reformation Movement which has lasted for almost a century still poses a big question, namely how far this movement has succeeded in responding to the challenges of the times. The Indonesian state, which is currently experiencing a leadership crisis, has not been able to present figures who can provide examples (Padmo, 2012). The rapid changes that occur in the midst of social life in this era of globalization are often not balanced with efforts to reform thoughts among Muslims. Apparently, this is due to the belief that the works of thought of past scholars are considered sacred, have answered every challenge that has existed throughout Muslim history and are therefore considered final. Therefore, any attempt to criticize it is considered "academic treason" and the perpetrators can even be accused of apostasy. Finally, there is concern among academic practitioners to carry out reforms that result in stagnation of thought. This paper is an attempt to discuss the problems of reforming Islamic thought in Indonesia in more detail and solutions to these problems (Asyari, 2011).

While the view (Niamah, 2021) is that the Al-Ghazali Perspective of Islamic Education Paradigm so that al-Ghazali's offer of Islamic education paradigm becomes the main reference in developing how the conceptual foundations of science, education, and religiosity are constructed in the epistemological building of Islamic education. In this paper, we will reveal the conceptual and paradigm offer of Islamic education from al-Ghazali's perspective. The main locus of al-Ghazali's paradigm of Islamic education is the question of the relationship between education and spiritual spirit. This paradigm is used as a methodological step of learning in the hope that Islamic education is able to elaborate and adapt to the expanse of globalization. Finally, the critical focus of this paradigm becomes a basic foundation in building an academic tradition in Islamic education. Another thing Ibn Khaldun and al-Ghazali are two Islamic thinkers who are very famous among the wider community, from Muslim thinkers to non-Muslims. The thoughts of Ibn Khaldun contained in his book, namely the Muqaddimah, have become a reference for many people in establishing the ideal Islamic education system. The style of his thought that experienced a mix between al-Ghazali and Ibn Rushd made him have a new thought, namely rationalist-sufistic. In this thought, Ibn Khaldun proportionally

occupied revelation equal to or equal to the ratio. Then, al-Ghazali's thoughts that have been poured in each of his works, made many other thinkers, both Muslim and non-Muslim, use it as a reference and also translate his work in their language. His style of thought in the form of Sufism influenced his works a lot and also influenced his thoughts on the ideal education according to him. The two thoughts of these figures when associated with Islamic education in Indonesia, both in state madrasas or in Islamic boarding schools, still have compatibility and relationships. This is because teachers or kyai in Indonesia also use the rationale of the two figures in educating their students or students (Khumaidah & Hidayati, 2021). From the above background, this research seeks to uncover and explore: 1) How is a critical analysis of the challenges of science according to the views of Islamic reformers?; 2) how is the relevance of the views of Islamic reformers to the challenges of science in Islamic education in the 4.0 era?.

RESEARCH METHOD

In this study, researchers used a literature study to uncover and explore the challenges of science in Islamic education in the 4.0 era where the goal is to realize superior knowledge in Islamic education, especially in the era of disruption (4.0). In the context of developing superior Islamic education in the 4.0 era, the researchers elaborated on the development of Islamic education with the views of Islamic reformers. So that the formulation of the problem in this study is how to critically analyze the challenges of science in Islamic education in the 4.0 era?. This research belongs to the category of library research with data sources from various books, journals, the internet, and other sources relevant to the challenges of science in Islamic education, especially in the 4.0 era as it is today.

DISCUSSION

A. Critical analysis of the challenges of science according to the views of Islamic reformers

Related to Epistemology, which comes from Greek, namely episteme which means knowledge, and logos which means science/talk/word that translates "study" or "science". In simple terms, epistemology is a theory of knowledge. Epistemology is a science that studies critically, normatively, and evaluatively about the process of how knowledge is obtained by humans. Epistemology is also called a theory of knowledge because it examines all the benchmarks of the human sciences, including logic and the obvious human sciences, which are the basis and foundation of all science and knowledge. So epistemology can be defined as a branch of philosophy that studies the origin or source, structure, method, and validity (validity) of knowledge. Epistemology can be interpreted as a true theory of knowledge (Theory of knowledges). In the West, epistemology became a new discipline in Europe, pioneered by Descartes (1596-1650), and developed by the philosopher Leibniz (1646–1716), then refined by John Locke in England. Epistemology has developed since the renaissance idea was raised.

Nowadays, it is related to criticism of epistemology which has been influenced and biased by the West, so when viewed from the discriminatory side of Western epistemology, it cannot be separated from modernity which is closely related to the progress and novelty that influences it. Such character in the end discriminates the way of knowing from traditional society or certain ethnic groups. Second, the discourse of development is a way to develop a Western-biased epistemology. This discourse has become a tool to regain control of Southern countries or former colonies through epistemological justification that is typical of the West. So that nowadays it is related to the critical attitude of scientists that needs to be presented to be able to see other epistemological variants that are in accordance with the context of a particular society, of course, without simply rejecting all Western scientific standards (Pinem, 2020). In the field of science, the epistemology of bayani, irfani and burhani in Al-Jabiri's thinking is a methodological model of text-based thinking. Irfani is a methodological model of thinking that is based on an approach and direct experience of religious spiritual reality. While burhani is a methodology of thought that is not based on text or experience, but on the basis of chaos logic. At a certain stage, the existence of sacred texts and spiritual experiences can only be accepted if according to logical rules. For al-Jabiri, burhani epistemology must be an epistemology that is appropriate to be applied in society to reduce the habit of romanticism seeking knowledge through illumination. In the context of the conflict, Burhani is very relevant in resolving conflicts or building peace (Hadikusuma, 2018).

This is in line with the opinion (Purwati & Devi, 2020) that the innovation of learning moral aqidah in Islamic education in schools serves to overcome the growth and development of children. While the direction and purpose of Islamic education is to foster students from an early age with integrity and national insight, so it is necessary to increase their efforts in the field of science. Several scientific aspects that need attention include: updating the epistemological method of the history of Islamic civilization and learning from related curriculum organizations. Regarding the reform of the epistemological paradigm of Bayani's reasoning, it aims to become Abid al-Jabiri's trilogy of reasoning, namely Bayani's reasoning, Irfani's reasoning and Burhani's reasoning in learning Aqidah Akhlak. All three are very linear reasoning that goes hand in hand but still only bayani is the main priority. And the third circle that connects all three and all reasoning can complement each other. So that in accordance with the value of global issues in the Akhlak aqidah learning material, as well as the progress of the times and the complexity of the problems faced by mankind, especially Muslims, these issues must be addressed locally but globally. This is a response to the progress of modern architecture, so that Islamic religious education in schools is very necessary and needs to be considered.

In addition, in terms of the scientific method according to the views of Islamic reformers, modern science does not conflict with Islam, which is actually true. Natural law is God's creation and revelation also comes from God. Since both are from Allah, modern science, which is based on natural law, and Islam in fact, which is based on revelation, cannot and cannot be

contradicted. Islam must be in accordance with modern science and modern science must be in accordance with Islam. In the golden age of Islam, science developed under the auspices of the Islamic governments that existed at that time. Therefore, science does not conflict with religion, so as Muslims we must use our minds as well as possible, it is obligatory for every Muslim. Science is one of the causes of the progress of Muslims in classical times and is also one of the causes of the progress of the West today. Muhammad Abduh said, in order to achieve his lost progress, Muslims now must return to study and prioritize the issue of science. Therefore, Muslims must first be freed from the ideology of jumud, taklid, return to ijtihad and return to pure Islam (Bahri, 2020).

The epistemology of Islamic education is a series of ways to find theories and concepts of Islamic education, so that it can solve various problems of Islamic education, of which there are at least four epistemological approaches in Islamic education: empirical, scientific, philosophical, and religious (theological). In addition, the epistemological method of Islamic education, which includes rational, intuitive, dialogical, comparative, critical, and 'ibrah is becoming urgent today, where the urgency of the epistemology of Islamic education in developing Islamic education in the modern era is filtering Western thought or shielding from the influence of Islam. Western epistemology, reforming Islamic education without eliminating idealism (characteristics of Islam), integration of Islamic education with the national education system (Makki, 2019). sunnah. The influence of Western education on Islamic education is that it is only physically advanced, but spiritually dry. The measure of educational outcomes is only seen from how much knowledge is absorbed by students, but not on the self-awareness of students to act in accordance with the knowledge they have. The Islamic education system must place the Qur'an and As-Sunnah as a guide in which direction the educational process is moved. The renewal of the epistemology of Islamic education should continue to be developed to improve the quality of human resources. Islamic education must be able to produce scientists who think creatively, authentically and originally, not by remembering or repeating but by thinking. In an effort to build the epistemology of Islamic education, experts and policy makers in Islamic education should carry out a comprehensive renewal of the methods or approaches used to build Islamic education (Hidayat, 2016).

Thus, the epistemological foundation of science, which is called the scientific method, is used as a method used by science in order to compile correct (concrete) knowledge. Where the scientific method is used as a procedure in obtaining knowledge which is called science. So, science is knowledge obtained through the scientific method. In this case, Islamic reformers such as Fazlur Rahman as research launched by (Najib, 2015) where he and Fazlur Rahman's idea about the renewal of Islamic higher education are closely related to the improvement of today's Islamic education. Where research conducted by (Ridlo, 2019) reveals that the long journey of Islamic education has colored the frenzy of Islamic education models in various regions, especially in Indonesia itself, Islamic education

has also taken the momentum of turmoil and renewal in various parts of other Islamic regions. This influence has had a significant enough impact to call it a change, both in the ideological and practical realms. Of course, such turmoil has colored the reform process and determined the direction of renewal of Islamic education in Indonesia, so that on the other hand there is sometimes resistance that illustrates how dynamic the journey of Islamic education in Indonesia is. This can be seen from the various models of Islamic education that have been rooted for many years, and it is even suspected that the seeds of Islamic educational institutions have flourished several centuries ago.

As a result, a critical analysis of the challenges of science according to the views of Islamic reformers can be concluded that science as Burhani's theory of conflict (logic chaos) is very relevant in resolving conflicts or building peace. In addition, the reasoning offered by the burhani concept (logic) is a response to the progress of modern architecture, so that Islamic religious education in schools (public schools and religious schools) is very necessary and needs to be considered in order to support the existence of educational institutions in Indonesia. . Especially regarding Fazlur Rahman's idea about the renewal of Islamic higher education, it is closely related to the improvement of today's Islamic education. So that the sciences according to the views of Islamic reformers are a positive response. So that the position of Islamic education that must be maintained is to remain selective, critical, and open to the emergence of globalization. Islamic education should remain consistent with the main sources of religion, namely the Qur'an and hadith while broadening insight and understanding of the progress of the times, modernity, scientific and technological findings, so that the renewal of Islamic education does not start from scratch. Islamic education is expected to be able to take advantage of existing opportunities and be able to answer and conquer real challenges, so Islamic education will continue to exist and develop and even become a reference for various aspects of life (Idawati, 2021).

So that in terms of critical analysis, the Islamic reformers are included in the Transformation category, where this transformation is included in the world of Islamic education, so this is needed to bring out of crises and problems, strengthening Islamic educational institutions also needs attention, including strengthening 1) management , 2) leadership, 3) policy reform in Islamic education, where this is done with the aim of forming a complete generation and competitive superior humans, namely creative, innovative, character, independent, patriotic and religious people to face Era 4.0 where Humans are required to be fast, precise, effective and efficient (Priyanto, 2020). So that education in the era of the industrial revolution 4.0 is seen as the development of three major competencies of the 21st century, namely the competence to think, act and live in the world. Thinking competencies include critical thinking, creative thinking, and problem solving. Action competencies include communication, collaboration, digital literacy and technological literacy (Lukum, 2019).

B. The Relevance of the Views of Islamic Reformers to the Challenges of Science in Islamic Education in Era 4.0

The education system is a series of sub-systems or elements of education that are interrelated in realizing its success. There are goals, curriculum, materials, methods, educators, students, means, tools, approaches, and so on. The existence of one element requires the existence of other elements, without the presence of one of these elements the educational process becomes blocked, resulting in failure (Qomar, 2005, p. 218). For example, in terms of the epistemology of Islamic education in the archipelago which is used as a symbolic-interpretive of the role of campuses, pesantren and traditional institutions, Islamic educational institutions need to return to their historical roots in order to confirm their identity, character, uniqueness, and uniqueness. There is a spirit that is timeless, and even underlies the ideal education model in the contemporary era. The history of Islamic education initiated by the guardians is a reflection of how Islam should be conveyed. In the contemporary era of Indonesian Muslims, the spirit of Islamic education in the form of guardians finds momentum and at the same time its container, namely through three existing educational institutions: Islamic boarding schools, campuses, and traditional institutions. All three require contextual integration, synergy, and modification efforts. If the systems of these three institutions are connected, the epistemology of Islamic education typical of the archipelago can be realized (Hamsyah, 2015). The same is true of the view which states that the Ideology and Spirit of the Indonesian Islamic Higher Education System in the Industrial Era 4.0 is its relevance to the prevention of radicalism in Indonesia, one of which is the presence of Islamic boarding schools in Indonesia (Mustopa et al., 2021).

We can find this in many ways where at the beginning of the modern era, modern thinkers and Muslim leaders began to realize the importance of education as an effort to advance the people, especially to face the social, economic and cultural hegemony of the West. In a dynamic society, education plays a decisive role in the existence and development of the society, economy and culture. Therefore, education needs to be used as an effort and effort in preserving and transferring and developing Islamic cultural values in all aspects and types to the next generation. As a result, education is the most effective way to deal with the problems of stagnation and decline of the people so far. Islamic education is expected to accommodate new developments in the West (Ghofur, 2016). The same thing was also expressed by (Anggraini, 2018) that the epistemological paradigm of Islamic education has many problems and of course there are many alternative epistemological solutions, especially in the philosophy of education. The solution is to need a certain method where the epistemological approach requires a certain method or method, because it presents the process of student knowledge rather than the results themselves. This epistemological approach provides complete understanding and skills. Those who know the process of each activity should know the results. On the other hand, many know the results but do not know the process. Where the development of Islamic education and science still has a

ambiguous attitude, we can see the findings of educational theories from the West and East, tend to be accepted without criticism by looking for arguments from the Qur'an and Hadith which sometimes tend to be irrelevant. Furthermore, a very normative attitude in dealing with the arguments of the Qur'an and Hadith rather than going through the stages of in-depth analysis.

So that the relevance of the views of Islamic reformers to the challenges of science in Islamic education in Era 4.0 is an improvement in today's Islamic education, so that in era 4.0, science as Burhani's theory of conflict (logic chaos) is very relevant in resolving conflicts or building peace. In addition, the reasoning offered by the burhani concept (logic) is a response to the progress of modern architecture, so that Islamic religious education in schools (public schools and religious schools) is very necessary and needs to be considered in order to support the existence of educational institutions in Indonesia. . Especially regarding Fazlur Rahman's idea about the renewal of Islamic higher education, it is closely related to the improvement of today's Islamic education. So that the sciences according to the views of Islamic reformers are a positive response. So that the position of Islamic education that must be maintained is to remain selective, critical, and open to the emergence of globalization. Islamic education should remain consistent with the main sources of religion, namely the Qur'an and hadith while broadening insight and understanding of the progress of the times, modernity, scientific and technological findings, so that the renewal of Islamic education does not start from scratch. Islamic education is expected to be able to take advantage of existing opportunities and be able to answer and conquer real challenges, so Islamic education will continue to exist and develop and even become a reference for various aspects of life (Idawati, 2021).

So that in terms of critical analysis, the Islamic reformers are included in the Transformation category, where this transformation is included in the world of Islamic education, so this is needed to bring out of crises and problems, strengthening Islamic educational institutions also needs attention, including strengthening 1) management , 2) leadership, 3) policy reform in Islamic education, where this is done with the aim of forming a complete generation and competitive superior humans, namely creative, innovative, character, independent, patriotic and religious people to face Era 4.0 where Humans are required to be fast, precise, effective and efficient (Priyanto, 2020). So that education in the era of the industrial revolution 4.0 is seen as the development of three major competencies of the 21st century, namely the competence to think, act and live in the world. Thinking competencies include critical thinking, creative thinking, and problem solving. Action competencies include communication, collaboration, digital literacy and technological literacy (Lukum, 2019).

Another view is related to the epistemology of Islamic education in order to unravel Islamic education as a system of knowledge, so the current problem of Islamic education is the issue of the dichotomy between religious knowledge which is oriented to the happiness of the hereafter and non-religious sciences oriented to worldly happiness alone (Izza, 2019). As a

result, it should be remembered that Islam does not distinguish between the two. So that the inappropriate epistemology of Islamic education needs to be corrected. Therefore, the essence of Islamic education is the process of inculcating etiquette, the process of transferring knowledge and the process of purifying the soul. These processes are actually related to the sources of knowledge in Islamic education, namely the five senses, reason, intuition, and revelation (revelation). The functions of these sources are complementary or integral. But in reality, the source of intuition, for example, has not received an adequate portion in Islamic education. For example, with the existence of pesantren-based formal education from elementary/elementary school (elementary school) to university level in Indonesia by integrating Science and Religion (Nurohman, 2022). Likewise, the view (Suparjo et al., 2021) in his journal that teaching materials applied in Islamic Religious Education (PAI) need to be integrated with Natural Sciences (IPA), which can be used in the classroom, so the integration of these two sciences needs to be developed. as teaching materials.

Sunhaji further explained that IPA (Natural Science), which is integrative in the development of national education, began with the implementation of the 1984 curriculum. Currently, the term science is becoming more popular than knowledge, due to the influence of the 21st century globalization era. Long before that, science subjects were known as life sciences for biology, earth sciences, natural sciences for physics and chemistry, and so on. Science itself comes from the Latin Scientia which means knowledge in general. At least, there is one fundamental thing that distinguishes between science and non-science, namely experimental methodology. In astronomy, however, an astronomer cannot conduct experiments in the sky. Astronomers replace experimental activities with astronomical observations of information messengers such as electromagnetic waves, meteorites, neutrinos, or gravitational waves with great care (Sunhaji, 2013).

With the opportunities and challenges of the era of disruption (4.0), there is a need for development in the epistemology of Islamic education, in which the Qur'an and hadith are the main sources, which can be done by criticizing, providing solutions, finding and developing Islamic education. Where the position of Islamic education that must be maintained is to remain selective, critical, and open to the emergence of globalization. Islamic education should remain consistent with the main sources of religion, namely the Qur'an and hadith while broadening perspectives, so that insight and understanding are always up to date, besides that scientific development is needed to synergize the progress of the times, modernity, scientific and technological findings, so that the renewal of Islamic education is needed. not start over again. As a result, the relevance of the views of Islamic reformers to the challenges of science in Islamic education in Era 4.0 is relevant, where this can be implemented through the development of superior Islamic education through the arguments contained in the Qur'an and Hadith. Which is the view of Islamic Reformers on the Challenges of Science in Islamic Education in Era 4.0 can be used to form a complete generation and superior human beings who are competitive,

namely creating creative, innovative, character, independent, patriotic and religious people to face Era 4.0 where humans are required to be fast, precise, effective and efficient in carrying out life activities.

CONCLUSION

From the discussion above, it is related to critical analysis of the challenges of science according to the views of Islamic reformers and the relevance of the views of Islamic reformers to the challenges of science in Islamic education in the 4.0 era, that in realizing superior knowledge in Islamic education, especially in the era of disruption (4.0), as the solution, that is, science needs to be adapted to the current developments, this is because science is 1) unraveling, 2) accompanying (supporting), in realizing the development of superior Islamic education through the arguments contained in Al -Qur'an and Hadith. The real example is the establishment of formal schools, from elementary school (elementary school) to Islamic boarding school-based universities that exist in Indonesia. In addition, in order to develop superior science, it can be done through an alternative paradigm of integralism, which is integrated through religious sciences with non-religious sciences which can be done by Islamic boarding school-based institutions. As a result, the relevance of the views of Islamic reformers to the challenges of science in Islamic education in Era 4.0 is relevant, where this can be implemented through the development of superior Islamic education through the arguments contained in the Qur'an and Hadith. Which is the view of Islamic Reformers on the Challenges of Science in Islamic Education in Era 4.0 can be used to form a complete generation and superior human beings who are competitive, namely creating creative, innovative, character, independent, patriotic and religious people to face Era 4.0 where humans are required to be fast, precise, effective and efficient in carrying out life activities.

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