SCIENCE AND TECHNOLOGY OPPORTUNITIES IN HADITH RESEARCH

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ABSTRACT

The purpose of this research is to discuss the opportunities of science and technology in hadith research. This research method uses qualitative research through literature study with a content analysis approach. The results and discussion of this research include the hadith science methodology, the development of the hadith validity method and the hadith text criticism method with a multidisciplinary and transdisciplinary approach, and scientific and technological opportunities in hadith research for the need for integration of science. The conclusion of this study is that research on hadith with a transdisciplinary approach opens wide opportunities for science and technology that are currently developing for the realization of the integration of science. This study recommends the importance of applying a transdisciplinary approach to science and technology opportunities in the development of hadith research in Islamic higher education.

Keywords: science integration, research collaboration, hadith research, science and technology

INTRODUCTION

There are scientific and technological opportunities in hadith research. Since the modern Western century (Hardiyati, 2020), science and technology have progressed in human civilization (Ariyanto, 2018). In line with the advancement of Western science (Brown, 2020), hadith is studied from a modernist perspective (Idris, 2018). The motivation for the development of science from the hadith perspective is also examined (Darlis, 2017). Hadith research with modern science has become a new discourse (Akmaluddin, 2020). This hadith research discourse includes directions for the integration of science with social and natural sciences (Afwadzi, 2017). The opportunity for science and technology in hadith research has begun with the design of various applications of the validity of hadith (Darmalaksana et al., 2020) and also began research on the relation of hadith and science (Fudhail, 2020). This study highlights the opportunities of science and technology in hadith research in order to erode the dichotomy of science (Istikomah, 2019).

A number of previous studies have become a literature review of this research. Researchers have discussed the relationship between science and religion (Yahya et al., 2018), the relation between science and Islam (Dahlan, 2011). In the 1990s, there was a growing issue (Sookhdeo, 2006) of the Islamization of knowledge based on the Qur'an and hadith (Majid, 2018). Ontologically (Junaidi et al., 2017), the truth of the contents of the al-Qur'an and hadith is seen as a miracle of Islamic science (L. Ibrahim, 2010), until the science-technology dialectic took place with the Qur'an and hadith (Anam, 2012). Scholars try to dig up science and technology from the Qur'an and hadith (Nairozle et al., 2018). Specifically, scientific studies and hadith emerged (Z. al-Najjar, 2011), published scientific hadith master book (Z. R. M. al-Najjar & Indrayadi, 2010), and research on the appropriateness of hadith and science (Fudhail, 2020). In the 2000s, research on hadith versus science (N. Ali, 2008) led to the convergence of science and Islam (Umar, 2016).

Researchers acknowledge the role of modern science in the interaction of hadith texts (M. Y. Ismail, 2016), particularly the contribution of science in determining the validity of the hadith (Hasibuan, 2017). In 2015, a number of researches on the integration of science-technology and hadith took place (Mahmud & Arafah, 2020). Research around this includes the integration of knowledge in hadith (Wahid, 2017), integration of social science and hadith (Afwadzi, 2016b), hadith research with a mulidisciplinary approach from the natural sciences (Afwadzi, 2016a), and application of integration of natural sciences with the understanding of hadith (Afwadzi, 2017). There is also research on the integration of science in the hadith text criticism (Firdaus & Suryadilaga, 2019). The integration of knowledge in the study of hadith is found in a number of dissertation studies (Lukman, 2017).

Literature review of the hadith with respect to science and technology is useful for constructing a frame of mind. Hadith is understood as a paradigm (Wendry et al., 2018). From a review of the philosophy of science (Adib, 2011), hadith paradigm (Darmalaksana, 2018) includes ontology (Junaidi et al., 2017), epistemology (Atabik, 2017), and axiology (Solihin, 2016). Ontologically, the hadith is the source of Islam (Fageh, 2019). Epistemologically (Amaliya, 2015), hadith is a collection of hadith science methodology (Nadhiran, 2017). Axiologically (Basid, 2016), hadith is the main value of the application of Islam (Hasbillah, 2019). It is known that the science of hadith has developed in history (Zuhri, 2015), along with the advancement of science in the Western world (Hardiyati, 2020). In classical times (I. Fauzi, 2020), hadith research applies the approach of Islamic sciences (Kurniati, 2020). In modern times (Saifullah, 2014), hadith research has begun to apply a multidisciplinary approach (Rohmatika, 2019). This is an opportunity for science and technology in hadith research (Aditoni, 2019). Advances in information technology can be used for validity testing (Baraka & Dalloul, 2014). Hadith can be an inspiration for the development of science and technology (Mustami & Masri, 2017). Hadith research through a science and technology approach is needed to realize the integration of science (Wahid, 2017).

Based on the explanation above, a research formula is prepared, namely the formulation of the problem, research questions, and research objectives (Darmalaksana, 2020b). The formulation of the research problem is that there are opportunities for science and technology in hadith research. This research question is how the opportunities of science and technology in hadith research. The purpose of this research is to discuss the opportunities of science and technology in hadith research. This research is expected to be useful for the development of hadith research in the era of globalization of information (Suryadilaga, 2014).

METHODOLOGY

This research method uses qualitative research through literature study (Darmalaksana, 2020c, 2020f). The data interpretation in this study used a content analysis approach (Hsieh & Shannon, 2005; Williamson et al., 2018). Literature study is carried out by collecting various sources of hadith research related to science and technology. Furthermore, a content analysis approach was carried out for all sources. This content analysis approach aims to reveal the development of hadith research in the modern era that cannot be separated from science and technology.

RESULT AND DISCUSSION

Hadith and the science of hadith have developed in history (Wahid & Masri, 2018), from oral to digital traditions (Maulana, 2016). Hadith is something that comes from the Prophet which includes words, deeds, statements and others (Soetari, 1994). Hadith is also called sunnah, Hadith is a collection of

hadith found in hadith books, and sunnah are Muslim practices in tradition and culture (Soetari, 1994). In the Islamic world, the hadith is agreed as the second source of Islam after the al-Qur'an (Darmalaksana et al., 2017).

In general, the science of hadith is divided into two, namely the history of hadith transmission and the methodology of hadith science (Soetari, 2005). The history of hadith narration discusses the origin of the hadith since its transmission from the Prophet, passed on to people from generation to generation, and recorded in the hadith book (Soetari, 2005). The methodology of hadith science serves to test the authenticity of the hadith whether it is true from the Prophet or false traditions (Masrur, 2012).

Hadith knowledge has developed (Andariati, 2020), from the classical period to the contemporary era (Anggoro, 2019). First, developed the method of hadith takhrij (Qomarullah, 2016) to test the authenticity and validity of the hadiths by extracting the hadiths from the hadith book (Soetari, 2015). Second, developed the method of sharah hadith (Muhtador, 2016) to explain the meaning of the hadith text (Sagir, 2017). In the sharah hadith method, a textual approach develops through linguistic analysis and a contextual approach (Alamsyah et al., 2020) through analysis of the causes of the emergence of the hadith (Lestari, 2015) and social sciences (Suryadilaga, 2017), such as anthropology (Rohmana, 2015), sociology (Assagaf, 2015), genealogy (Taufik, 2020a), and others.

The government in Indonesia has established policies regarding the development of hadith research (Tim Penyusun, 2018b). The policy stipulates that hadiths should be researched using an interdisciplinary, multidisciplinary and transdisciplinary approach (Tim Penyusun, 2018a). Interdisciplinarity is research with an allied scientific approach (Rohmatika, 2019). Multidisciplinary is research with a science approach that is not related (Rohmatika, 2019). Transdisciplinarity is research with an integrated science approach (Sudikan, 2015). This policy is in line with regulations regarding the implementation of integrated science between Islamic and general sciences in Islamic higher education in Indonesia (Indonesia, 2019).

Today there are opportunities for science and technology in hadith research. First, the use of advances in information technology in hadith research. The use of information technology plays a role in the development of the hadith takhrij method (Darmalaksana, 2020d). Second, the use of hadith as inspiration for the development of science and technology. This is an opportunity for the development of the sharah hadith method through a multidisciplinary and transdisciplinary approach from advances in science and technology (Taufik, 2020b).

Information technology plays a role in the development of the hadith takhrij method, both hadith narrative research and hadith text research (T. M. S. T. Ismail et al., 2014). Hadith science establishes five indicators of the validity of hadith, namely: 1) continuity of hadith narration; 2) the quality of the hadith narrators; 3) capacity of hadith narrators; 4) the validity of the hadith text; dan 5) the purity of the hadith text. In classical times, hadith scholars validated hadith using conventional methods (M. A. M. Ali et al., 2015). In the modern era, hadith scholars have made innovative use of advances in information technology (Najeeb, 2014) in testing the validity of the hadith (Baraka & Dalloul, 2014).

The digital information about the hadiths has prepared a rich resource (Alkhatib et al., 2017). This condition is an opportunity for researchers to design a hadith search engine (Darmalaksana et al., 2020) with a multi-language system (Hassan & Atwell, 2016), so that hadith researchers can assess the quality of hadith information (Karim & Hazmi, 2005). Retrieval of hadith information from digital data sets (Mahmood et al., 2017) is beneficial for the discovery of hadith knowledge (Jbara, 2010). Hadith researchers play a role in determining the validity of the hadith (Ghazizadeh et al., 2008) and the

authenticity of the hadith (Hakak et al., n.d.) by displaying the visualization of the chain of hadith narrators (Shukur et al., 2011).

Operationally, hadith research includes mining hadith data (Saloot et al., 2016) and processing of hadith literature (A. M. Azmi et al., 2019) by using a multi-agent system (Najeeb, 2015), resulting in the classification of hadith (Alkhatib, 2010). Based on this information technology, various classifications of hadith can be obtained, such as positive and negative hadith classifications (Al Faraby et al., 2018), hadith degree classification (Najiyah et al., 2017), hadith classification matching (Hasan et al., 2018), and topical classification of hadith texts (Al-Kabi et al., 2015). Information technology experts are able to design machines to improve the extraction of hadith classifier knowledge (Aldhaln et al., 2012) and they are able to improve the performance of the hadith classification (Aldhlan et al., 2012). This is the development of information technology on hadith verification techniques (Yusoff et al., 2010) with regard to hadith indexing (Harrag et al., 2008).

In addition, the hadith can be understood with a modern scientific approach (Abd Razzak, 2011). Among them is the hadith perspective on management (Hamid & Sa'ari, 2011), economic system (Usman et al., 2015), and a collection of hadith about economics (Idri, 2010). Hadith also discusses medicine (Deuraseh, 2006), health (Akbar & Budiyanto, 2020), epidemic of a disease (A. S. Azmi, 2020), treatment (Safarsyah, 2018), healing with honey (Taghavizad, 2011), and traditions about pharmacy (Dalil, 2017). Specifically, the hadith deals with dental health (A. Fauzi, 2018), natural toothbrush (Niazi et al., 2016), and the Prophet's teachings on oral health (Aumeeruddy et al., 2018). This has become an inspiration for dentistry in modern times (Marzband & Karnami, 2016).

It was found that there was inspiration in health science from the experience of the Prophet (Awang & Robbi, 2020). The Prophet taught health for life (Lazim, 2018), he teaches fasting for the immune system (Mostafazadeh & Khorasani, 2014), and the Prophet taught a healthy lifestyle (Fadli et al., 2019). The hadith emphasizes cleanliness and environmental health (Rahmasari, 2017), including hadith discussing rain and floods (Zulhelmi & Azman, 2016). There is also research which states that hadith is an object of physics (Mirza, 2016). Also explained about the truth of hadith from the perspective of physics science (Harahap, 2017).

Hadith also discusses biology issues, such as the hadith understanding of genes from a scientific perspective (Setyani, 2016), the reproductive process of women from the perspective of the hadith (Rofiq, 2015), and the interrelation of organs from the hadith perspective (Nashiruddin, 2017). There is also plant biology in the understanding of hadith (Baihaqi, 2018). Also animal biology according to the hadith with a scientific approach (Tsaqofi, 2018). The rest, the hadith discusses types of flies (Fikriyati, 2019). In fact, this hadith about flies has inspired research into the production of anti-bacteria from the wings of various types of flies (Mustami & Masri, 2017). Matters regarding iron material are also discussed in the hadith (Salmah, 2017).

Hadith is not everything in the face of science and technology. In fact, science and technology are developing very fast (Hardiyati, 2020). While the science of hadith is still looking for a form of development (Darmalaksana, 2020e). However, the hadith can inspire the development of science and technology (Mustami & Masri, 2017). It is undeniable that it turns out that there are many traditions related to science (Nairozle et al., 2018). Of course this can be an opportunity for science and technology to encourage the development of hadith research in the future (Abbas, 2019).

Especially with regard to advances in information technology, then the science of hadith can use it for applied methodology (Hasibuan, 2017). The method of hadith takhrij can be developed in the latest through advances in information technology (Darmalaksana, 2020d). So that information technology

plays a role in facilitating the process of validating the hadiths from digital big data sets (Darmalaksana, 2020a). Hadith experts can conduct collaborative research with engineering circles to design applications of hadith authenticity. Hadith experts are tasked with compiling hadith validation business processes based on the theory of hadith science, and engineers are tasked with designing hadith applications with a cutting-edge approach. Collaboration is an important part of the development of science in this multidisciplinary era (Darmalaksana, 2020d).

Collaborative research on hadith and technology can take many forms, such as: 1) Data mining technology (Jiawei et al., 2012) and text mining (Zohar, 2002), who are able to seek insight knowledge from databases and hadith texts with classification, clustering, and association approaches that produce rules or semantics from hadith; 2) Natural language processing technology (Chowdhury, 2005; Nadkarni et al., 2011), like opinion mining (Jumadi et al., 2016) and sentiment analysis (Branz & Brockmann, 2018) which can be used to find out a person's opinion and sentiment in evaluating a hadith, text summarization which can be used to summarize the journey of hadith (Adytoma, 2019), and translation machine (Zong & Hong, 2018) which can be used to automatically translate the hadiths into various languages; 3) Information retrieval that can be used to create a hadith search engine (Darmalaksana et al., 2020); to 4) eLearning which can be used for learning and introduction to hadith in the world of education, where currently many e-learning are presented with augmented reality technology (Dunleavy & Dede, 2014; Nincarean et al., 2013).

Only authenticity research (N. K. Ibrahim et al., 2016) is not sufficient in the study of hadith criticism (Yaqub, 2004). Furthermore, the study of hadith texts is needed (Pari, 2017). Usually a contextual approach is used in understanding the hadiths (Shah, 2011). Although the contextual approach is considered current in the study of hadith texts (Idris, 2018), but hadith research still requires a transdisciplinary approach (Hadorn et al., 2008). Based on a transdisciplinary approach to hadith research (Sudikan, 2015), it will result in an integration between hadith and science, so that there is no dichotomy between hadith and science (Istikomah, 2019).

CONCLUSION

Hadith research has opened up opportunities for the development of science and technology. Advances in information technology are useful for designing hadith validity applications. At the same time, the development of science is beneficial for the development of hadith research. Multidisciplinary and transdisciplinary approaches are needed in hadith research. The implication is that hadith research can produce valid, contextual, and transformative traditions in line with advances in science and technology. Another implication is that cross-disciplinary collaborative research is needed so that it results in an integration of knowledge between hadith and science-technology. This research is expected to be useful for Muslim scientists for integrated research between science-technology and hadith. This study has the limitation of only an initial study with a literature review, so that further research is needed in an integral, comprehensive, and in-depth manner. This study recommends the importance of applying a transdisciplinary approach to science and technology opportunities in the development of hadith research in Islamic higher education.

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