

Action Research in Hadith Literacy: A Reflection of Hadith Learning in the Digital Age

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Abstract. When the internet has become the main reference source for academics and students in completing their assignments, critical attitudes towards information accessed via the internet, especially about *hadith* are often ignored. Critical attitude is needed to ensure the authenticity of a *hadith* because its discourse has a level of quality, be it *sahih hadith* (authentic, accepted) or *da'if* (rejected). Along with the development of internet technology, many false *hadiths* are circulating on the internet. Therefore, adequate literacy skills in reading and tracing the authenticity of a *hadith* are needed. This research provides examples of the results of collaborative team work to improve *hadith* literacy. Action Research Design was chosen to find solutions to problems through critical reflection in the process of learning Al-Qur'an. The Action Research procedures were combined with the Kern's 3R model namely Responding, Revising, and Reflecting. This study involved 398 students as research participants at one of the higher education institutions in West Java, Indonesia. This research resulted in several findings: 1) Six steps were taken to improve *hadith* literacy, namely the formulation of learning objectives, selection of media, update of the knowledge of *hadith*, understanding the learning media, application of learning media, and evaluation. 2) Two applications were used as learning media in improving *hadith* literacy, namely the science of *hadith* and the *Ensiklopedi Hadits Kitab 9 Imam* (EHK9I, Encyclopedia of *Hadith* in the book of 9 Imams). 3) The reflective actions and the integration of the two applications showed an increase in three aspects of literacy namely data literacy (54.33%), technological literacy (63.07%), and human literacy related to narration of the *hadith* (93.59%). It can be

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concluded that the steps taken by utilizing the two applications as learning media can improve the participants' ability to trace and determine the authenticity of a *hadith*.

Keywords: literacy; *hadith*; digital native; action research; *takhrij hadith*

1. Introduction

One guiding principle the millennials must have in studying Islam or any scientific work on Islam is to use information from original and reliable sources (Alkhatib, Monem & Shaalan, 2017; Karim & Hazmi, 2005; Luthfi, Suryana & Basari, 2018). In the study of *hadith*, it is compulsory to refer to the original primary reference sources namely the books of *hadith* by the *ulama*. Works that are often used as references and recommended in *hadith* discussions are known as *kutub sittah* or the six *hadith* books and some even call them as *kutubu tis'ah* or the nine books of *hadith* (Mohamad & Mohamad, 2017; Suliaman & Yaakob, 2019; Suliaman et al., 2018).

Along with the presence of internet technology as a communication tool and information provider, this principle is in fact often ignored. The internet has become the main reference source for academics and students in completing their assignments (Karim & Hazmi, 2005). In addition, the development of internet technology has made the millennials rely more on social media as a tool to get information such as Instagram, Facebook, Twitter, WhatsApp groups, and so on (Wahyuningsih, 2019).

Ironically, obtaining the information on *hadith* from the internet or social media is not accompanied by a critical attitude to differentiate which *hadith* is authentic. Students need to have the ability to investigate *shahih hadith* through the following criteria: a. Sanadnya continued (*iitishal al-sanad*); b. The narrator is fair (*"adalat al-rawi*); c. The narrator is *dhabit* (*dhabth al-rawi*); d. Avoiding the syadz (*"adam al-syadz*); e. Avoid *illat* (*"adam" illat*). As an example, the millennial generation rarely crosschecks the *hadith* quotations spread in the cyberspace with the books of *hadith*. Checking on the books of *hadith* is important to test whether or not a person's arguments are strong when discussing Islamic topics. Quoting Al-Qur'an or *hadith* is a rhetorical strategy to build arguments on all topics (Boutz, Benninger & Lancaster, 2019).

Conducting a *hadith* cross-check as a manifestation of a critical attitude towards *hadith* information is oriented on to two things. First is whether the *hadith* quoted or used in the argument is in the books of the *hadith* or not. Second, the quality of the *hadith* used as an argument in the topic. The *hadith* discourse is always confronted with the degree of quality of a *hadith*. Analysis is required to conclude whether a *hadith*, as the footing, is accepted or rejected (Najeeb, 2014; Najiyah, Susanti, Riana & Wahyudi, 2017). The activity of searching the *hadith* and revealing the quality of a *hadith* is called *takhrij hadith* (Hidayat, 2018; Qomarullah, 2016).

The critical attitude embodied through the *takhrij hadith* is a necessity for the millennials who have an interest in Islamic topics. This is important because the

spread of false *hadith* continues to increase via the internet or social media and has become a new threat that must be seriously eradicated by Muslims living in this digital world (Usman A.H, 2018). Therefore, insight, skills and high motivation are needed to carry it out as an effort to prevent false *hadith* from circulating online as to filter information related to the *hadith*. Therefore, ones' understanding and practice of Islam should have strong legislation foundation. The reason for this is that the *hadith* is a fundamental source of Islamic teachings after Al-Qur'an (Baraka & Dalloul, 2014; Najeeb, 2014).

Based on the problems, this study aims at analyzing the steps of action in improving the *takhrij hadith* ability of the millennial generation based on information technology. The limitations of this study are formulated in the questions: "How are the steps to increase *takhrij hadith* ability for the millennial generation?" and "What information technology can improve the *takhrij hadith* ability for the millennial generation?". In specific, this study hypothesized that the utilization of Encyclopedia of *Hadith* in the book of 9 Imams (hereinafter abbreviated as EHK91) that the students' critical thinking ability on *hadith* circulated on the internet can be developed.

2. Theoretical Framework

The *hadith* is the words and deeds of the prophet Muhammad (Baraka & Dalloul, 2014; Najeeb, 2014). Not only that, it is also defined as his provisions, agreements and ideals (Al-Fadli, 2011; Ali, 2013; Brown, 2017; Kamali, 2014). In the perspective of Islam, the *hadith* is an important tool in understanding Al-Qur'an as the first and foremost source of Islamic teachings (Baraka & Dalloul, 2014), hence the *hadith* is the second source of Islamic teachings after Al-Qur'an (Najeeb, 2014; Najiyah et al., 2017).

There are two parts in a *hadith*. The first part is the original content (narration) or *matan*, (المتن). The second part is the string of narrators who conveyed the narration, or *isnad* (إسناد). *Isnad* is the list narrators who were listed chronologically (the person who a narrator heard the *hadith* from), traced back until the first *Hadith* narrator of the *matan* and the *matan* itself (Azmi & Badia, 2010). For about 15 centuries, Muslims were relying on *isnad* to differentiate *hadiths* that are accepted (*Sahih*) and rejected (*Da'if*). The scholars of *Hadith* assess them using the *isnad* and the narrators making the string (Najeeb, 2014). Therefore, in the science of *hadith*, a research on *isnad* is *Hadith* essential. To find out the authenticity of a *hadith*, *Hadith* scholars adhere to defined steps of *isnad*. The steps are believed to be traditional (Baraka & Dalloul, 2014).

A frequently used reference in the investigation of *hadith* is the "six books called *kutubu sittaah*", namely Sahih Al-Bukhari, Sahih Muslim, Sunan Abu Daud, Sunan Al Tirmidzi, Sunan Ibnu Majah and Sunan Al Nasa'i (Najeeb, 2014). Most of the *hadith* experts believe that if a *hadith* alleged to be based on the Prophet is found in the canonical *hadith* collection, especially in Sahih Bukhari and Muslim, then the *hadith* is definitely sourced from the Prophet (Masrur, 2007). However, in contrast to most *hadith* experts, G.H.A. Juynboll (1935-2010 AD) with his common link theory, as revealed by Arifah (2019) and Masrur (2007), although a

hadith has been recorded in *al-kutub al-sittah*, the *hadith* does not necessarily come from the Prophet. This indicates that to know the authenticity of the *hadith* two stages are required. The first is to trace the *hadith* in the canonical books and the second is to analyze the series of *isnad* to determine the quality by the methods established by the *ulama*. In the science of *hadith*, this is known as the *takhrij hadith* (Hidayat, 2018; Qomarullah, 2016; Suliaman et al., 2018).

The above steps are linked to one's literacy skills. Literacy is not limited to reading and writing activities but is also related to the demand to understand information critically and analytically (UNESCO, 2003). The advances in information technology and the internet which result in abundant digital information resources demand people to have digital literacy capabilities, namely special abilities in using digital information (Miftah, Rizal & Anwar, 2016).

So far, there have been many efforts in studying the *hadith*, for example the multimedia-based *Aplikasi Seratus Satu Hadis tentang Budi Luhur* (A Hundred and One *Hadith* on Highest Virtue Application) which was developed by Diki Silviadi. However, the purpose of the application was to assist students in memorizing *hadith* (Tresnawati, Satria & Silviadi, 2016). In addition, its features and contents are not representative enough to explore the quality of the *hadith*.

Rakhmah (2016) wrote an article on the making of *E-Hadits*, a Java Eclipse based smartphone application. She mentioned that the weaknesses of the application were that contents and features were still limited and did not lead to providing information about *isnad* as an important aspect in tracing the authenticity of the *hadith* (Najeeb, 2014).

The Perpustakaan Shamela application is one of the most helpful systems in learning *hadith* (Ghozali, 2017; Najeeb, 2014). This application helps investigating the "narrator chain" and provides accurate information about *matan* and *isnad*, as well as provides information on all important details about the narrators. However, this application is not automatically able to judge the quality and all parts of the digital library use Arabic.

Another application that is quite representative in studying the *hadith* in terms of information on both *matan* and *isnad*, which are important elements in the *hadith* (Azmi & bin Badia, 2010; Baraka & Dalloul, 2014; Najeeb, 2014), is the *Ensiklopedi Hadits Kitab 9 Imam* (hereinafter abbreviated as EHK9I, Encyclopedia of *Hadith* in the book of 9 Imams) developed by Lidwa Pustaka. This application is equipped with punctuation marks and translations, and it is a digitalized version of the 9 books of *hadith* and other features that support the ease of learning the *hadith*.

These works show a fairly high interest in studying the science of *hadith* and strive to utilize new techniques to present them in an application as a learning medium. This research is focused on the pedagogic aspect as an effort to improve students' ability to trace the authenticity of a *hadith* using available information technology as a learning medium.

3. Method

3.1. Design

This research employs Action Research (AR) design because AR seeks to explore problems to find solutions (Creswell, 2002). This is in line with the problem of students' critical attitudes in receiving, reviewing, and understanding *hadith* information as a source of Islamic teachings. In addition, AR provides vast space for researchers to find new innovations to make changes suitable to conditions and needs (Darwis, 2016). The exclusive characteristic of AR is that the users can make improvements and solve problems (Bozkus & Bayrak, 2019; Greenwood & Levin, 2006).

In line with the above, AR is popular among researchers to solve problems in the pedagogic field. Several examples of research using AR are J. Julia research titled *Technology Literacy and Student Practice: Lecturing Critical Evaluation Skills* (Julia & Isrokatun, 2019), Niemi (2018) titled *Five Approaches to Pedagogical Action Research* and Edwards-Groves and Kemmis (2016) titled *Pedagogy, Education, and Praxis: Understanding New Forms of Intersubjectivity through Action Research and Practice Theory*. This current article's authors have implemented AR in their research (Suherman, Supriyadi, & Cukarso, 2019; Supriyadi & Julia, 2019; Supriyadi, Julia, & Iswara, 2019; Supriyadi, Julia, Iswara & Aeni, 2019). In addition, this research design can be used as an effort to understand self-practice to enable improvements in every action taken (Kemmis & McTaggart, 2005; Kemmis, McTaggart & Nixon, 2013; McTaggart, 1994). Using AR, the researcher can apply the planning, implementation, and reflection on every research step (McTaggart, 1996).

In specific, the distinctive feature of AR is the principle of collaboration in conducting research (Bruce, Flynn & Stagg-Peterson, 2011; Creswell, 2002; Ferguson-Patrick, 2007; Jaipal & Figg, 2011; Leeman, van Koeven & Schaafsma, 2018; Somekh, 2010). In the collaborative action research in the field of education, there is cooperation between the teachers, or between the teachers and the researchers (Messiou, 2019; Zech, Gause-Vega, Bray, Secules & Goldman, 2000). This research, therefore, involved several parties. .

3.2. Research Participant and Site

The participants of this research were students at one of the public higher education institutions taking Islamic religious education course. There were 398 students consisting of 127 males and 271 females in one batch in three study programs. The participants were from several regions in Indonesia namely West Java, Central Java, Jakarta, and West Nusa Tenggara. The sampling technique was purposive sampling in which the researcher determined the sample with certain considerations and criteria in accordance with the objectives of the study. The consideration was that every Muslim is required to understand and practice the *hadith*. The sample criteria are students who were taking Islamic education courses. In addition, the participants were in the digital native criteria. According to Prensky, (2001) one of the initiators of the digital natives generation theory, digital natives have the characteristics of being born in the 1980s and thereafter, being born in the digital technology environment.

Considering the collaborative features of AR, this research involved several other parties. They were lecturers and the religious-based students' activity unit. The researchers as lecturers of Islamic religious education course collaborated with peers who also teach the course. One lecturer had a special expertise in the field of *hadith*. In addition, the researchers also collaborated with one of the student activity units in the religious field to be involved in a series of actions taken.

3.3. Research Procedure

The procedure in this research combined the steps in AR design with the theory developed by Kern (Kern, 2000) in improving literacy known as the 3R, namely Responding, Revising, and Reflecting. Responding involves two parties, namely lecturers and learners, and they have a reciprocal relationship. Simply put, this first R, Responding, is an attempt to portray the problem of student literacy skills in *hadith* learning and to map students' initial abilities in *hadith* literacy. This stage is the pre-action analysis. The second R, Revision, includes various activities in designing improvement efforts based on problems found in the, the media used, and the improvements made in learning. The third R, Reflecting, is similar to evaluation, which is the process of evaluating what has been done, what was seen, and what was felt during the learning or it is called the post-action analysis.

The above 3R procedure showed a reciprocal relationship between the lecturers and the students. In the first R, Responding, the students responded to the given task of reading, tracing, and analyzing the *hadith*; while the lecturers responded by providing feedback to help the students reach a certain level of accuracy. In the second R. Revision, Hadith Insight Test was done to measure their knowledge about *hadith* by the lecturers and performed by the students. In the third R, Reflecting, the lecturers evaluated the results of the first two Rs; while the students were asked about what was seen, and what was felt during the learning.

3.4. Data Collection

The data were collected by means of surveys, observations, and semi-structured interviews. The survey used the scale from Likert and Guttman (Allen & Seaman, 2007; Widhiarso, 2011) and was distributed using Google Documents. In today digital era, Google Documents has become a profitable and easy-to-use survey tool (Allen & Seaman, 2007; Brigham, 2014; Chiu, Cheng & Wu, 2016; Lin, Chang, Hou & Wu, 2016; Travis, 2010; Widhiarso, 2011). Therefore, the research instrument used consisted of observation guidelines, interview guidelines, and questionnaires (Appendix 1).

3.5. Development of Literacy Indicators

To measure the participants' level of literacy in the field of *hadith*, a rubric was formulated. This rubric is a development of the three aspects of literacy ability as stated by Furqon (2018). The developed indicators were related to the aspects of human literacy and the narrators of the *hadith*, and we expect that the students could at least master 75% of the indicators listed in Table 1. This was necessary because tracing the authenticity of a *hadith* is inseparable from its history and

credibility of the narrators of the *hadith* (Karim & Hazmi, 2005; Najeeb, 2014). The development is described in the following Table 1.

Table 1. Hadith Literacy Rubric

No	Literacy Aspect	Description	Indicator	Target
1	<i>Hadith</i> Data Literacy	The ability to read, analyze and make conclusions of thinking based on obtained data and information (big data)	<ol style="list-style-type: none"> 1. Able to find and collect thematic <i>hadiths</i>. 2. Able to distinguish elements of the <i>hadith</i> (<i>matan</i> and <i>isnad</i>). 3. Able to mention the source/primary book related to a <i>hadith</i>. 4. Able to express the content of a <i>hadith</i> according to the explanation of <i>ulama</i>. 	75%
2	<i>Hadith</i> Technology Literacy	Ability to understand machines and technology applications, and do work using technology-based products	<ol style="list-style-type: none"> 1. Able to utilize information technology in studying <i>hadith</i>. 2. Able to search for and choose information technology related to the <i>hadith</i> appropriately 3. Able to understand the features in the <i>hadith</i> information technology being used 	75%
3	Human Literacy related to the Narrator of <i>Hadith</i>	Communication skills, collaboration, critical thinking, creativity and innovation related to the <i>hadith</i> narrators	<ol style="list-style-type: none"> 1. Able to express the quality of a <i>hadith</i> accompanied by the narrator's narration analysis. 2. Able to respond to a <i>hadith</i> that is used as a basis for someone 	75 %

4. Results and Discussion

4.1. Pre-Action Analysis

At this stage, issues related to the participants' ability in the field of literacy were explored. This step was done to obtain an overview of the participants' initial ability in the field of *hadith* based on the developed indicators. The indicators were (1) data literacy, which is the ability to trace a number of *hadiths* on certain topics, (2) technology literacy, which is the media and methods used in tracing the *hadith*, and (3) human literacy, which is the ability to analyze the quality of the *hadith* through the study of narrators of *hadith*.

To measure the 398 research participants, a number of tests in the form of questions with the topic of *shalat* (prayer) were given. This topic was chosen because *shalat* is the most fundamental ritual obligation for a Muslim. In general, *shalat* is defined as reciting (the prayers), supplicating, and strengthening the

relationship with God (Parvez, 2016). Therefore, the practice of *shalat* for a Muslim must surely follow the examples and teachings of prophet Muhammad SAW in both his readings and movements, as in the words of the Prophet Muhammad SAW “Pray you as you see me pray” (Al Asqalani, 2007). The participants were tested whether they could search information about the *hadith* in accordance with the specified topic, to find out the media that they used for searching the information and how they find assess the *hadith's* authenticity. The test results can be seen in the following Table 2:

Table 2. Results of Hadith Literacy Pretest

No	Literacy Aspect	Description	Indicator	Percentage (%)
1	<i>Hadith</i> Data Literacy	The ability to read, analyze and make conclusions of thinking based on obtained data and information (big data)	a) Able to find and collect thematic <i>hadiths</i> .	100%
			b) Able to distinguish elements of the <i>hadith</i> (<i>matan</i> and <i>isnad</i>).	24.6%
			c) Able to mention the source/primary book related to a <i>hadith</i> .	24.6%
			d) Able to express the content of a <i>hadith</i> according to the explanation of <i>ulama</i> .	17.6%
2	<i>Hadith</i> Technology Literacy	Ability to understand machines and technology applications, and do work using technology-based products	a) Able to utilize information technology in studying <i>hadith</i> .	100%
			b) Able to search for and choose information technology related to the <i>hadith</i> appropriately	3%
			c) Able to understand the features in the <i>hadith</i> information technology being used	2.3%
3	Human Literacy related to the Narrator of <i>Hadith</i>	Communication skills, collaboration, critical thinking, creativity and innovation related to the <i>hadith</i> narrators	a) Able to express the quality of a <i>hadith</i> accompanied by the narrator's narration analysis.	2.3%
			b) Able to respond to a <i>hadith</i> that is used as a basis for someone	1.8%

n= 398 participants

Table 2 presents that in the aspect of data literacy; only 1 indicator was able to be represented by all participants as 398 (100%) participants were able to collect the *hadiths* thematically. For the second and the third indicators, only 98 (24.6%), and the fourth indicator only 70 (17.59%) participants were able to represent their abilities. This means that from several indicators, only one indicator from the aspect of data literacy was able to be represented by more than 80% of the

participants and other indicators were below 80%. Thus, the participants' ability on the other indicators in data literacy was still weak.

In the aspect of technology literacy as shown in Table 2, 398 (100%) participants represented the ability to use information technology in tracing and collecting *hadiths* related to the topic of *shalat*. Furthermore, based on this information, all of them were surveyed to explore what kind of information technology they used in searching and gathering *hadiths* related to the topic of prayer. The survey results are as follows. There were 322 (80.90%) participants who used blogs, 25 (6.28%) used Twitter, 39 (9.80%) used Facebook, and 12 (3.2%) used *hadith* applications. It can be seen that in the aspect of technological literacy, only 12 (3.2%) participants showed the ability to search for and choose information technology that is relevant to the *hadith*.

Furthermore, to find out what applications they used in tracing the *hadith*, semi-structured interviews were carried out with the 12 participants who claimed to use the *hadith* applications. The question was, "What application did you use to trace the *hadith*?"

From the results of the semi-structured interviews, three participants (24%) used the Maktabah Syamilah software, four (33.3%) used the Jawami'ul Kalim software, and five (41.67%) used the EHK9I software. Based on the answers, a follow-up question was asked, "Do you understand the function of each feature available in the application?" Nine participants (75%) responded that they understood it and three (24%) participants did not understand it, especially the softwares in Arabic, namely Jawami'ul Kalim and Maktabah Syamilah. Therefore, in the aspect of technological literacy, only 9 participants (2.26%) understood the features of the application they used.

In the aspect of human literacy as shown in Table 2, nine (2.26%) participants showed the ability of indicator 1 namely expressing the quality of a *hadith*. The reason for this was assumed that the information technology they used presented information related to the quality of a *hadith*. Meanwhile, 389 (97.74%) did not show this ability because the information sources they used were less relevant. As for the second indicator in the aspect of human literacy, seven (1.76%) participants were able to represent the ability to respond to the *hadith* raised by his friend when presenting the results of his assignment.

Based on that test results, the ability to distinguish the elements of the *hadith* as in the second indicator in the aspect of literacy and the ability to determine the quality of the *hadith* as in the first indicator in the aspect of human literacy, it was suspected that the participants' insight about the science of *hadith* has not been evenly distributed. Therefore, the extent of experience and insight that the participants gained about *hadith* were explored by using a survey.

The results showed that 398 (100%) participants claimed to have studied the science of *hadith*. A total of 300 (75.4) participants stated that they learned lessons about *hadith* in school and 278 (69.8%) participants received *hadith* lessons outside of school. Regarding question number 3, the participants experience in studying *hadith* was explored by conducting semi-structured interviews with 3

participants. The question asked was “Where did you get *hadith* lessons other than school?” Participant 1 answered “from *pesantren* (Islamic boarding school).” Participant 2 from Islamic study groups in their neighborhood and four participants answered “from parents at home.”

In addition to exploring about the participants’ experience in studying the *hadith*, there was also a survey to explore the extent of insight they had gained from the experience of studying the *hadith* in the participants’ perspectives. The survey results above show a gap with the results of the test as shown in Table 2, especially in question no. 2, a number of 365 (91.70%) people stated that they understood the elements in a hadith while the test results showed the ability to distinguish elements of hadith namely *matan* and *sanad* only amounted 98 (24.62%) people. Furthermore, in question no. 3, a number of 351 (88.19%) stated that they understood the distribution of hadith in terms of quality, but the test results that showed the ability to express the quality of a hadith were only 9 (2.26%) people. However, this survey results are a recognition form of the ability of the participant’s own perspective, but the test evidence shows different results. Therefore, the test results in Table 2 become a reference for us as a portrait of the participant’s initial ability in hadith literacy.

Based on the information from question 1 on the understanding of the basics in *hadith* learning which are the terminology and division, it was suspected that there was a disparity of understanding among the participants because in the *hadith* discourse there are also terms such as *hadith*, *sunnah*, *khobar* and *atsar* (Nasr, 2013; Nirwana, 2012; Suryadi, 2011). Therefore, a number of tests were administered in the form of questions to measure whether the subjects had an understanding of the terminology of *hadith* and its divisions. The test results showed that 124 (31.15%) participants had an understanding which is different from the participants’ claim as in Table 2 that 323 (81.15%) participants understood the terminology and types of *hadith*. It can be concluded that the participants’ insight related to the science of *hadith* needs to be improved.

4.2. Pre-Action Evaluation

The results of the pre-action analysis implied that the participants’ literacy in *hadith* was still very minimal and needed to be improved. This can be seen from the data on the average percentage obtained in each aspect of literacy. The percentages were added up and divided by the number of indicators in each aspect.

The data literacy was 41.71%, technological literacy was 35.09%, and human literacy was 2.01%, which were assessed using indicators presented in Table 1. This means that the participants’ *hadith* literacy was very minimal, especially in the problem of human literacy, which was to determine the authenticity of a *hadith* through the study of the narrators of the *hadith*.

In addition to the above aspects, the literacy on appropriate and representative technology in finding *hadith* information also needed to be strengthened because the participants tended to rely more on social media and blogs that are not representative in providing *hadith* information. This indicated that they have not

been able to choose the right information technology in accessing *hadith* information. Likewise, the data literacy also needed to be strengthened because data literacy is not only the ability to collect *hadiths* but also relates to their insights about the science of *hadith*.

In the pre-action stage the average number of participants who were able to represent *hadith* literacy in each aspect was below 50%. Through the focus group discussions, target number of participants capable of representing the literacy ability of *hadiths* would be raised at a minimum of 75%.

4.3. Action Implementation

To achieve the target, the steps to improve the *hadith* literacy were structured. The steps referred to Kern's (2000) theory, namely Responding, Revising and Reflecting (3R). The first R, Responding, was implemented in the pre-action stage by capturing the participants' initial abilities in *hadith* literacy. Therefore, in the action stage, the second R (Revision) was implemented, which includes various activities in designing improvement efforts based on the problems, starting from the planning, the media used, and the implementation of improvements in learning.

4.3.1. Step 1. Formulation of Hadith Learning Objectives

At this stage, the lesson plans to improve the literacy of the participants in tracing the authenticity of the *hadith* were made. Tracing the authenticity of a *hadith* is closely related to the ability to perform the *takhrij hadith*. Hence, the learning objectives made referred to the objectives of the *takhrij hadith* namely:

- a. Identifying the place of *hadith* by referring to its fundamental source
- b. Identifying narrators of *hadith* by assessing their position from the view of *al-Jarh wa al-Ta'dil*, a systematic approach to criticize the position of the narrator
- c. Stating *sanad* (chain of narrators of *hadith*) related to their connection and *matan* (narrative content).
- d. Determining the authenticity of a *hadith*, namely *sahih* (acceptable), *hasan* (good), *da'if* (weak) or *maudu'* (fabricated or false).
- e. Recognizing the status and reliability of the *hadith* and its category based on *sanad* and also *matan* (Al-Rajan, 2018; Qomarullah, 2016; Zulkipli et al., 2017).

4.3.2. Step 2. Selection of Hadith Learning Media

To achieve the learning objectives associated with the characteristics of the participants as digital natives attached to the world of internet technology, it is necessary to use media that can facilitate the characteristics of the participants and the purpose of learning. Therefore, the learning media is a necessity in the learning process (Gillen, Staarman, Littleton, Mercer & Twiner 2, 2007; Peppler & Kafai, 2007; Salomon & Clark, 1977; Willett, 2007). Based on the results of focus group discussions, at least 10 characteristics were needed to achieve the *takhrij hadith* learning objectives. The characteristics are as follows:

1. Presenting the *hadith* source
2. Presenting the position of the *hadith* in the book and chapter
3. Presenting the *sanad* chain information

4. Presenting the *matan* (*hadith* content)
5. Presenting the *sanad hadith* reinforcement for another *sanad hadith* and the similarity of *matan* (*Syawahid and Mutaba'at*)
6. Presenting the narrator's biography
7. Presenting the type of *hadith* based on *sanad*
8. Presenting the type of *hadith* based on *matan*
9. Presenting the law of the *hadith*
10. Presenting the Indonesian translation

Based on the 10 criteria, existing *hadith* learning media were analyzed. The media were those applications that had been used by the 12 participants in the pre-action stage and relevant learning media that had not been used by the participants. At least five applications were reviewed with reference to the 10 criteria. The results of the review are presented in the following Table 3:

Table 3. Results of Hadith Learning Media Analysis

No	Criteria	Application				
		Ensiklopedi Hadits Kitab 9 Imam	Maktabah Syamilah Version 3	Jawa mi'ul Kalim	Mawsu'Ah al-Hadith al-Nabawi al-Syarif	Al-Kutub al-Tis'ah
1	Presenting the <i>hadith</i> source	✓	✓	✓	✓	✓
2	Presenting the position of the <i>hadith</i> in the book and chapter	✓	✓	✓	✓	✓
3	Presenting the <i>sanad</i> chain information	✓	✓	✓	✓	✓
4	Presenting the <i>matan</i> (<i>hadith</i> content)	✓	✓	✓	✓	✓
5	Presenting the <i>sanad hadith</i> reinforcement for another <i>sanad hadith</i> (<i>syawahid</i> and <i>mutaba'at</i>)	✓	✓	✓	X	✓
6	Presenting the narrator biography	✓	✓	✓	X	✓
7	Presenting the type of <i>hadith</i> based on <i>sanad</i>	✓	✓	✓	X	✓
8	Presenting the type of <i>hadith</i> based on <i>matan</i>	✓	✓	✓	X	X
9	Presenting the law of <i>hadith</i>	✓	X	✓	✓	✓
10	Presenting the Indonesian translation	✓	X	X	X	X

Based on the table, out of the 5 available applications, only the EHK9I meets the established criteria. Therefore, the media used in the effort to improve the participants' ability to trace the authenticity of a *hadith* was the EHK9I application. Additionally, for practical purposes, the application used was the mobile phone version because almost all of the participants had a smart phone.

The EHK9I application is an application designed by Lidwa Centralka. It contains several features including:

1. Available on Android, iOS and Windows
2. Contains 62,000 *hadith* from 9 prominent *imams*.
3. Presents highlights, notes, share, and copy *hadith*
4. Presents the related *hadith* complete with degrees
5. Presents the narrators' information complete with statistics
6. Presents thematic collections of *hadith* and types of *hadith*
7. Contains a search engine feature to search by *hadith* number or *hadith* text.

In addition to the features, there were several information presented in every *hadith* display as in Figure 1.

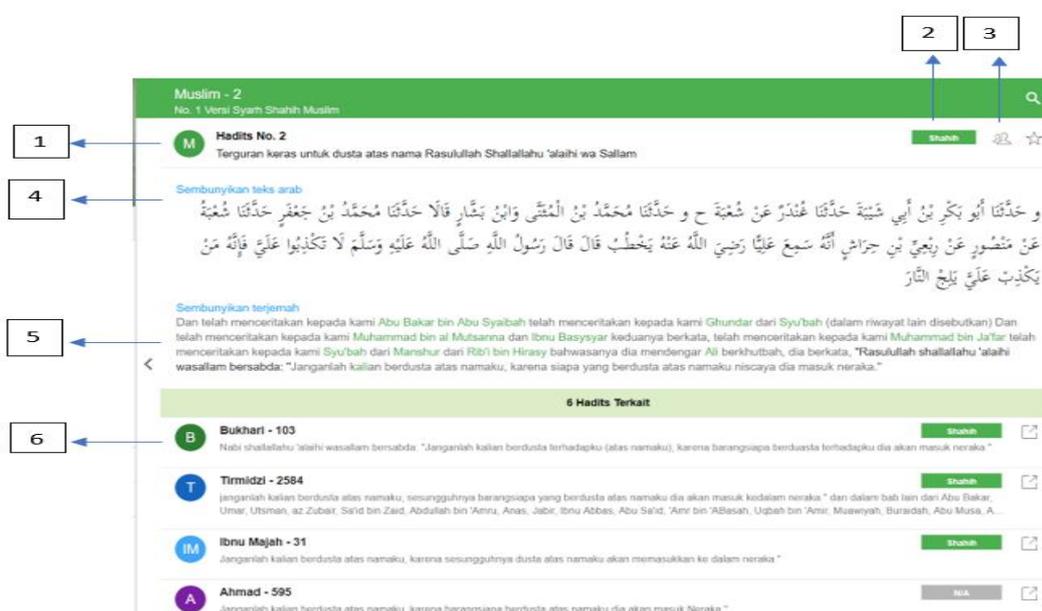


Figure 1. The display of Hadith EHK9I Application

The display of the *hadith* in this application provided the following information:

1. The number of *hadith* sequence from a book
2. The quality or degree of a *hadith* (*hadith* law)
3. *Isnad* information
4. *Hadith* text to ease reading
5. The translation of Arabic texts that help to understand the *hadith* text
6. Several *hadiths* that are relevant to the *hadiths* in display

In addition to using the EHK9I application, the Android-based e-book application, Ulumul Hadith, was utilized to strengthen the participants' knowledge related to the science of *hadith*.

This application was designed by Az-Zikr Studio. It presents information related to concepts in the study of *hadith* science in terms of the meaning of the *hadith*, division of the *hadith*, types of *hadith*, elements of a *hadith*, and so on.

Thus, there were two applications to be used in an effort to improve literacy skills in tracing the *hadith*. However, this research is focused on the EHK9I application, and the second application was an enrichment to support the participants' understanding and skills in carrying out the *takhrij hadith*.

4.3.3. Step 3. Update of Hadith Insight using Ulumul Hadits Application

In this step, a number of materials related to the science of *hadith* were given to the participants classically. The participants were instructed to search and download the application and then install it.

In advance, the features available in the application were explained. The Ulumul Hadits application provided a number of materials that include the terminology of the *hadith*, the scope of the *hadith* study, elements of the *hadith*, and the types and quality of the *hadith*. The provision of material was done in three meetings. In each meeting the participants received a task to review the content of the material in the application to be discussed in the next meeting.

After providing the materials, all participants were tested by asking them several questions to measure their knowledge about *hadith* through *Hadith Insight Test*. The result is presented in Table 4.

Table 4. Hadith Insight Test Results

Scoring Aspect	Number	Percentage
Understand the meaning and types of <i>hadith</i>	398	100
Differentiate <i>matan</i> dan <i>sanad</i>	381	95.72
Understand the classification of <i>hadith</i> by its quality and requirements	383	96.23

Table 4 shows that the participants' level of mastery of the science of *hadith*. Based on the three assessment indicators, there were a number of improvements. In terms of the *hadith* terminology, 398 (100%) participants showed understanding in the post-test which means there was an increase of 68.85% from 124 (31.15%) participants. In the second assessment aspect, 381 (95.72%) participants showed the ability to distinguish the *matan* and *sanad* of *hadith*. Compared to the test results in Table 2, which was 98 (24.62%) participants, there was an increase of 283 (71.1%) participants. Furthermore, in the aspect of understanding the classification of the *hadith* and the requirements, 383 (96.23%) participants showed the ability. The test results in Table 2 only showed 9 (2.26%) thus it increased by 374 (93.96%) participants.

The test results above are the barometer of the theoretical mastery of *hadith* science. Therefore, to ensure that the participants' theoretical mastery was applicable, it was necessary to prove their ability by practicing the *takhrij hadith*. The practice required a representative media which was the EHK9I application. Therefore, the participants needed to have and understand how the application works.

4.3.4. Step 4. Understanding the EHK9I Application

The participants were instructed to download the EHK9I application from <https://store.lidwa.com>. Android, iOS, and Windows versions were available and the participants chose a version suitable with the facilities they had. From their observations, they chose to download the Windows version because all participants were Windows-based users.

After they downloaded the application, they were guided throughout the installation process. Shortly after the installation, there was an offer to upgrade to the pro version. After they received explanation about the different features in the free and paid versions, they were suggested to upgrade to the pro version with the consequence of paying the subscription to get the full features.

After making sure that all participants had installed the application in the pro version, all the features in the application were explained covering how to use the application and the operational steps based on the criteria as in Table 3. After these stages, a survey was administered to explore the participants' perceptions towards the EHK9I application. The survey result is presented in Table 5.

Table 5. Participants' Perception towards EHK9I

No.	Statement	SD	D	RD	A	SA
1	The EHK9I application grows my motivation to learn more about hadith.				332	66
2	The EHK9I application is very easy to understand and practical to use.				380	18
3	The EHK9I application is economical compared to buying printed books				392	6

Note: SD (Strongly Disagree), D(Disagree), RD (Rather Disagree), A (Agree), and SA (Strongly Agree)

Table 5 above showed that the participants stating that the EHK9I application fostered their motivation to explore the *hadith*. Moreover, EHK9I was very easy to understand and practical to use at an economic price compared to the price for having printed books so that it was affordable for all students.

4.3.5. Step 5: Applying EHK9I in Takhrij Hadith Process

The participants were guided to explore a *hadith*, in this case a *hadith* about reading al-Fatihah in *shalat*. There are several phases taken in this step.

a. Exploring Hadith Text Using EHK9I

The participants were instructed to open the EHK9I application. They were instructed to enter keywords. In entering keywords, they can search for them based on meaning, number, or *hadith* text. In terms of searching the *hadith* related to Surah Al-Fatihah, the keywords entered were "Al-Fatihah" or "Fatihatul Kitab". Using this search engine facility, the participants could also easily track the existence of the *hadiths* that are scattered online to find out the position of the *hadith* in the canonical books. The method used was by copying the *hadith* that was on the internet, then pasting it in the search bar, and it would appear whether or not the text of the *hadith* existed in the nine books book of *hadith*.

b. Identifying *Sanad* and *Matan*

After entering the keywords, the display will appear as shown in Figure 2.

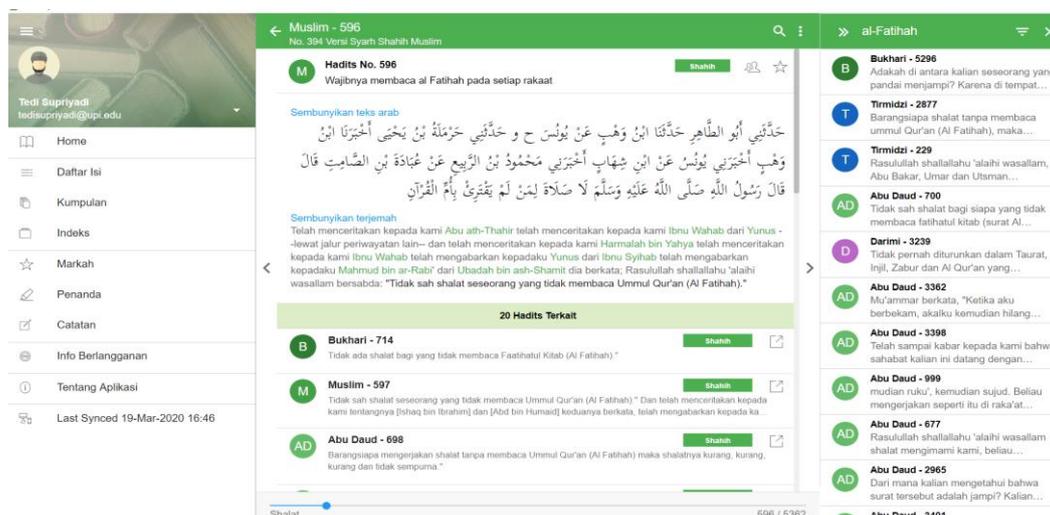


Figure 2. Display of Hadith related to Surah Al-Fatihah in the EHK9I Application

From the display, the participants were instructed to identify which ones were included as *matan* and *sanad* in the series of *hadiths* and to review *hadith* that were relevant to the ones displayed. After that, they were instructed to identify the similarities and differences between the *matan* and *sanad*, between the *hadith* being studied and the *hadith* that are considered relevant in the application.

c. Analyzing and Assessing the Narrator in the Jarh Wa Ta'dil Framework

After analyzing *sanad* and *rawi*, the participants were instructed to analyze the narrators of the *hadith* and explore information about the assessment of the narrators according to ulama *jarh wa ta'dil*. By clicking on number 3 as shown in the Figure 1, the biography of the narrator is presented, the number of *hadith* narrated and in any book, as well as the assessment of the ulama *jarh wa ta'dil* about the narrator. For example, in the *hadith* there was a narrator named Ahmad bin Amru bin Abdullah bin Amru as-Sarh. Then the information obtained from the narrator in the EHK9I application is shown in Figure 3.



Figure 3. Display of the Narrator's Information

d. Determining the Authenticity of the Hadith Using the Application

To determine the law or the quality of a *hadith*, the participants clicked no. 2 in Figure 1. Then the information related to the quality of the *hadith* was presented. By knowing the quality of the *hadith*, the participants could determine how reliable the *hadith* was in relation to its implementation as explained in the science of *hadith*.

4.3.6. Step 6: Learning Evaluation

After all of the steps and process conducted, this was the last step to portray the participants' *hadith* literacy skills related in the post-action. The participants were assigned to analyze the *hadith* around the topic of *shalat*. Then they were instructed to answer a number of questions related to the *hadiths* they were studying. The assessment was developed indicators presented in Table 1. By comparing the results of the pre-test as shown in Figure 1 and the results of the post-test, the evaluation of the practice of the *takhrij hadith* using EHK9I is described in Table 6.

Table 6. Hadiths Practice Evaluation Results Using EHK9I

No	Literacy Aspect	Description	Indicator	Percentage
1	<i>Hadith</i> Data Literacy	The ability to read, analyze and make conclusions of thinking based on obtained data and information (big data)	a) Able to find and collect thematic <i>hadiths</i> .	100%
			b) Able to distinguish elements of the <i>hadith</i> (<i>matan</i> and <i>isnad</i>).	96%
			c) Able to mention the source/primary book related to a <i>hadith</i> .	96%
			d) Able to express the content of a <i>hadith</i> according to the explanation of <i>ulama</i> .	92.2%
2	<i>Hadith</i> Technology Literacy	Ability to understand machines and technology applications, and do work using technology-based products	a) Able to utilize information technology in studying <i>hadith</i> .	100%
			b) Able to search for and choose information technology related to the <i>hadith</i> appropriately	97%
			c) Able to understand the features in the <i>hadith</i> information technology being used	94.4%
3	Human Literacy related to the Narrator of <i>Hadith</i>	Communication skills, collaboration, critical thinking, creativity and innovation	a) Able to express the quality of a <i>hadith</i> accompanied by the narrator's narration analysis.	96.2%
			b) Able to respond to a <i>hadith</i> that is used as a basis for someone	95%

Table 6 shows that by using the EHK9I resulted in an increase in the participants' ability to trace the authenticity of *hadith* in several indicators on each aspect used as the barometer of the *hadith* literacy skill.

4.4. Post-Action Evaluation

This stage is the implementation of the third R or Reflecting, which is evaluating the whole set of actions carried out in the research activities. This final stage was to gain an overview of the extent to which improvements had been achieved in solving the research problems. The learning results illustrated the fact that with the selection of appropriate learning media, the use of the Ulumul Hadith application and EHK9I was the appropriate solution to improve the participants' ability to trace the authenticity of a *hadith* (*takhrij hadith*). The increase occurred in line with the increasing literacy skills which included three aspects namely data literacy, technological literacy, and human literacy, which were assessed using indicators presented in Table 1. As an illustration of this improvement, a comparison between the *hadith* literacy in the pre-test and post-test stages is presented.

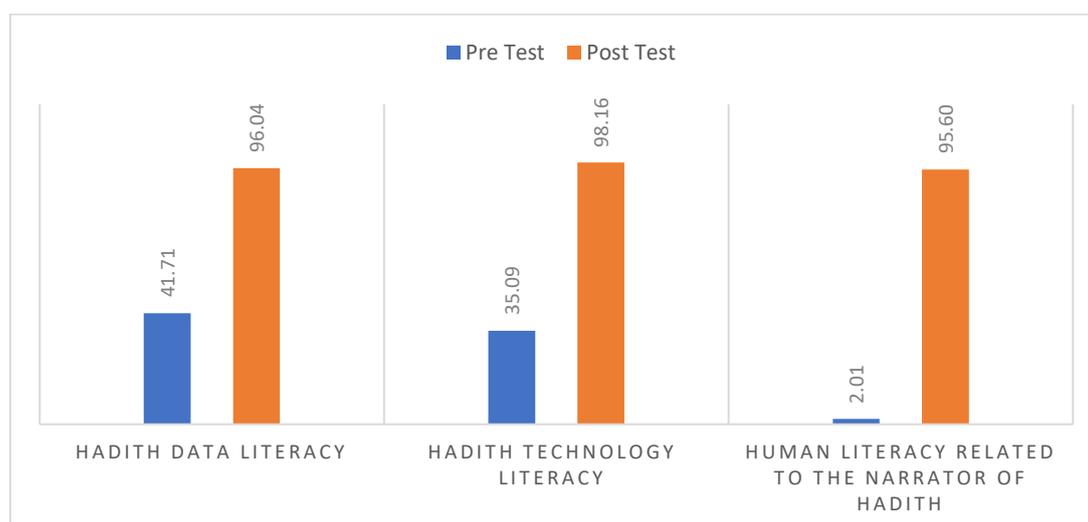


Figure 4. Comparison of Pre-Test and Post-Test Results of Hadith Literacy Skill

Figure 4 depicts that in the aspect of data literacy, the participants' ability was at 47.71% in the pre-test and then increased to 96.04% in the post-test. This means that in the aspect of data literacy, an increase of 54.33% were gained. In the aspect of technological literacy, the participants were at 35.09%, and it increased to 98.16% in the post-test. this means that in the aspect of technological literacy an increase in capability is 63.07%. In the human literacy aspect, the participants' ability increased to 95.6% from 2.01%. This means that in the aspect of human literacy, an increase of 93.58% occurred. Thus, the use of Ulumul Hadith and EHK9I applications could improve the participants' *hadith* literacy.

5. Discussion

The ability to perform *takhrij hadith* is closely related to one's literacy skills in the field of *hadith*. Literacy is not limited to reading and writing but it is also related to the demand to understand information critically and analytically (UNESCO,

2003). For the millennials who live in a digital era, special abilities are needed in using information in digital format, namely digital literacy (Miftah et al., 2016). Digital literacy is very important to have because someone's misunderstanding in the digital world opens up opportunities for various abuses of digital media that occur at the personal, social, and national levels (Pratiwi & Pritanova, 2017). Therefore, literacy skills are must be possessed in the face of the 21st century (Antoro, 2017, p. 5).

In facing the Industrial Revolution 4.0 or the era of disruption, "new literacy" is needed in addition to old literacy. Old literature includes the competence of read-write-count. Whereas, new literacy includes data literacy, technological literacy, and human literacy. Data literacy is related to the ability to read, analyze and make conclusions of thinking based on data and information (big data) obtained. Technology literacy is related to the ability to understand how machines work. Application of technology and technology-based work of products to get maximum results. Human literacy is related to communication skills, collaboration, critical thinking, creative and innovative (Furqon, 2018).

It can be understood that the literacy of the *hadith* in the 4.0 era is not only limited to the activities of reading and writing the *hadith* and analyzing the quality of the *hadith*. Rather, it includes data literacy, technology literacy, and human literacy. Data literacy is related to the ability to read, analyze, and make conclusions of thinking based on data and information (big data). Technology literacy is related to the ability to understand how machines work and technology applications, and to work using technology products to obtain maximum results. Human literacy is related to communication skills, collaboration, critical thinking, creativity, and innovation (Furqon, 2018).

The lack of *hadith* literacy skills in the information technology era affect vulnerable people in which they can be exposed to radical ideology. The internet or social media have become media for radicals and terrorists to propagate their radical narratives in the name of religion (Sulfikar, 2019). The internet makes it possible to spread information quickly, with little risk, and inexpensively to a variety of constituents, from potential recruits to potential partners in terrorist organizations (Seib & Janbek, 2010). The results of Golose's research revealed that the efforts made by terrorist groups in the cyber world include 9P namely, Propaganda, *Perekrutan* (Recruitment), *Pelatihan* (Training), *Penyediaan Logistik* (Logistics Provision), *Pembentukan paramiliter secara melawan hukum* (Formation of unlawful paramilitaries), *Perencanaan* (Planning), *Pelaksanaan serangan teroris* (Conducting terrorist attacks), *Persembunyian* (Hiding), and *Pendanaan* (Funding) (Golose, 2015, p. 31).

That is why literacy skill is a social function of a person in using his literacy to contribute to the community (Keefe & Copeland, 2011). The development of someone's literacy will be effective if done in a community context. This means that one's literacy ability is not only focused on improving cognitive abilities and processing information (Webber & Johnston, 2000) but also utilizing it in the context of community development (Nuswantara & Savitri, 2018).

6. Conclusion

This research has shown the fact that the implementation of the Kern's (Kern, 2000) model of Responding, Revising and Reflecting in this research succeeded in showing an increase in the participants' literacy skills in the field of *hadith*. The increase could be seen in several aspects of literacy, namely in data literacy by 54.33%, technological literacy by 63.07%, and human literacy related to narration of the *hadith* by 93.59%. These improvements indicated that the participants' literacy skills exceeded the target set by 75%. In post-action, the data literacy was resented at 96.04%, technology literacy at 98.16% and human literacy related to narration of *hadith* at 95.60%. The increase is inseparable from the steps taken in the Revising phase, which produced six reflective action steps including the selection of Ulumul Hadith and EHK9I as the learning media. Using these applications in the learning process, the problems that occurred in the *hadith* learning process could be minimized. In addition, the application helped growing student's critical attitude in receiving *hadith* information in the cyberspace. They can validate the *hadiths* that are spread in cyberspace or in social media. The limitation of this study is that it only covers participants in the West Java region of Indonesia. The same problem in learning *hadith* can occur for academics outside the region and even in other countries. Therefore, it is recommended the application be translated into various languages and conducted in different regional-cultural areas.

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Appendix 1

RESEARCH INSTRUMENT 1

Indicator Development of Literacy Aspect

No	Literacy Aspect	Description	Indicator
1	Hadith Data Literacy	The ability to read, analyze and make conclusions of thinking based on obtained data and information (big data)	5. Able to find and collect thematic <i>hadiths</i> . 6. Able to distinguish elements of the <i>hadith</i> (<i>matan</i> and <i>isnad</i>). 7. Able to mention the source/primary book related to a <i>hadith</i> . 8. Able to express the content of a <i>hadith</i> according to the explanation of <i>ulama</i> .
2	Hadith Technology Literacy	Ability to understand machines and technology applications, and do work using technology-based products	4. Able to utilize information technology in studying <i>hadith</i> . 5. Able to search for and choose information technology related to the <i>hadith</i> appropriately 6. Able to understand the features in the <i>hadith</i> information technology being used
3	Human Literacy related to the Narrator of <i>Hadith</i>	Communication skills, collaboration, critical thinking, creativity and innovation related to the <i>hadith</i> narrators	3. Able to express the quality of a <i>hadith</i> accompanied by the narrator's narration analysis. 4. Able to respond to a <i>hadith</i> that is used as a basis for someone

RESEARCH INSTRUMENT 2

Questions Items on a Test

No	Questions
1	Find one <i>hadith</i> related to <i>shalat</i> .
2	From the answer of question no 1, mark which one is <i>rawi</i> and <i>sanad</i> .
3	From the answer of question no 1, what is the source of that <i>hadith</i> ?
4	Explain the content of that <i>hadith</i> according to one <i>ulama</i> .
5	Do you use information and technology or application in finding the <i>hadith</i> ? If so, what is the application you use?
6	If you're using IT or software application, do you know how to operate it?
7	Does the use of IT help you to learn <i>hadith</i> ?
8	From the answer of question no 1, how is the quality of that <i>hadith</i> ?
9	Comment on your friend's cited by a peer, seen from the quality and content.

RESEARCH INSTRUMENT 3

Survey

No	Questions on Literacy Aspect
1	Have you ever studied the science of hadith?
2	Have you ever received lessons about hadith in school?
3	Have you ever received lessons about hadith outside of school?
4	Have you sufficiently understood the terminology of hadith and kinds of hadith?
5	Have you sufficiently understood the elements that a hadith must have?
6	Have you sufficiently understood the division of hadiths by their quality and requirements?

RESEARCH INSTRUMENT 4

Hadith Insight Test

No	Questions on Literacy Aspect
1	Mention aspects related to hadith.
2	From the hadith you cited, which one is sanad and matan?
3	How about its hadith classification seen from the quality and the characteristics?

RESEARCH INSTRUMENT 5

Survey on the EHK9I

No.	Statement	SD	D	RD	A	SA
1	The EHK9I application grows my motivation to learn more about hadith.					
2	The EHK9I application is very easy to understand and practical to use.					
3	The EHK9I application is economical compared to buying printed books					

Note:

SD= Strongly Disagree

D= Disagree

RD= Rather Disagree

A= Agree

SA= Strongly Agree