Virtual Pesantren: The Sustainability of Pesantren Learning in Facing the Challenges of the 4.0 Era

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Abstract: Virtual pesantren was a boarding school in a new form that operates completely virtually to keep up with technological developments. There were concerns about this virtual pesantren because it was possible to disrupt the uniqueness of the pesantren itself, especially the learning system. This study aimed to analyze the learning system in virtual pesantren as the sustainability of pesantren learning in facing the challenges of the 4.0 era. This research was library research with data collection techniques using the documentation method, and data analysis using descriptive analysis. The results of the study reveal that the learning system in virtual pesantren was entirely virtual-based. But even so, this virtual pesantren had a clear curriculum, the learning methods used include online consultations where the technique was in the form of questions, answers or discussions, regular online recitations, and video tutorials. Issues related to concerns about virtual pesantren can interfere with the uniqueness of pesantren were discussed.

Keywords: pesantren; virtual pesantren; technology; 4.0 era

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Introduction

Pesantren is a unique and distinctive educational institution. This is not only because it is an institution that has existed for a very long time in Indonesia, but also its ability to display a unique culture, method, and network that is not owned by any educational institution (Tyastuti, 2018). In addition, pesantren is also very distinctive with ancestral heritage in the form of Islamic traditions developed by scholars from time to time. Although times are constantly changing and developing, it still can adapt, survive, and make continuous improvements. This is following the legal rules of the pesantren itself, namely *al-muhafadzatu 'ala al-qadim al-shalih wa al akhdzu bi al-jadid al-ashlah*. Pesantren preserves old Islamic values but it wants to develop, looking for new values that are appropriate to the times to achieve methodological accuracy in enlightening the nation's civilization (Damanhuri et al., 2013). Pesantren always actively responds to

contextual conditions that occur in society and gives a role to contemporary problems, even Mudzhar (2008) mentions that pesantren is an agent of change in various aspects, such as agent of civilization, learning, and socio-economic change in society based on Islamic values.

Asrohah (2011) states that pesantren has high adaptability to the times. This happened at least for two reasons; it has a climate of freedom to adapt and adjust to the developments and demands of the times, and it has a tradition of being accommodating to all forms of development.

Even Dhofier as quoted by Royani (2018) describes how the changes in pesantren show their vitality as social, cultural, and religious forces to take part in the development of modern Indonesian culture. However, Ghofir (2019) quoted Azra as saying that it positively followed the times, but did not necessarily adopt it as a whole. Pesantren will not rush to change themselves to keep up with the times, but they will accept the challenges of the times on a limited scale, making adjustments to things that are considered to support the continuity of the pesantren itself. they open themselves up to changes with great prudence. Fadjar (1998) mentions pesantren as local geniuses who addition to maintaining Islamic traditions, also take part in the program to succeed in national development; Steenbrink (1994) termed 'rejecting while following' in the context of modernization of pesantren, which means that it does not necessarily completely reject change but also follow and adopt something that can support the continuity of itself.

This study departs from the flexibility, resilience and adaptability of pesantren to changes and developments. The birth of variants ranging from 'pesantren *salaf*' (traditional pesantren) that have developed into modern to neo-modern is a result of the reality which always tries to be flexible with the demands and challenges of the times and changes (Asrohah, 2013). Pesantren also responds to the challenges of the times which are identical to technological developments and have an impact on the implementation of learning (Keser & Semerci, 2019). One way for pesantren to respond is by giving birth to a new typology in the form of virtual which later became a new trend in the world of pesantren in Indonesia (Mukhibat & Ghafar, 2019). Pesantren can be typologically grouped into three in general, namely *salaf* (traditional), *khalaf* (modern), and *integrated* (mixed) (Lukens-Bull, 2010). Then the virtual pesantren, which is one form of developing pesantren education by utilizing technology and information, here enriches the three previous typologies.

The emergence of this virtual pesantren is not without problems. Fakhrurrozi (2021) expressed his concern that this virtual pesantren would disrupt the uniqueness of the pesantren. Qudsy (2019) revealed that this virtual pesantren could give birth to a crisis of religious authority, for example regarding the crisis of the *Kiai* credibility or the crisis of the authenticity of the religious teachings themselves due to the freedom presented by the internet. So that virtual boarding schools will eventually face the challenges of digital literacy in the implementation of their learning, because the virtual world can present all forms of religious information without any filters (Ja'far, 2019).

Based on these problems, how learning in this virtual pesantren is something that needs to be studied. Therefore, the focus of this research is how learning in virtual pesantren as the sustainability of its learning in facing the challenges of the 4.0 era.

Several studies on this virtual pesantren have been carried out, for example on how it developed, starting from the beginning of the emergence of virtual pesantren in Indonesia (Mukhibat & Ghafar,

2019); virtual pesantren management (Mukhibat, 2020); changes in understanding about pesantren when the term virtual appears (Qudsy, 2019). However, studies on how learning in virtual pesantren as the sustainability of pesantren learning in facing the challenges of the 4.0 era have not been found.

Research Method

The method in this study uses library research which utilizes library sources to obtain research data. Data mining uses the documentation method, where data related to learning in virtual boarding schools is collected and then analyzed based on various documents and related literature. While the data analysis in this study used descriptive analysis techniques with the steps of collecting data, compiling data, and drawing conclusions.

Pesantren in The Industrial Era

Historically, pesantren has always been able to deal with contemporary problems, including issues of technological development (Wiranata, 2019). Pesantren has been oriented towards material development, namely the digitization of materials that are more 'enhancement' oriented (Habibi, 2019). In addition, examples of pesantren such as Mambaus Sholihin Gresik, Bumi Solawat Siduarjo, Amanatul Ummah Surabaya, Tebuireng Jombang and others have also tried to transform religious education into the world of technology, such as opening international, progressive, trans science classes and others (Asnawan & Sulaiman, 2020).

Asrohah (2011) revealed that even though the current of modernity such as industry 4.0 is so strong, pesantren do not just

change. It is not like a *surau* that is unable to survive the challenges of the times, as a result, the number of *surau* is decreasing day by day. It continues to adapt and accommodate to maintain stability and exist. It must be admitted that pesantren address modernity as a foundation to strengthen its identity on the world stage (Shofiyyah et al., 2019). Therefore, nowadays pesantren*s* have finally emerged with a new face, elitist, modern, and have an accountable public trust. There are also several new pesantren with a new orientation and image building (Basyit, 2017).

Basyit (2017) also reveals that the role of pesantren today is not only as social control and social engineering but also as a symbol that connects the rural world with the outside world. In the end, they are so actively participating in building the community; it engaged in education, even economics, agriculture, animal husbandry, moral and spiritual guidance. The government has also positioned pesantren as one of the partners in implementing various programs, such as being a centre for counselling and health services; a centre for the development of appropriate technology for rural communities; the centre of efforts to save and preserve the environment; and what is quite prominent is that pesantren is a centre for community economic empowerment. Pondok Pesantren Al-Ittifaq Bandung, for example, helps students and the surrounding community to be economically independent (Muttaqin, 2011); Pondok Pesantren Robbi Rodliyya Banjardowo Semarang develops appropriate technology in the form of electrical and multimedia engineering technology (Susanto, 2017); Pondok Pesantren Nurul Qarnain Sukowono Jember applies the right technology for making sulfur soap (Sutejo & Rosyidi, 2016); even Pondok pesantren salaf An-Nur Jember tries to empower students and alumni to develop entrepreneurship in the form of mushroom cultivation (Herlina et al., 2020).

Therefore, pesantren are so active in actualizing themselves in facing the challenges of this industrial 4.0 era. The hallmark of society 4.0 is identical to communication skills where; 1) freedom to access news through the internet and online activities without having to interact face-to-face; 2) customization, namely the community is an active consumer, can get something independently; 3) scrutiny, namely a critical attitude in distinguishing reliable and unreliable information; 4) integrity, namely the attitude of being responsible for what is done; 5) entertainment that today's society is more entertaining by using intelligent technology, namely online; 6) speed, which is the focus on speed and instant response because of this intelligent technology; 7) innovation, namely the existence of innovation that is always dynamic, new ideas emerge, new findings and so on (Wurianto, 2019). In addition, the 4.0 era is an era of developing cyber-physical systems (CPSs) where this era is synonymous with artificial intelligence and intelligent technology in the form of robots (Gleason, 2018). Everything is complex in this era, all kinds of information flow very quickly due to internet technology, as well as the birth of intelligent technology so virtual meetings are very familiar today. Everything is completely automatic even in the learning process has changed and no longer relies on face-to-face but has utilised technology to become virtual learning. Therefore, learning in the 21st-century industrial revolution era requires students to master competencies such as collaboration, communication, problem-solving, critical thinking and working as a team (Hughes et al., 2018; Rosa & Orey, 2018) to develop themselves independently with all kinds of learning resources that are so abundant in this era.

The evidence that pesantrens have so far been so active in welcoming the challenges of the industrial era 4.0 is exemplified by several pesantren, for example; Pesantren Rakyat Al-Amin Malang Regency, East Java, although relatively simple, this pesantren subscribes to the internet which is distributed via free wifi for students and the surrounding community (Anwas, 2015). This pesantren has become accustomed to educating its students to be able to create ICT content which is then shared through the social network Facebook; Al-Azhar Islamic Boarding School Lubuklinggau which has tried to familiarize students with technology, namely honesty of students is instilled through technology (Mansur et al., 2016); then Al-Karimiyah Islamic Boarding School and Darussalam Islamic Boarding School, both of which also provided students with general and social knowledge, practical work skills to be able to live independently in society, and utilize information technology in learning activities (Damanhuri et al., 2013). This has indirectly integrated skill and spiritual competence into one learning package. In other words, it is in such a way develop themselves not to be out of date and actively participate in equipping their students through learning activities to be able to survive in the future through skills, knowledge, and spirituality.

This is in line with what was expressed by Jamaluddin (2012) quoted Daulay as saying that today's pesantren must have a different orientation by adding skill material. There are 3 H's, namely head, heart, and hand; This means that students must know (head), faith and piety (heart), and the ability to work (hand). Furthermore, it is in the era must be able to modify the needs of the community with the aim of pesantren as an institution for fostering and empowering the people. Likewise, Sholihah (2012) stated that pesantren is an advanced Islamic educational institution. Even though it is the oldest Islamic educational institution in Indonesia, in the era of the industrial revolution 4.0, it is still relevant. Advances in information and

communication technology that gave birth to digital learning concepts such as e-learning have also brought pesantren to transform into *e*-pesantren. The concept of *e*-pesantren is not only helping the pesantren to improve the quality of learning, but it can also help pesantren related to da'wah activities to spread Islamic values. One example of a pesantren that is trying to develop and implement the concept of an *e*-pesantren is Pondok Pesantren Terpadu Al-Yasini where all kinds of it services can be accessed in digital form and can be accessed from various devices via a web browser (Pradana et al., 2017). In addition to *e*-pesantren, the term virtual pesantren has also emerged, namely, a new model pesantren that does not have a real form and place, but has the same function as other conventional pesantren as a *tafaqquh fiddin* institution and provides religious guidance (Rifa'i, 2016). An example of this virtual pesantren is Pondok Pesantren Daarut Tauhid Bandung (Nur'aeni, 2005). The use of technology in this pesantren is considered a medium to achieve goals faster and easier, there is nothing to be afraid of using technology as long as technology is used positively.

Thus, the 4.0 era is an era where physical boundaries have been erased by technological advances (Arifin, 2012), everyone can have a meeting without having to be in the same location and face to face. Therefore, pesantren try to adapt to this condition so that a virtual pesantren was born. However, it must be admitted that the term virtual or online pesantren as previously mentioned requires more in-depth study. This is because the term 'virtual' which is juxtaposed with pesantren allows the core components of the pesantren such as the physical complex to be lost, including who the *Kiai* is and who the students are, and how the learning is.

Result and Discussion

Virtual pesantren can be said to be pesantren that build their buildings on virtual world land. Arif Hidayat, an alumnus of pesantren in Pati, Central Java, who is currently conducting religious studies in Cairo, Egypt, and Arif Rakhmat Wibianto, a webmaster writer who is claimed to be the pioneer of the emergence of the term virtual pesantren (Qudsy, 2019). Virtual pesantren appeared for the first time on August 11, 1999, in the form of a mailing list and still has 332 members. Meanwhile, it has been used since 2000, although in 1999 through the media mailing list that had surfaced. The emergence of this virtual pesantren is a natural thing because it tries to be in line with the development of intelligent technology where humans today are very inseparable from technological devices and through this technology can do anything, carry out activities without worrying about space and time, including humans can learn through this smart technology device (Wurianto, 2019).

There are two reasons why the term virtual pesantren is used; *first*, as a sense of reverence and pride for pesantren which is the oldest traditional-formal educational institution in Indonesia; *second*, the term 'virtual' is a representation of the alternative of providing religious information services that make it easier for Muslims to obtain religious knowledge. So in the next stage, a virtual pesantren was born in the form of a website at the address www.pesantrenvirtual.com.

The virtual pesantren at www.pesantrenvirtual.com is not an ordinary boarding school and then conducts virtual learning. The proof that this virtual pesantren is not included in the usual typology reveals several things as its characteristics and uniqueness. As written on the website, there are three unique features of

virtual pesantren; *First*, management is carried out completely virtually. Communication between management is done via e-mail. Although there is a physical building (which is also not permanent), the place is only a kind of forum for *bahtsul matsail* (consultation) to decide and study various religious issues. *Second*, the *santri* and the caretaker (*Kiai*) have never met face-to-face. There are some of the administrators themselves who have never met face-to-face; and the *third* uniqueness is related to the teaching system, where although this virtual pesantren, its emergence was inspired by the demands and challenges of the technological era, the learning system uses a direct question and answer model. This is similar to the sorogan method of conventional pesantren.

Thus, virtual pesantren form their characteristics when compared to the typology of pesantren as previously stated by Lukens-Bull (2010). Virtual pesantren is not *salaf* pesantren which the viewed from the aspect of learning activities, *salaf* pesantren only prioritizes religious education and character development. The learning activities of *salaf* pesantren only focus on teaching classical texts as essential education (Lukens-Bull, 2010). On the other hand, virtual pesantren does not only focus on religious studies, the virtual pesantren website provides training such as Islamic boarding school training, training to strengthen the identity of students, and even vocational boarding schools. In addition, virtual pesantren also present contemporary studies in addition to classical Islamic studies, such as the values of peace in Islam, ethics of Islamic dialogue and negotiation, Islamic business, Islamic transaction patterns, Islamic online trading concepts, e-commerce, Islamic commerce, Islamic food ethics, food processing and marketing, Islamic diet, Islamic dress code and Islamic cosmetics, Islamic investment, *sharia* banking, Islamic

mutual funds, Islamic financial institutions, and so on.

Likewise, virtual pesantren is not the same as *khalaf* or *terpadu*. The *khalaf* and *terpadu* pesantren have a physical school building with formal learning activities in it. While virtual pesantren certainly do not have buildings such as physical school buildings, mosques, and even learning activities tend to be classified as non-formal learning. Thus, students in virtual pesantren are the general public and not students of a certain age and then classified according to educational level standards. Based on this uniqueness, virtual pesantren is present as a new model of pesantren.

Some large Islamic boarding schools also have websites such as virtual boarding schools. Pondok Pesantren Langitan with the site www.langitan.net, Pondok Pesantren Tebuireng with www.tebuireng.net, Pondok Pesantren Gontor with www.gontor.ac.id, and Pondok Pesantren Sidogiri with www.sidogiri.net (Qudsy, 2019). Thus, the community can access pesantren anywhere and anytime. However, they are not a typology of virtual pesantren. Because these pesantren*s* may be *khalaf* or *terpadu* pesantren, but on the other hand they try to use technology in their educational operational activities. While virtual pesantren are Islamic boarding schools on the internet itself, Islamic boarding schools deliberately builts in cyberspace.

In this regard, as previously stated, there are concerns that it will interfere with the uniqueness of the pesantren, such as the loss of the physical form of the cottage. Likewise, it can give birth to a crisis of religious authority, for example regarding the crisis of the *kiai*'s credibility or the crisis of the authenticity of the religious teachings themselves because of the freedom that the internet brings. Qudsy (2019) revealed an interesting thing about this, according to him, pesantren*s* need and are needed to always be

present in society, and pesantren*s* can meet these needs amid the swift currents of globalization, one of which is by transforming through the walls of physical buildings to be present in cyberspace. Furthermore, Qudsy (2019) also stated that pesantren*s* are certainly not optimal in meeting their thirst for information, especially those related to Islam, modern urban communities tend to be busy with high mobility if they allow themselves to be confined within thick building walls.

While matters relating to the credibility of the Kiai or the crisis of the authenticity of religious teachings, the virtual pesantren on the website page states the goal is to help Muslims who have difficulty attending and obtaining formal Islamic education and facilitating it with various activities that are easy to reach, fast and more personal equipped with reliable and complete Islamic data and literature. Thus, the virtual pesantren is fully responsible for the credibility and reliability of religious teachings.

Virtual pesantren also has a vision and mission; the vision is as a forum to build, develop and utilize Islamic education media with a global perspective; and the mission is to build media, facilities, and infrastructure that support the implementation of distance Islamic education, particularly through the internet, as well as other media using sophisticated and integrated communication technology (Rifa'i, 2016).

Thus, based on the vision, mission and goals, virtual pesantren want to educate a good 4.0 community where the characteristics are; freedom to access news via the internet and online activities; customization, namely the community is an active consumer, can obtain something independently; scrutiny, namely a critical attitude in distinguishing reliable and unreliable information; and speed, i.e. focus on speed and instant response due to this

intelligent technology. It makes the public easier to access Islamic studies, indirectly facilitates the community to obtain the necessary information about Islamic studies independently, and provides certainty about the reliability of Islamic studies with full responsibility.

Virtual pesantren is certainly not just a learning agenda using online tools. It has clear institutions and management. It is written on its website that the management of www.pesantrenvirtual.com currently has four locations, in Indonesia (Jakarta and Surabaya), Egypt (Cairo), Pakistan (Islamabad) and also the United States (Massachusetts). It is managed with modern management. Each management has communication and flow of duties in a neat and recorded systematic manner. There are editorial sections, teachers, editors, and web teams, as well as day-to-day executives and people in charge. Everything is done professionally.

Regarding the learning system, virtual boarding schools certainly have a curriculum. It is listed on the website in the form of categories, for example, the category of daily fiqh, environmental fiqh, contemporary Islam, economic studies, and so on. The learning method is indeed fully assisted by technology, but it is still relatively simple, for example, the online consultation method through WA groups where the technique must be question and answer or discussion; regular online recitations where the material is a study of classic books such as Bulughul Maram; or video tutorials for practical Islamic materials such as grave pilgrimage procedures. This virtual Islamic boarding school also provides training services such as vocational boarding school training. The unique thing about learning on this virtual boarding school website is the highlight or trending method, where the latest and trending issues of Islamic studies are displayed as highlights on the website to

facilitate students to always update the latest knowledge in Islamic studies.

In addition, virtual pesantren also carry out community service in the form of 'khidmat'. The forms of this community service include, among others; contributing to the method of reading and writing as well as memorizing the Qur'an quickly which was named *Yanbu'a*; releasing the *AAMIL* application, which is an application developed with NUCARE LAZISNU Pati to facilitate the management of Zakat, Infaq and Sadaqah (ZIS) on a small and medium scale; released the Pesantren Financial Management System program, which is distributed free of charge using a waqaf license for pesantren. The purpose of this program is to make it easier for Islamic boarding schools to manage financial management, or what can be called a pesantren accounting system; released the Pesantren Asset Management System program which was also distributed free of charge to make it easier for *madrasas* and Islamic boarding schools to record and manage assets; released the Madrasah and Islamic Boarding School Management System program. This program is distributed free of charge using the GWU/General Public Waqf license. The purpose of this program is to facilitate the world of madrasas and Islamic boarding schools in managing the management of students. such as the learning system in virtual pesantren.

Although classified as non-formal education, learning in virtual pesantren has a clear curriculum; although the method used tends to be simple, the technology is fully integrated into it; although it does not have a physical building, virtual pesantren has clear management and fully responsible for the credibility of the *Kiai* and its religious materials. Of course, it does not reduce or distort the uniqueness and characteristics of pesantren in general, because virtual pesantren still adhere to the same role,

namely *tafaqquh fiddin*. Thus, the birth of virtual pesantren is a form of sustainable pesantren learning in facing the challenges of the 4.0 era

Conclusion

Virtual boarding schools are Islamic boarding schools that fully operate via virtual-internet specifically utilizing the website. Starting from the management, curriculum and learning activities all of which operate virtually. But even so, the learning method still tends to be simple even though there is integrated technology in it.

The curriculum for teaching materials in virtual boarding schools is listed on the website in the form of categories, the learning methods used include online consultations where the technique is in the form of questions and answers or discussions, regular online recitation, and video tutorials. The unique thing about learning on this virtual pesantren website is the highlight or trending method, where the latest and trending issues of Islamic studies are displayed as highlights on the website to make it easier for students to always update the latest knowledge in Islamic studies.

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