PDTII
PERKUMPULAN DOSEN TARBIYAH ISLAM INDONESIA

Challenges of Online Boarding Schools In The Digital Era

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Article Information	Abstract
	The virtual world has caused disruption in various social lives and institutions, including Islamic boarding schools. This oldest religious institution in Indonesia has also redefined its meaning, thus building a new stream called "Pesantren Online" (online Islamic school) which changes people's perception of the pesantren itself. As a means of religious learning, Islamic Boarding Schools Online, in this case, the website www.pesantrenvirtual.com, try to satisfy people's desires for religious matters. This paper concludes that the human need to get information about religious themes instantly triggers the creation of religious online sites, such as pesantrenvirtual.com, as a reference to overcome the confusion of religious surfers.
	Abstrak *Dunia maya telah menyebabkan disrupsi dalam berbagai kehidupan dan institusi masyarakat, termasuk pesantren. Lembaga keagamaan tertua di Indonesia ini juga telah mendefinisikan ulang maknanya, sehingga membangun aliran baru yang disebut "Pesantren Online" (sekolah Islam online) yang mengubah persepsi masyarakat terhadap pesantren itu sendiri. Sebagai sarana pembelajaran keagamaan, Pesantren Online, dalam hal ini situs www.pesantrenvirtual.com, berusaha memuaskan keinginan masyarakat akan hal-hal keagamaan. Tulisan ini menyimpulkan bahwa kebutuhan manusia untuk mendapatkan informasi tentang tema-tema keagamaan secara instan memicu terciptanya situs-situs online keagamaan, seperti pesantrenvirtual.com, sebagai acuan untuk mengatasi kebingungan para peselancar agama.*

INTRODUCTION

Quality education is one that has adaptability to the developments that took place in its era, because this is a demand that accompanies every development. Educational development is not only an effort to add to what is already there (*doing more of the some*), or improving the efforts that have been made (doing better of the some), or simply increasing opportunities to obtain education quantitatively, but there should be something different. . Global developments and the demands of the free market, including the labor market, require us to rethink the education system that we have used so far. Assessment of the entire

education system needs to be carried out systemically by following a series of rules and concessions to gain leaps and bounds in the field of education (Nurdin, 2016) .

Educational technology seeks to solve and/or facilitate the solving of lifelong human learning problems, where, when, in what way, and by whomever. Learning problems can be found at home, at school, in places of worship, at work, and in society (Jubba, Pabbajah, Abdullah, & Juhansar, 2022; Puad & Ashton, 2021). By developing one of the principles of educational technology "learning can be anywhere", teachers in the classroom and parents at home can use a very wide range of learning tools and are not limited to classrooms and study rooms. The principle of learning "anytime" gives students the freedom to choose fun times to study, each person has favorite times to study, it can be morning, evening or midday (Romadlan, 2015) .

The principle of "learning in any way" provides opportunities for creativity in learning methods, any learning method as long as it gives more value to students is not a problem, even with this basis learning methods can be developed very innovatively (Amelia, Aprilianto, Supriatna, Rusydi, & Zahari, 2022; Mohammed, Tibek, & Endot, 2013; Ro'is & Rokhman, 2021). The development of the principle of "learn from anyone" changed the "teacher" paradigm, for hundreds of years ago people believed that the only source of knowledge was teachers. This principle of learning from anywhere opens the entrance to more knowledge, the door can be from internet access which can be easily found as it is today, even the door can be from simple objects that are found around us, and all of these can become " teachers who are always ready to teach are not limited by space and time. With an educational technology approach, learning problems, regardless of their form, are expected to be solved anywhere, in any way, from anywhere, and by anyone (Winarko, 2017) .

Educational technology is a field that has a direct interest in the systematic development of various kinds of learning resources, including the management and use of these resources (Dacholfany, 2015; Hanafi et al., 2021; Hasanah, 2021). As has been mentioned for hundreds of years people only believe that the teacher is the only source of knowledge, and there is even a saying that whoever studies without a teacher, then the devil will be his teacher. With a technological approach, learning resources are developed and expanded in such a way that in the end learning is from anything and anyone in various ways (Ali & Erihadiana, 2022).

Packaging educational technology in Islamic religious education or vice versa, is not suitable if we ourselves do not have a complete understanding of Islamic religious education itself. Islamic education as a system is education that covers all aspects of life that are needed by God's servants. Based on Islamic values are embedded and form an attitude of life that animates these values (Ansori, 2020; Baharun, 2017; Fauzi, 2018). Given the wide reach that must be worked on by Islamic education, Islamic education must be open to demands for human welfare, both demands in the field of science and technology as well as demands for meeting the needs of spiritual life. These needs will widen in line with the expansion of the demands of human life itself (Abdul Mun'im Amaly, Muhammad, Erihadiana, & Zaqiah, 2021) .

Among the obstacles that are often complained about in the implementation of Islamic religious education in the field is the lack of interest in delivering the material. The issue of "how to" is important because it relates to students' learning interests. The existence

of educational technology can bridge various obstacles that have often appeared in Islamic religious education, so that the modernization of the Islamic education system is urgent. Ali bin Abi Talib gave wise advice in terms of developing new technological things "Teach your children (with knowledge) that are not like you learn, because they were created for generations (ages) that are different from your era" (Erihadiana & Rahman, 2021) .

In its development, Islamic boarding schools as one of the bases of Islamic education in Indonesia have started to follow the demands of the times to use technology, such as media promotion and learning. Technology-based Islamic education that is starting to be recognized by the public is virtual pesantren or online pesantren. In contrast to the currently well-established concept of pesantren, virtual pesantren reduces several aspects that are commonly present in a pesantren, namely the existence of mosques, Islamic boarding schools/dormitories and Kyai are no longer a requirement in virtual pesantren (Fakhrurrozi, 2021) . One aspect that has similarities between virtual pesantren and non-virtual pesantren lies in the subject matter and students/students, although some researchers still doubt the concept of santri in virtual pesantren. This article intends to explain the process and application of educational technology in online Islamic boarding schools.

RESEARCH METHOD

This research approach is qualitative research. Retrieval of data by means of *library research* from several sources of Islamic education books and journals. This study uses a descriptive method that aims to find out the process of educational technology and its application in online Islamic boarding schools. Then the author uses an interactive analysis model which includes three interrelated components, namely data collection, data reduction, and drawing conclusions (Arikunto, 2002) .

RESULTS AND DISCUSSION

Utilization of Technology in Islamic Religious Education

The use of educational technology is an attempt to provide learning media, therefore technology-based learning media needs to be done well and can attract students to be able to like it. Learning media itself is a container for conveying messages and information in teaching and learning activities. This needs to be structured properly because it will be very useful for students to capture and understand the subject matter. The use of learning media is not only as a visual aid for educators, but also as a means of conveying messages in teaching and learning activities (Fauziah, 2020) .

Each learning media has its characteristics, advantages and disadvantages. Therefore it is necessary to carry out systematic planning in order to apply the media in learning. Learning media used in educational institutions, both formal and non-formal, can increase students' learning motivation. Therefore schools in the 21st century need to apply technological learning media in order to motivate students to learn. The sophistication of the technology that exists today cannot be ignored but needs to be accompanied by the availability needed (Ichsan et al., 2020) .

Islamic education is currently being challenged for its contribution to the formation of modern civilization and culture that is relevant to the development of science, technology and art (science and technology). In this dimension, Islamic education experiences functional degradation because Islamic education is more oriented to the moral-spiritual aspect. There

are many opinions that say that Islamic education is not too focused on prioritizing practical and pragmatic aspects, such as mastery of technology. As a result, Islamic education is unable to compete at the cultural level at the global level (Mubarak, 2021) .

The existence of a challenge in the form of a problem is as much as possible accompanied by a solution to overcome the existing problem. The world of education is currently starting to be preoccupied with preparing a generation that is able to survive in the competition in the industrial era 4.0 (Choli, 2020, p. 0). In facing the era of industrial revolution 4 several things that must be prepared include: 1) Preparation of a more innovative learning system . to produce graduates who are competitive and skilled, especially in the aspects of data literacy, technological literacy and human literacy. 2) Reconstruction of educational institutional policies that are adaptive and responsive to the industrial revolution 4.0 in developing the required transdisciplinary knowledge and study programs. 3) Preparation of responsive, adaptive and reliable human resources to face the industrial revolution. 4) Rejuvenation of infrastructure and development of education, research and innovation infrastructure also needs to be carried out to support the quality of education, research and innovation.

There are two things that need to be considered in technology-based Islamic education (Abdul Mun'im Amaly et al., 2021) , namely:

1. Islamic Aqeedah must be used as the basis for all science and technology concepts and applications. This paradigm must be developed by Muslims today. There is a lot of education going on and all advances in educational technology that avoid the truth of Islamic faith, like secular-based education. Like Darwin's theory which contradicts the Islamic Aqeedah. Even though Islamic aqeedah is used as the basis for developing science and technology, sciences such as astronautics, medicine, and geology are not always derived from verses in the Qur'an. Instead, make the Al-Quran and Hadith (as the second way of life) as a standard in science and technology. The standards in question do not reject and cause conflict between science and the Qur'an.

2. Islamic Sharia as a standard for the utilization of science and technology The sharia standard given to utilize science and technology is regarding halal and haram. Science and technology that are allowed to be utilized are science and technology that have been legalized by sharia. Meanwhile, science and technology may not be used if it is prohibited by sharia.

Islamic education teaches that globalization encourages people, especially religious people, to be able to seize opportunities and face challenges in this 4.0 era. This is because the problem of building civilization is not from religious teachings but from the people. For example, Muslims once had a modern civilization which was marked by the existence of the Bait al-Hikmah library which produced knowledge. With the potential for knowledge bestowed by Allah along with His submission, humans are able to reach easily everything that lies in the universe through expertise in engineering, or in other words, technology and the tools it produces. In this regard, it is necessary to emphasize the importance of harmonizing science and technology (Science and Technology) with religion. Science and technology must always be based on moral-religious values so that they do not conflict with human values. Meanwhile, Islamic teachings must be brought closer to the context of modernity, so that they are compatible with all times and places (Abrori, Sugiyanto, & Niyartama, 2017) .

Development of Islamic Boarding Schools Online

Muslims are now using various media for educational purposes. An example is the online boarding school estab- lishment. Online pesantren can be considered as pesantren without physical institutions. It has the same function as a conventional pesantren, or as a tafaqquh fiddin (providing spiritual guidance) institution to the community (Rifa'i, 2009). Although their roles are similar to those of conventional pesantren, online pesantren are characteristically different from their traditional counterparts. Not only do they not exist in physical form, teaching and learning are also different. In online pesantren, students learn through screens as opposed to face-to-face teaching in offline pesantren. Historically, the trend for the emergence of online pesantren in Indonesia began in early 2000. Initially, online pesantren were established and organized by institutions, community organizations, communities and individuals. A plea virtual pesantren.com, a website for Islamic da'wah (religious prose prose) which was founded on August 11, 1999, by a community of Muslim students (Khusnan, 2016) .

Figure 1. Integration of Islamic Boarding School Education and *the Internet of Things (IoT)*
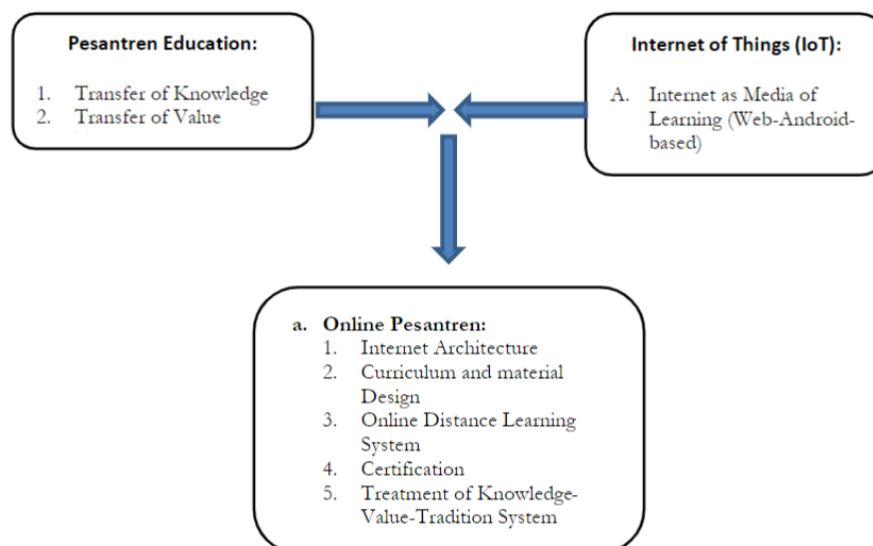
Examples of institutionally owned online pesantren are www.sidogiri.net, which is run by the Sidogiri Islamic Boarding School in Situbondo; NU Online, which is part of the Nahdatul Ulama organization (the largest Islamic organization in Indonesia); and www.tebuireng.org, the official website of the Tebu Ireng Islamic Boarding School, Jombang.

Meanwhile, online Islamic boarding schools organized by individuals also exist. Some examples are the Alfalah Darussalam Online Islamic Boarding School, which was founded by Ustadz Ajib Mustofa on October 14, 2008; www.bukhari.or.id, which was ensnared by Imam Bukhari; and www.wisatahati.com, founded by Ustadz Yusuf Mansur, one of Indonesia's contemporary preachers. The emergence of online pesantren in Indonesia can be traced back to 1999, when one-way-communication via mailing lists and websites was established via platforms such as pesantren@yahoo-group.com (launched on 11 August 1999). This mailing list is limited to the spread of recitation. Initially it had 41 members and continued to increase until it reached 332 subscribers. Finally, on September 27, 1999, this

mailing list-based platform launched its website at pesantren.hypermart.net. In less than a year, on the same domain (hypermart.net), the pesantren's website garnered nearly forty thousand traffic hits, prompting him to grow his domain. This domain was finally established in April 2000 (Fakhrurrozi, 2021) .

The development of online pesantren in Indonesia follows the development of the internet. In such an expansion of information technology, social media plays an important role in the daily lives of most people connected to the internet (Van Dijck, 2013) and online Islamic boarding schools are no exception. As a result, almost all Islamic boarding schools in Indonesia now have official websites and social media accounts. Online Islamic boarding schools currently also manage various accounts on various social media platforms such as Twitter, Instagram, Facebook and WhatsApp. Moreover, managing social media accounts and websites is no longer only the work of khalafiyah pesantren (modern Islamic boarding schools) but also salafiyah Islamic boarding schools (traditional Islamic boarding schools) (Winarko, 2017) .

Currently, many online Islamic boarding schools use various platforms on the internet. Islamic boarding schools utilize almost every available internet technology: *websites, webmail, chat rooms, search engines, social media, streaming services, download opportunities, polls, ratings, and* many others. The presence of online pesantren, both modern and traditional, has given rise to a new culture in the online realm. This means that whatever platform they use, online or offline, Islamic boarding schools in Indonesia always contribute to Islamic civilization (Asnawi et al., 2016, p. 28). The development of online pesantren comes with different opportunities. The highest achievement of online pesantren is disseminating information about Muslim life and practices, which are then applied in daily religious life and traditions (Mubarak, 2021) .

Another benefit is that online pesantren provide access to a wider distribution of students compared to offline pesantren. In addition, they introduce the pesantren to the public and thereby contribute to the wider dissemination of Islamic teaching and learning thereby assisting the santri in performing prayers and rituals, strengthening the relationship between management, students, and alumni, assisting the santri in solving their spiritual problems, and providing space to advertise their product. According to Winarko (Winarko, 2017) , the emergence of online pesantren on websites and social media platforms has provided many benefits:

a. Online Islamic boarding schools can meet the community's needs regarding Islamic teachings that cannot be obtained in offline Islamic boarding schools due to time and distance limitations;

b. Online Islamic boarding schools can provide wider access and distribution of students compared to offline Islamic boarding schools;

c. Online Islamic boarding schools can help students everywhere to pray and perform religious rituals by facilitating these rituals through downloading texts and reading streams of the Koran;

d. Online pesantren can also introduce pesantren to a large market of new users through information such as pesantren profiles as well as providing news about pesantren;

e. Online Islamic boarding schools can meet the need for sources of life and Islamic practice and provide consultation to students wherever they are, especially on issues related to religious knowledge and experience;

f.   Online Islamic boarding schools can facilitate and maintain relationships by facilitating communication between Kiai or Ustadz and students, even among students.

Types of Growing Online Islamic Boarding Schools

Online Islamic boarding schools have grown rapidly since their first appearance. This is indicated by the number of online Islamic boarding schools on the Internet and the number of applications for them. Online Islamic boarding schools can currently be grouped into five classifications (Mubarak, 2021).

Online boarding schools

This type of Islamic boarding school is purely online, they have no offline partners. They are unique. By using an online application system, the entire organization and management is carried out online, including the communication system and workflow. Even parts of the editorial team, instructors and web team, as well as day-to-day implementers and executives are conducted online. Online Islamic boarding schools of this type, especially on social media, include virtual Islamic boarding schools, ngaji.web.id, ngajionlineAswaja, and Islamic boarding schools.online.com.

Hybrid boarding school

Hybrid online pesantren is a combination of online and offline pesantren. Usually, these are well-known Islamic boarding schools such as the Lirboyo Islamic Boarding School, the Tebu Ireng Jombang Islamic Boarding School, the Gontor Mantingan Islamic Boarding School, and the Darul Ulum Jombang Islamic Boarding School which were established offline long before the pesantren existed online, some of which can be dated back a century or more. However, they also have an online presence. Hybrid online pesantren is the most common type because almost all offline pesantren in Indonesia now also have online accounts (Dias, Scavarda, Silveira, Scavarda, & Kondamareddy, 2021; O'Sullivan, 2020).

Organization's online boarding school

As a country with the largest Muslim population in the world, Indonesia also has many Islamic social organizations. Some of these organizations own or are affiliated with existing pesantren. This type of online pesantren emerged because of the existence of these organizations. Not all Islamic organizations in Indonesia own or are associated with pesantren, only the most significant Islamic organizations with a concern for Islamic education register and/or own pesantren. These organizations are Nahdatul Ulama (NU), Muhammadiyah, PERSIS (Islamic Union), and Al-Irsyad. Nahdatul Ulama (NU) is the largest Islamic organization, not only in Indonesia but also in the world (https://cnnindonesia.com/01/02/2019). There are many pesantren affiliated with NU.

NU's official website is NU online (can be found at https://www.nu.or.id), which has a special section on pesantren to promote traditional or salaf pesantren in all its public cations. This website is also directly integrated with their social media platforms. NU Online consistently broadcasts 'online Koran' (live streaming of traditional Islamic learning) in studying 'yellow books' or classic texts conducted by senior and junior Kyai and Ustadz, commonly called Aswaja Muda (Aswaja Muda). All NU social media accounts and websites broadcast the latest rubrics on pesantren issues, and the website even has a specific section on online pesantren. Muhammadiyah boarding schools online. While the NU organizational movement is more culturally based, the Muhammadiyah organization is characterized by modern education, especially in schools. They rarely refer to themselves as pesantren.

Instead of using the term pesantren, they use Madrasah Wahyu Ilaihi. So far, the well-known Muhammadiyah Islamic Boarding Schools are usually referred to as Madrasah Muallimin and Muallimat Muhammadiyah.

PERSIS or 'Persatuan Islam' is the third largest Islamic organization after NU and Muhammadiyah which has many Islamic boarding schools. PERSIS's organizational focus is aimed primarily at spreading the teachings of the Koran and Sunna. To realize this goal, one of its main movements was to establish various levels of Islamic education which began in 1924 and peaked in 1988. In 1936, initiated by Kyai Hasan, PERSIS changed the education system into a pesantren system to include Ibtidaiyyah (SD) and Tsanawiyyah (JUNIOR HIGH SCHOOL). Despite this, the pesantren retains the same name as the organization: 'Persatuan Islam No. 1' (Noer, 1996, p. 297). Since then, his party has actively developed pesantren-based Islamic educational institutions. Currently, it has around 230 Islamic boarding schools (Persis Website, 2018). In addition, PERSIS is also an organization that actively campaigns for internet literacy throughout Islamic society. For example, there is a program called Let's Preach Through Facebook.

Active for nearly a hundred years, the Islamic organization Al-Irsyad has contributed significantly to Islamic reform in Indonesia. As with other Islamic organizations in Indonesia, Al-Irsyad is engaged in education, teaching Islamic culture and da'wah, as well as community projects based on the Qur'an and Sunnah. Moreover, there are a number of Al-Irsyad Islamic Boarding School branches which are now considered advanced and have succeeded in developing their Islamic boarding schools in various regions in Indonesia, such as the Al-Irsyad Islamic Boarding School in Surabaya, Al-Irsyad Bondowoso Islamic Boarding School, Al-Irsyad Islamic Boarding School Semarang, Al-Irsyad Pekalongan Islamic Boarding School, Al-Irsyad Islamic Boarding School Irsyad Tegal, Al Irsyad Tegal Islamic Boarding School, Al Irsyad Purwokerto Islamic Boarding School, Al Irsyad Bogor Islamic Boarding School, Al Irsyad Bandung Islamic Boarding School, Al Irsyad Cilacap Islamic Boarding School, and in several other areas.

Private online boarding school

Private online Islamic boarding schools are a type of online boarding school that are made based on individual characters as icons. However, due to its highly personal nature, it allows for more exploration of the strengths of individual abilities in the field of religion, and personal popularity or fame in society. It can be raised or built up by the media as well. Generally, individuals with skills and abilities in this field of religion are referred to as Muslim scholars or scholars.

Some of the leading pesantren leaders can become famous because of a certain charisma and they have very deep and even scientific knowledge about Islam. Examples of such figures include personalities such as Gus Mus, KH. Quraish Shihab, and KH. Sheikh Habib. KH. Ahmad Mustofa Bisri (commonly referred to as 'Gus Mus') the owner of the Raudlatut Thalibin Islamic Boarding School, Rembang, broadcast live recitations via the Gus Mus *YouTube Channel*. Ulil Abshar Abdalla founded Ngaji Ihya online (Islamic classical learning), which personally develops traditional pesantren through the online activity Kitab Ihya Ulumuddin. Despite not having an offline pesantren, Ulil Abshar Abdalla is known for his online students as 'Kyai Online' (KO) and Kyai Facebookiyah.

Almost all activities in conventional and offline Islamic boarding schools are filled with teaching and learning processes. In traditional pesantren, religious learning or teaching activities are usually referred to as the Koran. 'Ngaji' or 'Qur'an' means studying or studying the Islamic religion. The words 'reciting' and 'reciting' were originally Indonesian terms derived from the word 'kaji', which means: 1) lesson (religious or otherwise); and 2) investigation (about something). While the word 'recital' has several meanings, namely: 1) reading, reciting the Qur'an; 2) learn to read Arabic script; and 3) study, study religion (Poerwadar- Minta, 1976). In traditional pesantren, reciting the Koran and reciting is a core part of the teaching and learning process.

Almost all salaf (traditional) Islamic boarding schools in Indonesia have some form of the Koran. In the pesantren tradition, the word 'ngaji' is used to describe both the study of the Qur'an and the classics. Reciting the Book is an important activity in Islamic boarding school education because the Book is the main handbook for the santri. Almost all salaf pesantren curricula use the Book as the main reference. In addition, all the books taught in Islamic boarding schools are in the form of the Bald Book (a textbook written in Arabic without vowels/punctuation). Therefore, the Bald Book requires a very good understanding of Arabic to understand its contents.

Figure 2. Flow of Online Islamic Boarding School Education (Fakhrurrozi, 2021)
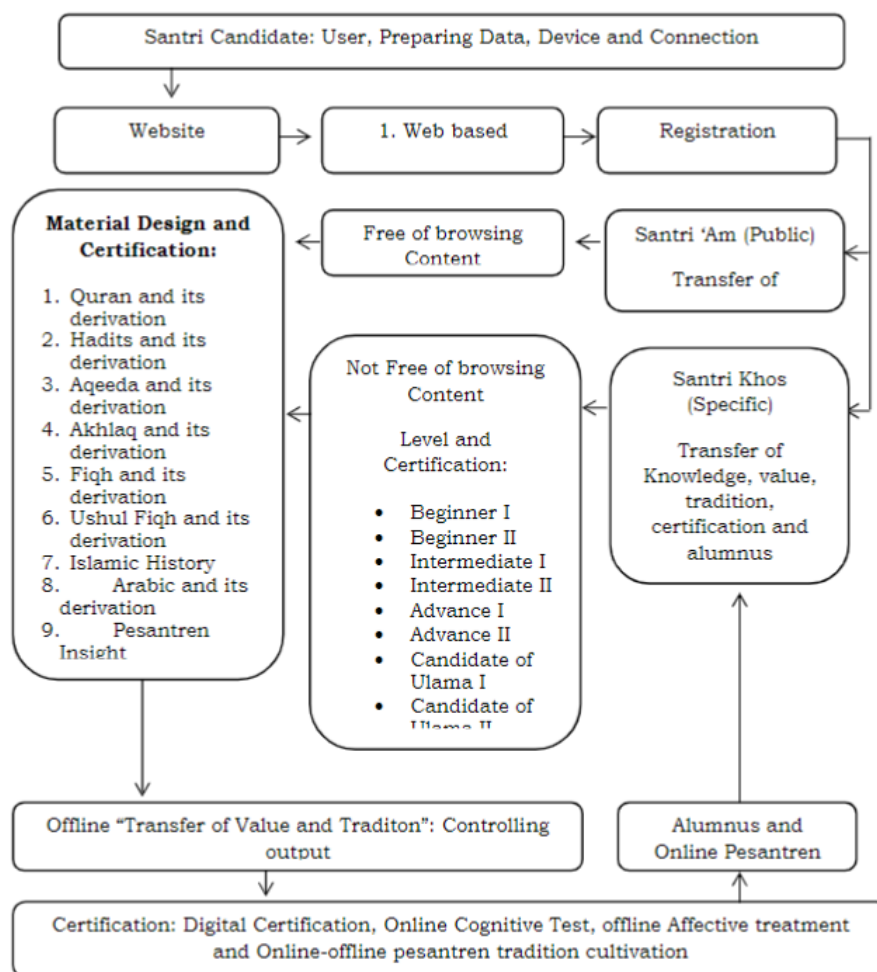
In addition, there are usually many santri, especially new ones, who do not understand Arabic, so they learn from the Kiai's explanations. For this reason, the santri live in boarding (living and living in the pesantren) with the Kyai. They wrote the translation under the Arabic sentence in the book. This translation writing activity is known as njenggoti. Other terms for 'njenggoti' are 'meloghat' (transliteration) and maknai (from the word meaning, which means 'meaning'), both of which refer to giving meaning to every word in the Bible. The peak of reciting the Koran in Islamic boarding schools is during the month of Ramadan or fasting. Book recitation is scheduled to take place every day, almost every time after the five obligatory prayers (Fajr/dawn, Dhuhr/noon, Asr/afternoon, Maghrib/sunset, and Isha'/night). There are even pesantren that add Koran Koran activities after Dhuhr. The peak of activity during Ramadan in offline Islamic boarding schools is mirrored by those in online Islamic boarding schools.

During Ramadan, many Islamic boarding schools hold Koran recitation activities every day, either through Facebook, YouTube or the Islamic boarding school's website. For example, Gus Mus from the Raudlatut Thalibin Islamic Boarding School, recited the Riyadhus Sholihin Kitab after the Tarawih prayer, the Koran Burdah Al-Bushiry Kitab after the Fajr prayer, the Idhatun Nasyi'in Kitab after the Dhuhr prayer, and Kimiyaus Sa'adah Kitab before breaking the fast – all of which were broadcast via Gus Mus YouTube channel. Meanwhile, after the Fajr prayer in the month of Ramadan 2019, PBNU Chairman KH Said Aqil Sirodj recited the Burdah Prayer by Sheikh Muhammad bin Said Al-Bushiri, which was held at the Al-Tsaqafah Islamic Boarding School in Ciganjur, Jakarta. He also broadcast live on Facebook Al-Tsaqafah (Arif, Aziz, Harun, & Ma`arif, 2023; Yasin, Chakim, Susilawati, & Muhammad, 2023).

Online Islamic Boarding School Curriculum and Material Design

The online pesantren curriculum must be designed in full, starting from general Islamic boarding schools (for the public) and special Islamic boarding schools (only for students). The curriculum will direct the pesantren to transform into a different entity by comparing the actual pesantren. The content is expected to be similar but the methods are often different. The entire system in real Islamic boarding schools is being tried to exit online Islamic boarding schools through the online and offline dual systems. Pesantren Online (OP) is a public pesantren, so it must be divided into two users: public and specific students. In order to access the OP, each user must be logged in due to registration. The admin (OP receptionist) will register and welcome users to become santri (Fitriani, 2020) .

'*Am* is a general santri as a reader, learner, commentator, discussion participant and of course as a student who "sit in" class. *Khos* is a special student. They come to the website or android based to become students. Admin as administrator reports to Kyai and teachers on their whereabouts. Every visit to the website counts as a class meeting. The system records attendance as a virtual prize. Santri are welcome to register all identities and choose a khosas student user account. This treatment will make newcomers pass every class ordered. There is no time limit for studying in each class, it depends on the presence of special students and passing levels. The more learning, the faster graduates get. All newcomers start from the entry level to test the level of knowledge throughout the pesantren material design. If the santri is of a better level, they must pass the lower level to ensure that he or she gets certified. Each Islamic boarding school student will be tested on

the process of transferring knowledge, values and traditions by the system. The evaluation consists of containing material design including: the Koran, hadith, creed, morality, fiqh, ushul fiqh, history and Arabic (Winarko, 2017) .

Distance Learning Systems and Certifications

The best learning option in a virtual system is *blended learning* . There are two choices regarding the learning model, namely a full online learning system and a mixed learning system or *hybrid learning system* . full online is designed for full processing using computer based instructions. The actual learning is neglected to build a system in which students interact all processes with a computerized interface. There is no limit to practice and visiting but hard to control. It is suitable for the knowledge transfer process. Blended learning is the integration of virtual and real learning. Santri has two main activities: virtual for the knowledge transfer process and real for the value transfer process. The blended learning is built to grow the pesantren tradition (Nazihah & Maulana, 2020).

Material design tested with certification. All subjects (8 subjects) must be passed by students through the system. If students find problems in one or more subjects and their content, they should study more with the system and try to pass the exam. The certification process consists of two parts: controlling the transfer of knowledge and transferring value (Hidayat, 2016; Maulana, 2022). Before printing the certificate of achievement, an offline meeting must be held to ensure the transfer of grades occurs. The online pesantren admin (team) holds offline meetings including tawasul, pilgrimage, diplomas, etc. as a pesantren tradition. Cognitive tests are sufficient on the system and are added by the offline meeting as the end of the process. After the online and offline processes, achievement certificates (per level) can be printed (Winarko, 2017) .

Opportunities and Challenges of Online Islamic Boarding Schools in the Digital Age

Online Islamic boarding schools are made to enlarge traditional Islamic boarding schools that already exist above the community. Limited access to certain pesantren is one of the system's problems. Online Islamic boarding schools offer an inclusive system that allows people to register and learn about pesantren traditions. This is a new form of preaching in the millennial age (Adiyono, Fadhilatunnisa, Rahmat, & Munawarroh, 2022; Alkouatli, 2018). Most people make cell phones as a new tradition of human life. It evenly controls people's daily activities. If online pesantren are open to the public, they can easily access pesantren traditions. The opportunity for online pesantren provides unlimited access to the community and the wider and limitless process of pesantren. The facilities that must be presented in real life are changes to virtual infrastructure. It sounds cheaper. Building one hardware and software is the first step to building an architecture (Mubarak, 2021) .

Collecting material from several Islamic boarding schools is the best choice for enriching content creation. Preparing internet hardware and audio visual devices must be prepared to build beforehand. It is relatively cheaper than building real infrastructure. The challenges of online Islamic boarding schools are many (Sandria, Asy'ari, & Fatimah, 2022). In addition to the issue of conceptual terminology of pesantren, reducing the components of pesantren is problematic. Mosques, for example, as primary sites for learning are being ignored and altered by online tools. This device cannot provide value to foster tradition or at least to provide new positive value in it. Its values and traditions are lost. In addition, the

relationship between the students, the students and the kyai, the community around the students has not yet occurred. The values that exist in Islamic boarding schools cannot be obtained by using *the internet of things media* . Artificial intelligence cannot fully replace the values that exist in Islamic boarding schools. It takes time to wait until engineers find the duplication of people's lives into the virtual world (Mubarak, 2021) .

CONCLUSION

Islamic religious education respects and accepts changes in all aspects of education, including learning theories which are not only born from Islamic figures. So that Islamic education remains contextual (*shalih fi kulli Zaman wa eat*) in the challenges of the global era. Online boarding school is possible. *The internet of things* allows kyai to spread real pesantren knowledge, values and traditions through cyberspace. Curriculum and material design are truly easy to build digitally as a knowledge transfer process. However, the process of transferring values and traditions must be carried out in an offline system using a *blended (hybrid) learning system* . When online, students find some of the same values as the offline system. These opportunities and challenges are part of the risks of online pesantren.

Internet architecture to duplicate components of Islamic boarding schools is a possibility especially waiting for society to appreciate artificial intelligence in the future. This effort is to try to enrich the tradition of big data Islamic boarding schools on the internet with the future goal of implementing the Society 5.0 life system with Islamic boarding schools teaching inside. Several weaknesses were found to conceptually build an online pesantren. The definition of an established pesantren component becomes a theoretical matter. Then, pesantren aims not only to transfer knowledge when modern schools emerge but also to cultivate values and traditions. It is difficult to apply by using online pesantren alone. Hybrid learning is a solution but indicators of success must be tested. Growing value takes a long time and is not instant. *The blended learning* offered in this paper is not enough to solve complex problems based on the unique goals of pesantren. But it is possible to implement it, even though it takes time for online pesantren to be more comprehensive in their learning like traditional pesantren.

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