Digital Transformation of Islamic Education in Pesantren Madura

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Abstract

Keywords:
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Digital transformation is an inevitability in the era of society 5.0. This study examined the digital transformation of Islamic education of Pesantren in Madura. This study employed a qualitative approach, focusing on social education. The study was conducted using interview techniques for Kiai, santri, and researchers in Madura. There were three social facts in the digital transformation of Islamic education. First, the digital transformation in *Kiai* Pesantren Madura Perspective. Second, implementation of digital transformation of Islamic education at Pesantren Madura. Third, opportunities and challenges for pesantren in facing digital transformation in Islamic education. The *Kiai* in Pesantren Madura who initially practiced traditional Islamic education were following the development of digital transformation. The positive response can be seen from their perspective on the digital transformation of Islamic education and its implementation in facing digital transformation. Also, some Pesantren have prepared digital literacy facilities and human resources. Even though they have great opportunities in implementing digital transformation, they have the challenge of limited human resources and facilities.

Abstrak:

Kata Kunci:
*Transformasi Digital;
Pendidikan Islam;
Pesantren Madura*

Transformasi digital merupakan keniscayaan di era masyarakat 5.0. Tulisan ini mengkaji transformasi digital pendidikan Islam yang terjadi pesantren Madura. Tulisan ini menggunakan metode kualitatif dengan pendekatan pendidikan social. Dengan teknik wawancara terhadap Kiai, santri dan peneliti pesantren di Madura. Terdapat tiga fakta sosial dalam transformasi digital pendidikan Islam. Pertama, pandangan Kiai Madura terhadap transformasi digital. Kedua, Respons Pesantren dalam menghadapi transformasi dalam pendidikan Islam. Ketiga, Peluang dan tantangan Pesantren dalam menghadapi transformasi digital dalam pendidikan Islam. Kiai Pesantren Madura yang awalnya mempraktikkan pendidikan Islam tradisional kini mengikuti perkembangan transformasi digital. Respons positif Kiai Pesantren Madura dapat dilihat dari perspektif

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mereka terhadap transformasi digital pendidikan Islam dan implementasinya dalam menghadapi transformasi digital, sebagian pesantren sudah mempersiapkan sarana literasi digital dan sumber daya manusia. Meskipun memiliki peluang yang besar dalam menerapkan transformasi digital namun pesantren memiliki tantangan sumber daya manusia dan sarana yang terbatas.

1. Introduction

Pesantren is the oldest educational institution in the archipelago that has existed since the Kapitayan Era and is currently undergoing a digital transformation.[1] *Pesantren* that formerly employed conventional techniques have recently used digital technologies.[2] Aside from the fact that Pesantren have begun to adapt to changes in digitalization, many *Kiai* who become leaders of Pesantren have received formal Islamic education;[3] Indeed, many Salaf Pesantren in Madura have received formal Islamic education from early childhood education to higher education level.[4] For example, in Madura, several Pesantren offer computer technology job training facilities, which are part of a Ministry of Manpower initiative. It was also supported by the large number of *Kiai* who had degrees or even doctorates in the field of Islamic studies.[5] In fact, many Pesantren in Madura have developed formal education from early childhood education to higher education level, which on average have Islamic religious education study programs.[6] The development of *pesantren* from traditional to semi-modern is in line with the current transformation of the digitalization of Islamic education in Pesantren Madura.

Existing studies related to digital transformation have not touched on the study of digital transformation of Islamic education in Pesantren Madura. Apart from the lack of interdisciplinary studies, Pesantren Madura are still considered traditional in discussing digital transformation. For example, the digital transformation study i.e., Evans which focuses on digital leadership transformation,[7] Safitri's study which only focuses on digital literacy

[1] Said Aqil Siroj, *Islam Sumber Inspirasi Budaya Nusantara Menuju Masyarakat Mutamaddin* (Jakarta: LTN NU, 2015); Muhammad Taufiq, "The Role of Pesantren in Defending Indonesia Republic a Philosophy of Islamic Law Perspective; Case Study of Jihad Resolution," in *Islamic Studies in Globalizing Challenges*, vol. 13, 2022, 3–21, https://doi.org/10.1177/223386591001300101.

[2] Lutfi Zulkarnain, "The Role of Pesantren Leaders in the Digital Age," *Journal of Multi-Disciplines Science (ICECOMB)*, 2023, https://doi.org/10.59921/icecomb.v1i1.13.

[3] Agus Iswanto, "Kiai Sebagai Patron dan Sponsor Praktik Multiliterasi di Pesantren Pada Era Media Digital," *EDUKASI: Jurnal Penelitian Pendidikan Agama Dan Keagamaan*, 2020, https://doi.org/10.32729/edukasi.v18i3.657.

[4] Rusnila Hamid and Ruswandi Uus, "Islamic Education System in Indonesia," *International Journal of Social Sciences*, 2022, https://doi.org/10.21744/ijss.v5n1.1815.

[5] Yanwar Pribadi, "Kiai in Madura: Their Roles in Local Politics in Indonesia," *The American Journal of Islamic Social Sciences*, 2012.

[6] Zainal Alim, "Pergeseran Orientasi Kelembagaan Pesantren di Madura dalam Perspektif Kiai Bangkalan," *Jurnal Pendidikan Agama Islam (Journal of Islamic Education Studies)*, 2016, https://doi.org/10.15642/jpai.2016.4.2.249-270.

[7] Evans E.W. Tulungen, David P.E. Saerang, and Joubert B. Maramis, "Transformasi Digital : Peran Kepemimpinan Digital," *Jurnal EMBA : Jurnal Riset Ekonomi, Manajemen,*

transformation of modern Pesantren – considering that traditional Pesantren Madura must also be studied because they have the same opportunities.[8] Then, the study on The Urgency of Digitalizing Pesantren Education in the Era of Society 5.0 (Opportunities and Challenges at Al-Amin Pesantren Indramayu), which still focuses on the urgency, opportunities and challenges in the Era of Society 5.0 at the Al-Amin Pesantren Indramayu.[9] Therefore, previously mentioned studies have not been able to answer the digital transformation of Islamic education in Pesantren Madura.

The author wishes to supplement prior investigations by reviewing available material. At least three topics are discussed in the writing. First, Madurese *Kiai* Perspective on Digital Transformation in Islamic Education. Second, Implementation of Digital Transformation of Islamic Education in Pesantren Madura. Third, possibilities and difficulties for Pesantren as Islamic education undergoes digital revolution.

The author generates a fascinating starting hypothesis based on the findings of temporary observations. First, even though the majority of Madurese *Kiai* have Salaf or traditional Pesantren, the majority of Madurese *Kiai* believe that digital revolution in Islamic education is unavoidable and important. Second, in order to adapt to changing times, Pesantren Madura has implemented several reforms and preparations. Third, Pesantren Madura face the same chances and problems as other Pesantren in Indonesia; they have opportunities due to supporting infrastructure, but they face obstacles due to a lack of human resources. From this first idea, it would be quite fascinating to research the digital revolution of Islamic education at Pesantren Madura in greater depth in order to reach more comprehensive findings.

2. Methods

The author employs a qualitative research method; a research method based on the philosophy of postpositivism that is used to investigate the conditions of natural objects (as opposed to experiments) where the researcher is the instrument, key, purposive and snowball sampling of data sources, collection techniques using triangulation (combination), inductive/qualitative data analysis, and qualitative research results emphasize meaning rather than geology. In this study, the author focuses on interviewing methodologies with *Kiai* Pesantren Madura in order to examine the Digital Transformation of Islamic Education from the perspective of the *Kiai*, as well as reactions and possibilities to obstacles encountered thus far. The author randomly selected *Kiai* Pesantren in Bangkalan, Sampang, Pamekasan and Sumenep.

3. Results and Discussion

Madurese *Kiai*, who were previously known as conservative, are becoming receptive to modern advancements. Aside from significant technology advancements, *pesantren* currently provide official Islamic instruction. The huge technology at the Pesantren Madura is distinguished by the rise of online Islamic studies through various social media platforms, i.e., YouTube, Facebook, and Instagram. Aside from it, official Islamic education has proliferated, coloring several Salaf Pesantren. This initiative is inextricably linked to the *Kiai* Madura paradigm for the digital transformation of Islamic education at Pesantren Madura.

Bisnis Dan Akuntansi, 2022, https://doi.org/10.35794/emba.v10i2.41399.

[8] Tulaihah Ning Safitri, "Potensi Santri Dalam Transformasi Digital Literacy Memasuki Era Revolusi Industri 4.0 di Pondok Pesantren Modern," *Mozaic : Islam Nusantara*, 2020, https://doi.org/10.47776/mozaic.v6i2.153.

[9] Mohammad Akmal Haris, "Urgensi Digitalisasi Pendidikan Pesantren di Era Society 5.0 (Peluang Dan Tantangannya Di Pondok Pesantren Al-Amin Indramayu)," *Islamic Management: Jurnal Manajemen Pendidikan Islam*, 2023.

As stated by the leader of the Pesantren Padepokan Mudrikah Kembang Kuning Pamekasan hermitage who considers that digital transformation is inevitable and necessary. *Kiai* Haji (KH.) Achmad Muhlis stated that "*Digital transformation is an unavoidable requirement for any Islamic educational institution, including the Kyai Mudrikah hermitage, which strives to stay up with world trends through technological advancements. The hermitage, which has only been in operation for two years, is optimizing its stages, beginning with digitization, digitalization, and digital transformation. This implies that the Kyai Mudrikah hermitage, Kembang Kuning, cannot begin digital transformation without first completing these phases. These steps will be straightforward to complete if the administration of the hermitage has a strong commitment to carrying out digital transformation. This digital transformation is essential for the hermitage's sustainability of religion-based education, consistency of preaching, and community empowerment in different facets of life. By merging the Merdeka (kudeka) curriculum-multimedia-semester credit and boarding systems, the hermitage will be able to expedite the growth of the independence of Pesantren, which will have a significant influence on the global economy*".[10]

This is in line with the opinion of KH. Khoirul Zaini, the leader of Pesantren Miftahul Ulum At-Taufiq Robatal Sampang. He stated that "*digital transformation in Islamic education must be implemented so that it does not become outdated, because all of this must keep up with the times, how Pesantren implement digital systems, in making it easier for Pesantren guardians digitally, transfers, data bases in Pesantren must also be digital, so that if implemented properly, both can make it easier to learn to be technologically literate, keep up with the times, show the existence of students. Therefore, we must continue to encourage digital transformation, so that the development of Islamic education can develop rapidly, such as how students can access the yellow book via online or the internet, of course the book they take must be mu'tabarah which is connected to the Prophet so that pesantren should constantly apply digital transformation*".[11]

This was also confirmed by KH. Taufik Hasyim, the leader of the Pesantren Bustanul Ulum, Sumber Anom, Pamekasan, said that digital transformation is an inevitability and necessity faced by Pesantren,[12] all educational institutions must follow digital transformation.[13] *Kiai* Moh. Hapsin as general secretary of the PP management. *Pesantren* Syaikhona Moh. Kholil Bangkalan also emphasized that "*Digital transformation is certainly very positive in Islamic education, especially in Pesantren in an effort to improve the quality and effectiveness of learning*".[14]

Mahrus Ali also conveyed the importance for Pesantren to follow the digital transformation of Islamic education as long as it does not abandon the originality of Islamic teachings because according to him, digital is a medium for developing Islamic education.[15] He said "*Times continue to change, technology will continue*

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[10] Mohammad Hasan, interview by KH. Achmad Muhlis, the Leader of Pesantren Padepokan Kiai Mudrikah Kembang Kuning Pamekasan, dated January 15, 2023.

[11] Mohammad Hasan, interview by KH. Khoiron Zain, the Leader of Pesantren Miftahul Ulum At-Taufiq Robatal Sampang, dated January 17, 2023.

[12] Mohammad Hasan, interview by KH. Taufik Hasyim, the Leader of Pesantren Bustanul Ulum, Sumber Anom, Pamekasan, dated January 17, 2023.

[13] Haris, "Urgensi Digitalisasi Pendidikan Pesantren Di Era Society 5.0 (Peluang Dan Tantangannya Di Pondok Pesantren Al-Amin Indramayu)."

[14] Mohammad Hasan, interview by Moh. Hapsin, santri of the Pesantren Syaikhona Moh. Kholil Bangkalan dated January 21, 2023.

[15] Usman Usman, Bahraeni Bahraeni, and Sabaruddin Garancang, "Developing Teaching Materials of Islamic Education and Ethics Based on The Values of Local Wisdom," *Lentera Pendidikan : Jurnal Ilmu Tarbiyah Dan Keguruan*, 2021,

to develop rapidly, and we are required to educate our generation according to their times, not ours".[16]

The ideals of religious teachings may not change, but the means of imparting religion may and must evolve in response to change. As a result, Pesantren cannot or must undergo digital transformation in the areas of education, da'wah, economics and politics.[17] Otherwise, Pesantren will fall far behind in the future. Because nowadays, it is not who is the strongest that dominates the weak, but who is the fastest. In the past, numerous sects, from the most extreme to the most liberal, did not readily enter our society. However, all streams may now communicate their teachings through YouTube, Facebook, Whatsapp, TikTok, Instagram, and other platforms.[18] "*So, here, Pesantren must digitalize their da'wah so that people can quickly gain correct knowledge about the teachings of the Islamic religion, and they are not influenced by these new, deviant teachings.*"[19]

Meanwhile, according to KH. Khoirul Ibad, the leader of the Pesantren Al-Usymuni Terate, Sumenep, emphasized that "*Facing such rapid changes, the Pesantren 's consistency in placing its role as an educational and religious institution that is able to keep up with developments is now again faced with challenges in the digital era*". From a fairly long historical journey, The presence of Pesantren as educational institutions is undeniably capable of adapting to the dynamics of change,[20] even becoming a locomotive that oversees the preservation of religious, ethical, and cultural values.[21] "*… and even the digital transformation of Pesantren has penetrated into the realm of online learning of the Yellow Book by a cleric, which can be listened to by students wherever they are, both students who live across provinces and across countries through the online Quran learning program.*"[22]

However, KH. Fauzan Zaini, the leader of the Pesantren Miftahul Ulum Karang Durin, Sampang, provided the best way for Pesantren to face digital transformation.[23] He said, "*In our opinion, the best education (Pesantren) is one that adheres to two things. First, pesantren are constantly carrying out updates – innovations that are oriented towards current and future developments. Second, remain steadfast in upholding its main identity that pesantren are Islamic*

https://doi.org/10.24252/lp.2021v24n1i6.

[16] Mohammad Hasan, interview by KH. Mahrus Ali, as Leader of PP An-Nafi'iyah Bangkalan dated January 22, 2023.

[17] Jubair Situmorang and Mohd Mizan Aslam, "Exploring Religious Teaching and Attitudes of Traditional Muslim on Social Politics in Indonesia," *Journal of Social Studies Education Research*, 2020.

[18] Roland Vishkurti, "Islamic Boarding Schools: Among Da'wah, Education, and Moderation Way in Islam," *Dakwatuna: Jurnal Dakwah Dan Komunikasi Islam*, 2022, https://doi.org/10.54471/dakwatuna.v8i2.1737.

[19] Mohammad Hasan, interview by Mahrus Ali, as researcher of Pesantren Madura dated January 22, 2023.

[20] Muhammad Anggung Manumanoso Prasetyo and Khairul Anwar, "Assessing Organizational Culture: An Important Step for Enhancing the Implementation of Junior High School-Based Pesantren," *AL-ISHLAH: Jurnal Pendidikan*, 2021, https://doi.org/10.35445/alishlah.v13i1.461.

[21] Adha Hujatulatif and Chanif Ainun Naim, "Nilai Tasawuf Pesantren Dan Tradisi Syawir Sebagai Strategi Cultural Protection Dari Lone-Wolf Terrorism," *Al-Banjari*, 2021.

[22] Mohammad Hasan, interview by KH. Khoirul Ibad, as Leader of PP An-Nafi'iyah Bangkalan dated January 27, 2023.

[23] Rojabi Azharghany, "Pesantren Menghadapi Era Otomasi (Analisis Aktualisasi Nilai Dan Tradisi Pesantren Dalam," *Jurnal Kajian Keislaman*, 2019.

educational institutions which of course have their own way of adapting and realizing "openness" as a result of the development of digital transformation. We consider these 2 principles to be the lifeblood of the Pesantren Karangdurin so that the students continue to have a strong understanding of Islam and are also capable of dealing with all kinds of technological developments.`'[24]

In developing this digital transformation, *pesantren* must integrate three things, namely digitalization of education, digitalization of preaching and digitalization of business.[25] As expressed by KH. Achmad Muhlis emphasized that "*The target is to integrate three important aspects, namely digitalization of the education and learning sector, digitalization of the da'wah sector and digitalization of the business sector. If these aspects have been fulfilled, then the institution will be independent in all aspects (education, da'wah and economics), which will have a big impact on global society.*"[26]

KH. Muhammad Rosyid Lailur Rahman, the leader of Pesantren Ummul Qura as-Suyuthi believed that "*changes in lifestyle which are currently digital require all aspects to be able to adapt. This literacy also requires that those of us who are involved in the world of Pesantren must be open to this dynamic. One thing that needs to be underlined is that even though we are inclusive towards digital transformation, we also provide ethical boundaries in operating it. This limitation has been a stressor for the Pesantren Ummul Quro Assuyuty in dealing with aspects of digital-based education management*".[27]

Therefore, Zainal Abidin as pesantren researcher, gave reasons related to the urgency that: "*because in accordance with the current digital era, digital in an educational perspective is something that cannot be avoided; thus, students and teachers must know digital. Digital is a technological development, of course this supports Islamic education, so in my opinion, it is very important to support Islamic education, secondly because it is appropriate to the times*".[28]

From the perspective of the Madurese *Kiai*, it can be concluded that the *Kiai* agree that digital transformation is an inevitability and necessity in developing Islamic education in Pesantren Madura. Apart from the fact that technology is increasingly developing, Islamic education must also use the latest facilities (*wasilah*). Completely, digital technology drives Pesantren to innovate to achieve digital transformation. This digital change is being used to align Islamic education with fiqh of civilization, scientific integration, and religious moderation.[29] As a

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[24] Mohammad Hasan, interview by KH. Fauzan Zaini, as Leader of the Pesantren Miftahul Ulum Karang Durin, Sampang dated January 17, 2023.

[25] Ariani Dwi Wulandari and Apol Pribadi Subriadi, "The Impact of the Ecosystem on the Digitization Process of Pesantren Tebuireng's Startup," in *AIP Conference Proceedings*, 2023, https://doi.org/10.1063/5.0117673; Florian Wettstein et al., "Examining the Performance of Competition Policy Enforcement Agencies: A Cross-Country Comparison," *Business and Society*, 2019; Teguh Budiharso and Toto Suharto, "A New Paradigm of Pesantren Management in the Perspective of Social Change in the Globalization Era," *Eurasian Journal of Educational Research*, 2022, https://doi.org/10.14689/ejer.2022.100.007.

[26] Interview with KH. Achmad Muhlis, the Leader of Pesantren Padepokan Kiai Mudrikah Kembang Kuning Pamekasan, dated January 15, 2023.

[27] Interview with KH. Muhammad Rosyid Lailur Rahman, the leader of Pesantren Ummul Qura as-Suyuthi dated January 29, 2023.

[28] Interview with Zainal Abidin, the researcher of pesantren Madura dated January 27, 2023.

[29] Muhammad Taufiq, "Fiqh of Civilization : The Consistency of Nahdlatul Ulama ' s Political Fatwa Toward a Century Introduction," *Proceedings: Annual Conference on Islam, Education, and Humanities* 2 (2023): 33–44,

result, Islamic education is widely embraced by society, particularly among millennials and post-millennials.

3.2 The Implementation of Digital Transformation of Islamic Education in Pesantren Madura

It is critical to practice and execute digital transformation of Islamic education in *pesantren* Madura. This is the *pesantren* 's stages in adopting digital transformation of Islamic education in *pesantren*, in addition to implementing the open and non-conservative philosophy of *Kiai* Madura. Pesantren Madura, for example, implements them in various ways based on the facilities, infrastructure, and resources available to each *pesantren*. As a result, the significance of implementing digital transformation is a litmus test for the success of digital transformation of Islamic education in Pesantren Madura.

Seeing the digital transformation of Islamic education at the Pesantren Madura is a necessity and a necessity for leaders of *Kiai* Mudrikah hermitage designed and created a road map, a strategic plan with three stages of digitization-digitalization-digital transformation by preparing all the technological devices needed in the education-learning, *da'wah* and economic aspects. In this way, Kyai Mudrikah hermitage, Kembang Kuning, can easily follow global trends without having to eliminate *pesantren* values. Currently, most of the digital technology devices owned by the hermitage are welcoming digital transformation, including two types of Interactive Flat Panels, 12 SmartTVs, 9 cameras, 33 notebooks, 13 All in One Personal Computers, 1 Personal Computer unit NUC 12th generation i9, and others.[30]

Meanwhile, Pesantren At-Taufiq confesses that it will always be ready to embrace digital transformation in order to stay up with the trends. In the future, digitalization, editing, and seminars on the importance of digitalization will be encouraged so that students are aware of current developments. In the future, things will become normal, how manual exams will be directed towards digitalization, using computers or laptops. "*In the future, we will create applications that make it easier to access the yellow book database, student guardians can easily see learning progress, making the yellow book easier, so that this digital transformation is beneficial for the knowledge and development of our students' insight*".[31]

Pesantren principles and traditions that allude to morality and are adaptable to the dynamics of change will enable *pesantren* to thrive in changing times through the Pesantren education system. This openness to change is consistent

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https://proceedings.uinkhas.ac.id/index.php/proceedings/article/view/85; Ridwan Nurdin, Muhammad Yusuf, and Syarifah Sarah Natasya, "The Gayonese Culture of Marriage System: The Islamic Law Perspective," *Samarah*, 2021, https://doi.org/10.22373/sjhk.v5i1.9257; Muhammad Taufiq, M. Noor Harisudin, and Maimun, "Multi-Track Diplomacy Fiqh of Nahdlatul Ulama in Countering Islamophobia in the Netherlands," *Ahkam: Jurnal Ilmu Syariah* 22, no. 2 (2022): 287–310, https://doi.org/10.15408/ajis.v22i2.27963; H. Muhammad Taufiq, "Implementasi Moderasi Beragama Dalam Kontroversi Tawassul: Studi Fikih Komparatif," *Proceedings of Annual Conference for Muslim Scholars* 6, no. 1 (April 15, 2022): 854–59, https://doi.org/10.36835/ANCOMS.V6I1.433; Ashif Az Zafi et al., "The Existence of Pesantren Based Technology: Digitalization of Learning in Pondok Pesantren Darul Ulum Kudus," *Jurnal Pendidikan Agama Islam*, 2021, https://doi.org/10.14421/jpai.2021.182-15.
[30] Interview with KH. Achmad Muhlis, the Leader of Pesantren Padepokan Kiai Mudrikah Kembang Kuning Pamekasan, dated January 15, 2023.
[31] Interview with KH. Khoiron Zain, the Leader of Pesantren of Miftahul Ulum At-Taufiq Robatal Sampang, dated January 17, 2023.

with *Ushul Fiqh* norms,[32] which are frequently cited in relation to upholding good values and how we adapt to changes and current trends. This rule entails upholding excellent traditions while also embracing new and improved practices.[33]

Meanwhile, in order to survive and always be a progressive educational institution, the Pesantren Karangdurin replied by actualizing the openness of information technology in the form of learning transformation, which aspires solely to grow and expand education. As a result, "*In recent years, our Pesantren has succeeded in digitizing the forms of student activity attendance, subject schedules, and cashless shopping, all of which can be connected directly to the student parents' smartphones, so that the students' guardians from their respective homes can also monitor the progress of his children at the Karangdurin Pesantren . Currently, we are also designing the digitalization of education which focuses on improving the quality of students, such as the placement of SmartTVs in Foreign Language Dormitories (Arabic-English) so that students can learn and practice communicating with the native speakers*".[34]

According to the Mahrus Ali as researcher of Pesantren Madura, responding to the transformation of Islamic education, *pesantren* must not be conservative. *Pesantren* must open themselves to developments with the times. *Pesantren* cannot be anti-technology.[35] *Pesantren* are not only required to produce Muslim generations who master the *turats* or yellow book,[36] but also have a responsibility to see how after returning home that the students will be able to dialogue with their times, be able to face the challenges of the ever-changing times. Apart from learning the yellow book in Pesantren, it must also be equipped with technology learning, for the educational, *da'wah* and economic needs of the students, especially when they leave the *pesantren*. "*But I think many* Pesantren *are already doing this. Not only modern ones but also salaf Pesantren such as Sidogiri, Lirboyo and others*".[37]

KH. Rosyid Lailurrahman said "*There are at least two stages that we carry out naturally. First. Increasing digital literacy both strengthening operations and ethics of use. In this case, we provide awareness of the importance of the digital world in the educational aspect, especially in Pesantren so that we are more or less starting to practice digital-based learning, for example we have LCD and LED TV that teachers can use as learning media and in the future, we will continue to improve digital facilities. Second, we provide direction to residents in Pesantren to be able to adapt through forums and monthly meetings with the Asatid board and administrators*".[38]

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[32] Muhammad Taufiq, "Istishhâb Sebagai Teori Hukum Islam Sebuah Tinjauan Historis," *Ijlil* 1, no. 1 (2019): 33–44, https://doi.org/10.35719/ijl.v1i01.74.

[33] Interview with KH. Khoirul Ibad, as Leader of PP An-Nafi'iyah Bangkalan dated January 27, 2023.

[34] Interview with KH. Fauzan Zaini, as Leader of the Pesantren Miftahul Ulum Karang Durin, Sampang dated January 17, 2023.

[35] Roger Cohen, "Globalist: Paying a Deadly Price for U.S. Global Hubris," *International Herald Tribune*, 2005.

[36] Tuti Alwiyah et al., "Yellow Book Learning Management in Islamic Boarding Schools," *JMKSP (Jurnal Manajemen, Kepemimpinan, Dan Supervisi Pendidikan)*, 2023, https://doi.org/10.31851/jmksp.v8i1.11146.

[37] Interview with Mahrus Ali, as researcher of Pesantren Madura dated January 22, 2023.

[38] Interview with KH. Muhammad Rosyid Lailur Rahman, the leader of Pesantren Ummul Qura as-Suyuthi dated January 29, 2023.

Meanwhile, KH. Taufik Hasyim emphasized that "*Sumber Anom Pesantren must always be ready to face transformation*",[39] while Moh. Hapsin as *santri* of Pesantren Syaikhona Moh. Kholil Bangkalan) said "*Of course, Pesantren must be able to develop students' human resources in the digital field and are required to be able to master it because if students don't master digital they will be left behind*".[40]

In conclusion, according to Pesantren As-Somadiyah Bangkalan leaders, there are at least three ways *pesantren* respond to the digital transformation of Islamic education. First, prepare for liberation related to digitalization in the *pesantren* world by mapping the advantages and disadvantages so as to accelerate educational goals. Second, prepare software and hardware that supports the achievement of Islamic education. Third, mentally prepare to face digital transformation.[41]

The phases and techniques of *pesantren* in implementing digital transformation of Islamic education have been carried out by leaders, religious instructors, santri (*pesantren* students), *pesantren* alumni, and the larger community through various implementations.[42] Despite differences in implementation, each *pesantren* strives to create digital transformation in line with its capabilities, availability of facilities, infrastructure, and natural resources. *Pesantren* digital transformation has the potential to attract a large number of viewers, followers, and subscribers. As can be seen, practically every *pesantren* has a YouTube channel and an Instagram account that students, alumni, supporters, and the general public follow.[43] This digital change is a new wave in terms of addressing millennials and post-millennials with Islamic education and civilizational jurisprudence, *pesantren* preaching. Therefore, the implementation of digital transformation of Islamic education continues to be developed and in accordance with the rule of jurisprudence "*Al-Muhafadzah ala al-Qadim al-Salih wa al-Akhdu bi al-jadid al-Ashlah*". Based on this principle, digital transformation includes "*wa al-Akhdu bi al-jadid al-Ashlah*".[44] Certainly, this digital transformation is a *wasilah* whose law is the same as *maqashid*, and the implementation of digital transformation of Islamic education is in accordance with maintaining logic (*hifdu al-aql*) in the concept of *maqashid sharia*.[45]

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[39] Interview with KH. Taufik Hasyim, the Leader of Pesantren Bustanul Ulum, Sumber Anom, Pamekasan, dated January 17, 2023.

[40] Interview with Moh. Hapsin, santri of Pesantren Syaikhona Moh. Kholil Bangkalan dated January 21, 2023

[41] Interview with Zainal Abidin, the researcher of pesantren Madura, date January 27, 2023.

[42] Chusaini Mustas, "Information Behavior of Santri in the Digital Era: From Literacy to Multiliteracy," *Library Philosophy and Practice*, 2021.

[43] Al Himni Fahma and Mohammad Darwis, "Eksistensi Para 'Gus' Di Instagram: Visual Semiotik Sebagai Dakwah Baru Di Era Digital," *Dakwatuna: Jurnal Dakwah Dan Komunikasi Islam*, 2020, https://doi.org/10.36835/dakwatuna.v6i2.655.

[44] J. A. bin A. B Al-Suyuti, *Al-Asbah Wa Al-Nadzair Fi Qawaid Wa Furu' Fiqh Asl-Syafi'i* (Beirut: Dar al-Kutub al-'Ilmiyyah, 1998); Taufiq, "Fiqh of Civilization : The Consistency of Nahdlatul Ulama ' s Political Fatwa Toward a Century Introduction"; Situmorang and Aslam, "Exploring Religious Teaching and Attitudes of Traditional Muslim on Social Politics in Indonesia."

[45] Muhammad Taufiq, "A Critique against the Perspective of Al-Thufy on the Contradiction of Maslahat and the Holy Text," *Millati: Journal of Islamic Studies and Humanities* 5, no. 2 (2020): 121–28, https://doi.org/10.18326/mlt.v5i2.121-128; Faishal Agil Al Munawar, "'Abd Al-Majīd Al-Najjār's Perspective on Maqāṣid Al-Sharī'ah," *JURIS (Jurnal Ilmiah Syariah)* 20, no. 2 (December 15, 2021): 209–23, https://doi.org/10.31958/JURIS.V20I2.4281; Muhamad Taufiq, "Nikah Sirri Perspektif

3.3 Opportunities and Challenges for Pesantren in Facing Digital Transformation in Islamic Education

Every *pesantren* in Madura has chances and problems based on the scenario, conditions, and domicile they encounter, owing to similarities in perspective and variances in digital transformation implementation. Every *pesantren* has the same chances to promote digital transformation, however the problems they confront differ. These issues all revolve around insufficient human resources and restricted facilities and infrastructure.

The Leader of Mudrikah Kembang Kuning, said that there were four opportunities for his *pesantren* in facing digital transformation in Islamic education. First, developing digital literacy, processing digital data, by utilizing the sophistication of existing technology and maximizing social media with various types in the development of Kyai Mudrikah hermitage Kembang Kuning. Second, developing a hybrid class that can be accessed by all parties in the global community, anytime, anywhere with interactive features that will increase participation of students and the global community. This includes carrying out technology-based innovation by combining learning and technology with cloud-based learning management systems, and so on. Third, optimizing the use of social media to broaden the reach of *pesantren* teaching *pesantren* without boundaries, accelerating the process of empowering the global community, and accelerating pesantren' economic independence, and so on. Fourth, strengthen networks among Pesantren by partnering across religious organizations and with specific enterprises or technical institutions in addressing the difficulties and possibilities of digital transformation at Kyai Mudrikah hermitage, Kembang Kuning.[46]

Meanwhile, there are many challenges faced. First, Kyai Mudrikah hermitage, Kembang Kuning, needs to adapt to continuously developing technology. Second, it requires sufficient time to change the mindset of administrators, teachers and the surrounding community. Third, investment in facilities and infrastructure is not cheap. Fourth, preparation of human resources who have special competencies in the field of technology, and weak understanding of digital literacy.[47]

For KH. Khoiron Zaini, leader of Miftahul Ulum At-Taufiq Robatal Sampang, saw that opportunities were in the process of building student dormitories, and this would be a great opportunity for digital transformation.[48] "*Because our*

Maqashid Syariah," *Al-Manhaj: Journal of Indonesian Islamic Family Law* 1, no. 2 (2019): 114, https://doi.org/10.19105/al-manhaj.v1i2.3138; Taufiq, "Implementasi Moderasi Beragama Dalam Kontroversi Tawassul: Studi Fikih Komparatif"; Jasser Auda, *Maqasid Al-Shariah as Philosophy of Islamic Law*, n.d.

[46] Interview with KH. Achmad Muhlis, the Leader of Pesantren Padepokan *Kiai* Mudrikah Kembang Kuning Pamekasan, dated January 15, 2023.

[47] Muhammad Rijal Fadli and Siti Irene Astuti Dwiningrum, "Pesantren Digital Literacy: An Effort to Realize the Advancement of Pesantren Education," *ULUL ALBAB Jurnal Studi Islam*, 2021, https://doi.org/10.18860/ua.v22i2.14221; Mustas, "Information Behavior of Santri in the Digital Era: From Literacy to Multiliteracy"; Testiana Deni Wijayatiningsih et al., "Digital Literacy: Implementasi Pelatihan English Speaking Performance Pada Santriwati Pondok Pesantren Sahlan Rosyidi," *Jurnal Surya Masyarakat*, 2021, https://doi.org/10.26714/jsm.4.1.2021.18-28; Safitri, "Potensi Santri dalam Transformasi Digital Literacy Memasuki Era Revolusi Industri 4.0 di Pondok Pesantren Modern."

[48] Katharina Gilli, Michael Nippa, and Michael Knappstein, "Leadership Competencies for Digital Transformation: An Exploratory Content Analysis of Job Advertisements," *German Journal of Human Resource Management*, 2022,

boarding school is still in its early phases, it takes time to arrange the facilities, tools, and people resources. When everything is in place, Miftahul Ulum At-Taufiq Pesantren will be ready to conduct digital transformation".[49]

According to KH. Khoirul Ibad that *pesantren* can educate more students, make lectures more engaging through videos and apps, and connect with other Pesantren or academics from around the world. Challenges: Some locations may not have fast internet, teachers may be unfamiliar with technology, and Pesantren norms prohibit students from bringing electronic devices. It is also critical to protect the confidentiality of students' personal data.[50]

KH. Fauzan Zaini said that "*We feel that, like other pesantren, the challenge is to be clever in mitigating the negative impacts of digital transformation. Just imagine, Pesantren which used to be synonymous with "closedness" are now as a result of digital development, like it or not, they have to be open. "Well, in this position, Pesantren managers sometimes become dilemmatic and are unsure about taking a stand*".[51]

For KH. Taufik Hasyim although there are human resources challenges,[52] because few are qualified in digital, we have a big opportunity to develop digital transformation in all lines, a centralized data collection system,[53] from PAUD, TK, MI, MTs, MA has implemented a centralized system at one point, data on students, students and alumni teachers.[54]

According to KH. Muhammad Rosyid Lailur Rahman, The mindset and openness to these changes represents the chance for digital transformation for us, particularly the *pesantren* community here. This is significant because knowledge of these changes must be utilized as a starting point for welcoming these changes. Aside from that, the resources we presently have are adequate to build a multimedia boarding school team with the primary objective of disseminating the value of Islamic education through different digital channels. This is an extra benefit of adjusting to this transition. Meanwhile, the barrier is that digital media is entirely limited, which means that we do not yet have the most up-to-date gadgets that allow digital-based learning, so these limits will impede students' entrance to the digital world. Aside from that, we frequently encounter delays in knowledge regarding digital transformation, which is evolving at such a quick pace that items we deem as "up-to-date" are often old products for people outside *pesantren*.[55]

Meanwhile, Zainal Abidin believes that there are many opportunities, including accelerating the acceleration of students' understanding in *pesantren*,

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https://doi.org/10.1177/23970022221087252.

[49] Interview with KH. Khoiron Zain, the Leader of Pesantren of Miftahul Ulum At-Taufiq Robatal Sampang, dated January 17, 2023.

[50] Interview with KH. Khoirul Ibad, as Leader of PP An-Nafi'iyah Bangkalan dated January 27, 2023.

[51] Interview with KH. Fauzan Zaini, as Leader of the Pesantren Miftahul Ulum Karang Durin, Sampang dated January 17, 2023.

[52] Qolbi Khoiri and Ani Aryati, "The Problems of Pesantren Education in Improving Human Academic Quality in The Global-Multicultural Era," *Didaktika Religia*, 2021, https://doi.org/10.30762/didaktika.v9i1.3274.

[53] Didem Serdar, "Kepemimpinan Kyai dalam Memberdayakan Kewirausahaan Santri (Studi Multi-Situs Pondok Pesantren Riyadlul Jannah Pacet dan Pondok Pesantren Sidogiri Pasuruan)," *Sustainability (Switzerland)*, 2019.

[54] Interview with KH. Taufik Hasyim, the Leader of Pesantren Bustanul Ulum, Sumber Anom, Pamekasan, dated January 17, 2023.

[55] Interview with KH. Muhammad Rosyid Lailur Rahman, the leader of Pesantren Ummul Qura as-Suyuthi dated January 29, 2023.

creating a holistic understanding, being able to prepare the generation to face the times. However, it also has challenges, technology to speed things up, so if it is wrong it will be misused, for example to play games. "*Then, it mentally speeds up and shortens time. If you are not ready, then you will create 'strawberry' (low-mentally) students who are mentally not good, stressed and a little crying. Lastly, technology has negative things that can pollute the behavior of students*".[56]

Students may investigate the features of *pesantren* in the internet world, which is accessible to the larger community, and the *pesantren* economy can become more developed and organized in its use of digital in conducting its business. Although not everything in *pesantren* can be adapted to the digital world since *pesantren* have their own unique qualities or extremely strong local content that serves as a symbol of the *pesantren* itself.[57]

Pesantren, also known as traditional education, offers the same potential as formal education institutions, according to this map of opportunities and problems. Madura, too, has more options than other educational institutions. Apart from the Madurese people's remarkable dedication to Pesantren, this is inspired by the Madurese people's religiosity.[58]

In creating digital transformation of Islamic education in *pesantren*, every Pesantren in Madura has potential, which becomes an opportunity, and opposition, which becomes a struggle. The potential of *pesantren* with many human resources is an opportunity, but quality remains a barrier. Meanwhile, developing digital transformation facilities and infrastructure for Pesantren Madura remains a challenge due to the high cost of digitalization facilities and infrastructure, as well as the time, steps, and mentality required to change the mindset of students, sympathizers, and the community in the digital transformation of Islamic education in Pesantren Madura.

4. Conclusion

The digital revolution of Islamic education in Pesantren Madura is an unavoidable and necessary requirement. The Pesantren Madura, which was previously shuttered, is currently reopening. There are at least two reasons for this, the first being the quick pace of digital transition. Second, there is an increase in formal education in salam (traditional) Islamic boarding institutions. The perspectives of Madurese Kiai on the digital transformation of Islamic education demonstrate that Pesantren Madura are not static but accept the digital transformation of Islamic education as a kind of innovation while remaining true to tradition. This is in accordance with the rules of jurisprudence "*Al-Muhafadzah ala al-Qadim al-Shalih wa al-Akhdu bi al-jadid al-Ashlah*". Based on this principle, digital transformation includes "*wa al-Akhdu bi al-jadid al-Ashlah*".

Pesantren respond to the digital revolution of Islamic education in various ways depending on the facilities, circumstances, and infrastructure they have i.e., Interactive Flat Panel, 12 SmartTVs, 9 cameras, 33 PCs, 13 All in One Personal Computers, 1 NUC 12 generation i9 Personal Computer, etc. In addition, there are pesantren that are still in the early stages of development, with a concentration on facility construction and infrastructure digital transformation. As

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[56] Interview with Zainal Abidin, the researcher of pesantren Madura dated January 27, 2023.

[57] Interview with Moh. Hapsin, santri of Pesantren Syaikhona Moh. Kholil Bangkalan dated January 21, 2023.

[58] Ali Sodiqin and Nur Komala, "The Resilience of Madurese Santri in Facing Modernity: A Study of the Indonesian Ngabuleh Tradition," *IBDA`: Jurnal Kajian Islam Dan Budaya*, 2022, https://doi.org/10.24090/ibda.v20i1.5390.

a result of this approach, pesantren have several chances, such as pesantren that have practiced digital literacy, hybrid classes, and others. Despite the numerous prospects, the digital transformation of Islamic education faces numerous problems, including a lack of human resources and suitable digital infrastructure. Thus, even though Islamic boarding schools in Madura have started digitization and will implement digitalization and then digital transformation in Islamic education, Madurese Islamic boarding schools still have to maintain the yellow book as the epistemology of Islamic studies, pay attention to digital etiquette and strengthen the religious moderation of Ahlus Sunnah wal Jama'ah. So the digital transformation in Pesantren Madura is expected to be able to integrate Islamic knowledge with science.

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