

## **QUR'ANIC LEARNING IN THE DIGITAL ERA: A STUDY ON DIGITAL APPLICATIONS AND THEIR IMPACT**

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### ***Abstract***

The utilization of digital technology has brought significant changes to the way Muslims study the Qur'an. This study aims to examine the optimization of digital technology use in Qur'anic studies, as well as to explore the opportunities and challenges, with a focus on digital applications. Using a qualitative approach based on a literature review derived from various sources—including books, scholarly journals, articles, and research reports relevant to the topic—this research reveals that digital technology offers various advantages, such as broad access, interactivity, and flexibility. However, challenges such as the potential misuse of shallow interpretations, dependence on algorithms, and the declining quality of interaction between teachers and students have become major concerns. Therefore, the use of digital technology in Qur'anic studies must be approached wisely, adhering to the principles of Islamic scholarship and spirituality. In addition, digital literacy and collaboration between religious scholars and technology developers are essential to ensure that the digital applications and platforms used truly support a deep and contextual understanding of the Qur'an. Such efforts can help users discern information from valid sources and avoid the spread of content that contradicts Islamic principles.

**Keywords:** Digital Technology, Qur'anic Education, Modern Era

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## INTRODUCTION

The development of digital technology has influenced various aspects of human life<sup>1</sup>, including the way religious texts like the Qur'an are studied<sup>2</sup>. Today, digital applications, online platforms, and artificial intelligence (AI) provide ease and broader access to religious resources<sup>3</sup>. For instance, digital Qur'anic exegesis applications allow Muslims worldwide to access the sacred text and its interpretations anytime and anywhere<sup>4</sup>. This technological advancement not only accelerates access to religious knowledge but also has the potential to enrich individual spiritual experiences. Digital technology facilitates the dissemination of religious content in diverse formats, such as video exegesis, audio recitations, and online discussions. Thus, Qur'anic learning is no longer confined to physical spaces like mosques or madrasas but can be conducted anytime and anywhere, demonstrating the immense potential of digital technology in modern Qur'anic education.

Although digital technology offers many conveniences, its use in Qur'anic studies still faces several challenges<sup>5</sup>. One major issue is the potential distortion of interpretation<sup>6,7</sup>, as texts can be easily fragmented or misunderstood out of context. Furthermore, the spread of unverified information<sup>8</sup> and a lack of scholarly authority in much of the content circulating online<sup>9</sup> can lead to misconceptions about Islamic teachings.

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<sup>1</sup> Ida Faridatul Hasanah and others, 'Integrating Technology and Student Learning Independence in Islamic Religious Education', *Attanwir: Jurnal Keislaman Dan Pendidikan*, 15.2 (2024), 127–38.

<sup>2</sup> Dewi Shara Dalimunthe, 'Transformasi Pendidikan Agama Islam: Memperkuat Nilai-Nilai Spiritual, Etika, Dan Pemahaman Keislaman Dalam Konteks Modern', *Al-Murabbi Jurnal Pendidikan Islam*, 1.1 (2023), 75–96.

<sup>3</sup> Dalimunthe.

<sup>4</sup> Syarif Hidayat, 'Al-Qur'an Dan Tantangan Society 5.0', *SALIHA: Jurnal Pendidikan & Agama Islam*, 3.2 (2020), 1–24.

<sup>5</sup> Zumhur Alamin and Lukman Lukman, 'Pemanfaatan Teknologi Informasi Dalam Pengembangan Materi Pendidikan Agama Islam: Tinjauan Aplikasi Interaktif Al-Qur'an Digital', *TAJDID: Jurnal Pemikiran Keislaman Dan Kemanusiaan*, 6.2 (2022), 296–306.

<sup>6</sup> Ana Kurnia Sari, Khoirul Amin, and Mustiza Isnanimataka Isnanimataka, 'Etika Artificial Intelligence (AI) Dalam Pendidikan Islam: Mengatasi Tantangan Distorsi Dan Misinterpretasi', in *Proceeding International Conference on Tradition and Religious Studies*, 2024, III, 350–59.

<sup>7</sup> Muhamad Wafa Ridwanulloh, 'Fenomena Matinya Kepakaran: Tantangan Dakwah Di Era Digital', *Konferensi Integrasi Interkoneksi Islam Dan Sains*, 5.1 (2023), 121–27.

<sup>8</sup> Arsyad Nuzul Hikmat and Anis Masruri, 'Verifikasi Informasi Dan Ancaman Penyebar Hoaks Menurut Q: S Al-Hujurat & An-Nur', *Tadwin: Jurnal Ilmu Perpustakaan Dan Informasi*, 1.1 (2020), 13–31.

<sup>9</sup> Eka Maina Listuti, 'Penanggulangan Penyebaran Hoaks Yang Mengancam Keamanan Negara Indonesia Di Dunia Maya Dengan Pendekatan Bela Negara', *Jurnal Magister Ilmu Hukum*, 8.1 (2023), 16–35.

Additionally, there is concern that the use of technology in Qur'anic education might diminish the quality of teacher-student interaction, which has traditionally been regarded as a crucial component of Islamic education<sup>10</sup>. Therefore, in-depth research is needed to examine how digital technology is used, its positive and negative impacts, and how it can be optimally utilized to support a correct and profound understanding of the Qur'an.

Several previous studies have examined the use of Progressive Web Apps as tools to assist in learning and understanding Qur'anic recitation<sup>11</sup>, while Hawalia explored the application of digital learning-based methods for Qur'anic education<sup>12</sup>. Additionally, research by Lidia et al. investigated the use of Augmented Reality-based learning media for Hijaiyah letters and Makharijul Huruf, featuring tools designed to facilitate the study of tajwid.<sup>13</sup> However, these studies have not thoroughly explored the opportunities and challenges in the use of digital technology for Qur'anic learning. This study seeks to fill that gap by offering a more comprehensive conceptual approach to analyzing both the opportunities and challenges of digital technology utilization in Qur'anic studies, while also providing strategic recommendations for its future development.

Challenges such as the potential distortion of interpretation, the spread of unverified religious content, and the diminishing quality of teacher-student interaction—an essential characteristic of traditional learning—have become critical issues in the use of digital technology for Qur'anic studies. Therefore, it is crucial to further examine how the opportunities offered by technology can be maximized and how these challenges can be addressed through appropriate approaches. This study aims to examine the opportunities and challenges of utilizing digital technology in Qur'anic studies. It seeks to provide a balanced perspective on the application of digital technology in Qur'anic education while offering recommendations for better utilization in the future.

## RESEARCH METHOD

This study employs a library research method to examine the opportunities and challenges of utilizing digital technology in Qur'anic studies. To ensure relevance and credibility, the selected literature is limited to works that explicitly discuss digitalization or the application of technology in the context of Qur'anic learning, published between 2014 and 2024, and sourced from reputable journals, academic books, or leading research institution reports in both Indonesian and English. The synthesis process begins with an initial exploration of databases such as Scopus, Google Scholar, and university libraries; followed by screening based on abstracts and keywords; then thematic coding is conducted to categorize findings related to opportunities, challenges, and recommendations; and finally, triangulation across sources is applied to ensure

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<sup>10</sup> Ais Isti'ana, 'Integrasi Teknologi Dalam Pembelajaran Pendidikan Islam', *Indonesian Research Journal on Education*, 4.1 (2024), 302–10.

<sup>11</sup> Sitti Aisa and others, 'Application of Progressive Web Apps Technology to the Dirosa Method Qur'an Learning Application', *Journal of CoSciTech (Computer Science and Information Technology)*, 3.2 (2022), 66-72.

<sup>12</sup> Hawalia Hastani, 'Methods of Learning the Qur'an Based on Digital Learning', *Al Ghazali*, 6.1 (2023), 115-31.

<sup>13</sup> Deni Lidianti and others, 'Utilisation of Augmented Reality Technology in Learning Hijaiyah Letters and Makharijul Huruf', *TelKa*, 12.02 (2022), 67-76.

consistency and depth of interpretation. Data is obtained from various types of literature, including books, scholarly journals, articles, and research reports relevant<sup>14</sup> to both religious and technological studies. encompassing both religious and technological studies. The researchers compiled and organized information from these sources to analyze patterns, trends, and optimization strategies applied in various contexts.

## RESULTS AND DISCUSSION

### The Development of Digital Technology in Qur'anic Education

The evolution of digital technology over recent decades has significantly transformed various aspects of life<sup>15</sup>, including Qur'anic education. Traditionally, Qur'anic learning was conducted in mosques or madrasas, where teachers and students engaged face-to-face<sup>16</sup>. Access to tafsir texts and supporting literature was also very limited, as they were often only available in printed formats that were difficult for the general public to access. However, with technological advancements, Qur'anic learning has undergone digitalization, which has simplified access, interaction, and the dissemination of Qur'anic knowledge. This process began with the digitalization of Qur'anic texts into computer formats, allowing people to read and search verses more quickly and efficiently<sup>17</sup>.

In its early stages, the use of technology in Qur'anic studies started with the digitalization of Qur'anic texts into digital print media during the 1980s<sup>18</sup>. At that time, data storage capabilities were limited, so efforts to create a digital version of the Qur'an involved copying the text into computer formats and storing it on CD-ROMs or floppy disks<sup>19</sup>. This innovation enabled faster and more efficient printing and distribution of the Qur'an.

The era of Qur'anic digitalization further advanced with the development of Qur'anic software equipped with additional features<sup>20</sup>. From the late 1990s to the early 2000s,

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<sup>14</sup> Sugiyono, *Metode Penelitian Pendidikan (Pendekatan Kuantitatif, Kualitatif, Dan R&D)* (Bandung: Alfabeta, 2018).

<sup>15</sup> Ida Faridatul Hasanah, Fais Nurul Hadi, and Uswatun Hasanah, 'Mobile Learning Media for Islamic History Studies: Evaluation and Shaping Futures', *Al-Tadzkiyyah: Jurnal Pendidikan Islam*, 13.1 (2022), 1–18.

<sup>16</sup> Moh Roqib, *Ilmu Pendidikan Islam; Pengembangan Pendidikan Integratif Di Sekolah, Keluarga Dan Masyarakat* (LKIS Pelangi Aksara, 2009).

<sup>17</sup> Septi Najmi Khairati, 'Penggunaan Tafsir Digital Pada Mahasiswa Ilmu Al-Qur'an Dan Tafsir (Studi Kasus Pada Mahasiswa IAT 2017)' (FU, 2022).

<sup>18</sup> Hamdan Hidayat, 'Sejarah Perkembangan Tafsir Al-Qur'an', *Al-Munir: Jurnal Studi Ilmu Al-Qur'an Dan Tafsir*, 2.01 (2020), 29–76.

<sup>19</sup> Machsun Rifauddin and Arfin Nurma Halida, 'Urgensi Perpustakaan Islam Digital Dalam Menyediakan Literatur Keislaman Bagi Muslim Milenial'.

<sup>20</sup> Khairati.

various Qur'anic software programs for computers began to emerge, offering functionalities such as keyword searches, translations, and digital exegesis<sup>21</sup>. For example, *Al-Qur'an in Word* software made it easier for users to search for verses and insert them into Microsoft Word documents. These software programs were particularly helpful for researchers and students of Qur'anic studies, eliminating the need to reference bulky printed books<sup>22</sup>. Moreover, the availability of such software enabled more sophisticated search capabilities, such as root-based word searches in Arabic, which were previously difficult to conduct manually<sup>23</sup>.

Entering the internet era, the development of digital technology for Qur'anic learning accelerated with the advent of various websites and online platforms<sup>24</sup>. Websites such as *quran.com*, *tafsirq.com*, and *haditsweb* have become primary references for those seeking to read, listen to, and study the Qur'an online. These platforms are equipped with features like translations in multiple languages, tafsir from various scholars, and audio recitations by renowned Qari<sup>25</sup>. Additionally, interactive features like verse searches, thematic verse grouping and contextual linking<sup>26</sup> offer a more dynamic and in-depth learning experience. These websites provide broad and easy access, allowing anyone from different parts of the world to use them at any time.

The next advancement came with the emergence of mobile applications, making Qur'anic access more practical through smartphones and tablets<sup>27</sup>. Apps such as *Quran Pro*, *iQuran*, and *Ayat* enable users to read and listen to the Qur'an anywhere and anytime. These apps also include various appealing features, such as night mode for reading in the dark, memorization reminders, and options to bookmark specific verses<sup>28</sup>. The presence of these applications not only simplifies the learning process but also encourages individuals to interact with the Qur'an more frequently in daily life. Furthermore, some

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<sup>21</sup> Maslamah Maslamah and ANWARUDIN ANWARUDIN, 'Literasi Digital Pada Masyarakat' (SULUR PUSTAKA, 2022).

<sup>22</sup> Maslamah and ANWARUDIN.

<sup>23</sup> Anas Abdur Rohim Khoiri, 'Perluasan Pencarian Ayat Al-Qur'an Berdasarkan Makna Kata Menggunakan Wordnet Dengan Metode Wu Palmer' (Universitas Islam Negeri Maulana Malik Ibrahim, 2018).

<sup>24</sup> Rabiatul Adawiyah, *Peran Literasi Digital Dalam Pembelajaran Al-Qur'an Hadis* (Penerbit NEM, 2022).

<sup>25</sup> Ahmad Yani and others, 'Studi Perbandingan Fitur-Fitur Aplikasi Al-Quran Digital Karya Greentech Apps Foundation Dan Aplikasi Al-Quran Muslim Media Untuk Mengetahui Perbedaan Kedua Fitur Aplikasi', *Jurnal Riset Agama*, 1.3 (2021), 493–516.

<sup>26</sup> Nur Afif, 'Inovasi Pembelajaran Guru Dengan Media Digital Di Era 5.0 Sebagai Daya Pikat Siswa Pada Pelajaran Pendidikan Agama Islam (PAI)', *GAPAI: Jurnal Pendidikan Agama Islam*, 1.2 (2023), 205–14.

<sup>27</sup> Tri Triastari Nur, 'Perancangan Aplikasi Pembelajaran Membaca Al-Qur'an Dengan Metode Qiro'ah Berbasis Android', *Universitas Islam Negeri Alauddin Makassar*, 2013.

<sup>28</sup> Sopa Ulkarimah and Tatang Tatang, 'Tarteel: Sebuah Aplikasi Alternatif Bagi Peningkatan Penghafal Al-Qur'an', *Jurnal Pendidikan Tambusai*, 8.2 (2024), 17805–11.

apps offer community features where users can discuss or share their understanding of specific verses, enriching their learning experiences<sup>29</sup>.

Advancements in digital technology have also enabled the application of cutting-edge technologies such as artificial intelligence (AI) and big data in Qur'anic education<sup>30</sup>. AI facilitates the creation of features such as word analysis, automatic translations, and tafsir recommendations based on specific contexts<sup>31</sup>. For instance, AI technology can map themes within the Qur'an and provide tafsir suggestions relevant to those themes. Meanwhile, big data allows for analyzing user habits, enabling platforms to tailor the content presented based on users' interests and needs<sup>32</sup>. This technology provides a more personalized and interactive learning experience, where users can study the Qur'an at their own pace and according to their preferences.

Thus, the advancement of digital technology has revolutionized Qur'anic learning from traditional, limited methods to more expansive, interactive, and accessible approaches. The digitalization of Qur'anic texts, software development, the emergence of online platforms, and mobile applications have simplified how Muslims read, understand, and delve deeper into the Qur'an. Additionally, the application of advanced technologies like AI and big data offers a more personalized and contextual learning experience.

### **Utilizing Digital Technology in Qur'anic Education: Opportunities and Challenges**

The development of digital technology has opened up many new opportunities for the dissemination of Qur'anic learning around the world. One manifestation of this is through social media, which is now widely used to deliver Qur'ānic studies in various formats such as tafsir videos, podcasts, online lectures, and interactive discussions<sup>33</sup>. Platforms such as YouTube, Instagram, Facebook and TikTok are becoming the main medium for preachers and teachers to reach a wider and more diverse audience<sup>34</sup>. With

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<sup>29</sup> Eki Adedo and Deriwanto Deriwanto, 'Perkembangan Media Digital Dan Pemanfaatannya Dalam Pembelajaran Pendidikan Agama Islam' (Institut Agama Islam Negeri Curup, 2024).

<sup>30</sup> Fitri Sarinda and others, 'Pendidikan Agama Islam Berbasis Teknologi (Ai) Artificial Intelligence', *Jurnal Kajian Penelitian Pendidikan Dan Kebudayaan*, 1.4 (2023), 103–11.

<sup>31</sup> Anis Sukmawati, 'Pemanfaatan Artificial Intelligence Untuk Meningkatkan Efisiensi Pembelajaran Al Quran', *Dinamika Penelitian: Media Komunikasi Penelitian Sosial Keagamaan*, 24.01 (2024), 53–72.

<sup>32</sup> Erwin Erwin and others, *Transformasi Digital* (PT. Sonpedia Publishing Indonesia, 2023).

<sup>33</sup> Siti Nur Lailatul Azizah and others, 'Exploring Digital Tafsir: A Comparative Study of Tafsir. Web. Id and Tafsirq. Com', *Canon Religia*, 1.2 (2024), 209-22.

<sup>34</sup> Alfi Mardhiyatus Stanayah, Nur Efendi, and Kojin Mashudi, 'Digitalisation of Da'wah: Challenges and Strategies to Inspire in the Age of Technology', *El-Mujtama: Journal of Community Service*, 4.4 (2024), 1830-46.

social media, Qur'anic learning is no longer limited to mosques or madrasas, but can be accessed by anyone with an internet connection, anytime and anywhere.

The dissemination of Qur'anic learning through social media offers various conveniences and benefits<sup>35</sup>. Firstly, video or audio content provides a more interactive and engaging learning experience compared to reading text<sup>36</sup>. Tafsir videos, for example, allow viewers to hear Qur'anic verses explained in simple language, complete with contextually relevant examples<sup>37</sup>. Secondly, online discussions conducted through platforms such as Zoom or Google Meet provide a space for audiences to ask questions directly to presenters, resulting in more dynamic interactions<sup>38</sup>. This helps bridge the gap between teachers and learners who may live far apart.

Despite its many benefits, the utilisation of digital technology in Qur'anic learning also faces serious challenges. One of these is the dissemination of false or inaccurate information<sup>39</sup>. Due to the open nature and rapid spread of information on social media, anyone can upload content about the Qur'ān without adequate verification or scholarly authority. This often leads to confusion among the public, especially if the information conveyed is not based on valid interpretations or issued by those who lack understanding of Islamic sciences<sup>40</sup>. The potential for the spread of deviant or extreme teachings also increases along with the open access to various unfiltered content.<sup>41</sup> In addition, the lack of scientific authority is also a problem that is often not realised by the general public. Some content creators on social media may not have a strong background in Islamic education<sup>42</sup>, but manage to attract the attention of the audience with interesting and popular delivery. This can cause bias in understanding the teachings of the Qur'an and Islam in general. The spread of unverified lectures or interpretations can also cause

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<sup>35</sup> Adawiyah.

<sup>36</sup> Zunan Setiawan and others, *Multimedia Education: Concepts and Applications in the Era of Industrial Revolution 4.0 Towards Society 5.0* (PT. Sonpedia Publishing Indonesia, 2023).

<sup>37</sup> Dyitha Nabilah Barkah, 'Gus Baha's Qur'anic Tafsir recitation on Youtube' (FU).

<sup>38</sup> Meiliyah Ariani and others, *Application of Learning Media in the Digital Age* (PT. Sonpedia Publishing Indonesia, 2023).

<sup>39</sup> Astrid Kusuma Rahardaya, 'Literature Study on the Use of Tiktok Social Media as a Means of Digital Literacy during the Covid-19 Pandemic', *Journal of Business Information Technology and Systems*, 3.2 (2021), 308-19.

<sup>40</sup> Herman Dermawan, 'The Role of Social Media in the Formation of Islamic Narratives in the Digital World', *Andragogia: Journal of Education Science And Islamic Studies*, 1.1 (2024), 21-30.

<sup>41</sup> Lukman Nusa, 'Millennials and Cyber Religion' (Communication Science UIN Sunan Kalijaga, 2021).

<sup>42</sup> Dessy Kushardiyanti, 'Digital Da'wah Content Trends by Millennial Content Creators through Tiktok Social Media in the Era of the Covid-19 Pandemic', *ORASI: Journal of Da'wah and Communication*, 12.1 (2021), 97-114.

polemics in society<sup>43</sup>, even conflicts between groups, if not addressed wisely. Therefore, it is important to raise awareness among social media users to be more selective in choosing learning resources.

Another challenge is the phenomenon of "virality" on social media, where content that is more controversial or sensationalised tends to get more attention than content that is educative and in-depth<sup>44</sup>. This can backfire on Qur'anic learning, as content presented to fulfil viral demands often comes at the expense of accuracy and depth. This phenomenon also affects the way content is presented, where many creators focus on concise and easy-to-understand delivery, while ignoring the complexity of Islamic teachings that actually require deeper study.

Therefore, it is very important to develop digital literacy among the public, so that they have the ability to critically assess and sort out sources of information related to the teachings of the Qur'an circulating online. The public needs to be equipped with a strong understanding of how to verify the validity of<sup>45</sup> content, recognise the scientific authority of content creators, and understand the credibility and methodology used in delivering interpretations or explanations of Qur'anic verses. In addition, synergies between technology developers, religious experts and Islamic educational institutions need to be strengthened to create digital platforms that can facilitate Qur'anic learning with high scientific standards. This collaboration could include the creation of verified digital content, the development of algorithms that prioritise the dissemination of valid information, and the provision of interactive features that can help users understand Qur'anic verses contextually and in-depth. With this comprehensive approach, the development of digital technology can be directed towards enriching people's understanding of the teachings of the Qur'an while maintaining the purity and authenticity of Islamic teachings amidst the rapid and infinite dynamics of information in this modern era.

### **Strategies for Optimizing Digital Technology in Qur'anic Studies**

To maximise the benefits of digital technology in Qur'anic studies, collaboration among technology developers, scholars and academicians is essential. Developers can design user-friendly and interactive platforms<sup>46</sup>, while scholars and academics act as providers of accurate and valid content. The first step that can be taken is to build a collaborative forum between various parties to discuss the needs and expectations of

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<sup>43</sup> Husnul Hotimah, 'Hoax in the Perspective of Law No. 19 of 2016 on Electronic Information and Transactions and Islamic Law' (Faculty of Sharia and Law, Syarif Hidayatullah State Islamic University Jakarta, 2018).

<sup>44</sup> Lidya Agustina, 'Content Virality in Social Media', *Popular Semi Scientific Magazine of Mass Communication*, 1.2 (2020), 149-60.

<sup>45</sup> Ariani and others.

<sup>46</sup> Bambang Warsita, 'The Role and Challenges of the Learning Technology Developer Profession in 21st Century Learning', *Kwangsan: Journal of Educational Technology*, 5.2 (2017), 77-90.



users<sup>47</sup>. In this forum, scholars can provide guidance on religious content, while technology developers can design features that can support the learning process, such as search features, audio tafsir, and thematic learning modules. Thus, people from all walks of life are able to access relevant knowledge more easily with a more precise understanding, and minimise misunderstandings of tafsir. In addition, users of digital technology can practice and improve their reading of the Qur'an independently.

Furthermore, an optimisation strategy could be to develop content and design standards for digital Qur'ānic apps or platforms<sup>48</sup>. These standards include guidelines for developers on how Qur'ānic content and commentaries should be presented, as well as ethical boundaries to be observed<sup>49</sup>. For example, Qur'ānic content must be vetted by a team of religious experts before uploading<sup>50</sup>, and any tafsir presented must include a clear source. With these standards in place, technology developers can ensure that their apps or platforms provide credible and useful information to users.

In addition, this collaboration can be further developed by creating a special training programme for technology developers so that they understand religious sensitivity and basic concepts in Qur'anic studies, this is in line with the opinion of Pradana et al<sup>51</sup> that with a better understanding, developers can design features that suit the needs of Qur'anic learning, such as memorisation reminder features, thematic verse grouping, and more intuitive topic mapping. Training can also help scholars and academics become more familiar with the technology, so that they can provide more relevant input for the development of app features. Collaboration also needs to be extended to the academic realm, where universities and Islamic educational institutions can act as partners in the development of digital platforms.<sup>52</sup> For example, by conducting joint research to evaluate the effectiveness of digital technology in learning the Qur'an, this is in line with Alamin's opinion that as one of the strategies in utilising technology it is necessary to conduct joint

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<sup>47</sup> Ispandi Ispandi and others, 'Designing a Web-based Learning Management System and Discussion Forum Using Next JS Framework at Mts Nurul Fiqri', *JATI (Journal of Informatics Engineering Students)*, 8.3 (2024), 3757-65.

<sup>48</sup> Hastani.

<sup>49</sup> Wiji Nurasih, Mhd Rasidin, and Doli Witro, 'Islam and Social Media Ethics for the Millennial Generation: An Examination of Surah Al-'Asr', *Al-Mishbah: Journal of Da'wah and Communication Sciences*, 16.1 (2020), 149-78.

<sup>50</sup> Hamam Faizin, 'History and Characteristics of the Qur'an and its Translations of the Ministry of Religious Affairs of the Republic of Indonesia', *Suhuf*, 14.2 (2021), 283-311.

<sup>51</sup> Pradana Anis Riantory and Pujiyanto Pujiyanto, 'The Role of Artificial Intelligence Technology in Teaching Methods of Al-Qur'an and Hadith', *Journal of Mathlaul Fattah: Journal of Education and Islamic Studies*, 15.1 (2024), 101-31.

<sup>52</sup> Okta Farhan Syahendra, 'Challenges and Innovations in Islamic Education in the Digital Age: Building a Generation with Character in the Modern Era', *Bhinneka: Journal of Education and Language Star*, 2.3 (2024), 74-89.

research<sup>53</sup>. In addition, developing a comprehensive and interactive learning module as an alternative form of facing challenges in digital technology-based Qur'an learning.

In addition, digital literacy is an important strategy to optimise the use of technology in exploring and teaching Islamic teachings<sup>54</sup>. With good digital literacy, users can utilise online platforms, Qur'an applications, and social media to learn tajweed, tafsir, or thematic studies of the Qur'an effectively. Furthermore, digital literacy helps users sort out valid information from valid sources<sup>55</sup>, thus avoiding the dissemination of content that is not in accordance with Islamic scientific principles. Thus, strategies for optimising digital technologies in Qur'ānic studies are not only about creating sophisticated platforms, but also ensuring that users can utilise them in an appropriate and responsible manner.

## CONCLUSION

Optimizing the use of digital technology in Qur'anic studies requires synergy between technology developers, religious scholars, and academicians to create platforms that are not only technically advanced but also enriched with authentic and scholarly content. This collaboration can be achieved by establishing communication forums and formulating clear content presentation standards, which involve verification and validation processes by Islamic experts. With these guidelines, technology developers can design features that align with user needs while preventing the spread of inaccurate information. Additionally, integrating technologies such as artificial intelligence (AI) and big data, when developed under the guidance of scholars and academicians, can open new opportunities for understanding the Qur'an in a more contextual and interactive manner.

However, such optimization also demands efforts to enhance digital literacy among the community, enabling users to use digital technology for Qur'anic learning more wisely. Adequate digital literacy will empower individuals to discern high-quality, authoritative content and prevent the dissemination of misleading information. Therefore, it is essential for educators not only to utilize technology as a supportive tool but also to ensure that the use of digital applications remains framed within pedagogical approaches grounded in values and scholarly authority. Educators can develop tiered guidelines for the use of Qur'anic applications based on students' levels of understanding and integrate face-to-face discussion or mentoring sessions to maintain the quality of interaction and facilitate clarification of Qur'anic meanings. Meanwhile, technology developers are encouraged to design digital learning applications that prioritize the validity of tafsir sources, incorporate interactive features such as discussion forums with religious scholars or academics, and include functions like memorization tracking and thematic quizzes to enhance user engagement. The development of transparent algorithms and preference-based recommendation features can also support a personalized learning experience that remains accurate and religiously responsible.

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<sup>53</sup> Alamin and Lukman.

<sup>54</sup> Sulthan Fathani Elsyam and Habil Syahril Haj, 'Implementation of Digital Literacy in Islamic Religious Education Learning', *Journal of Social Education and Humanities*, 3.2 (2024), 1533-44.

<sup>55</sup> I Gusti Ngurah Agung Wijaya Mahardika, 'Digital Literacy and Critical Thinking Skills as Basic Skills of Today's Teachers', *Sang Acharya: Journal of Teacher Profession*, 3.2 (2022), 70-83.

Through close collaboration between technology developers and religious experts, alongside proper education for users, the positive potential of digital technology can be maximized to support Qur'anic learning that is more flexible, interactive, and contextual, while maintaining the authenticity and credibility of Islamic teachings in the modern era.

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