Available online at: http://journal.uinsgd.ac.id/index.php/kt
Khazanah Theologia, Vol. 6 No. 3 (2024): 178-200

DOI: 10.15575/kt.v6i3.46326

Tranformation The *Talaqqī* System of Reciting The Qur'an Using Artificial Intelligence

Nurul Istiqomah[1*], Yayuk Whindari[2], Sheila Kusuma Wardani Amnesti[3]
[1,2,3] UIN Maulana Malik Ibrahim Malang, Indonesia
E-mail: istiqomah1990@uin-malang.ac.id

Abstract

Background: The *talaqqī* system in Qur'anic education traditionally emphasizes direct interaction between teacher and student to ensure authenticity of recitation and the transmission of spiritual values. However, the advancement of digital technology—particularly the use of artificial intelligence (AI)—has introduced new models in Qur'anic pedagogy. One example is the Qara'a application, which offers a self-directed learning method without the physical presence of a teacher. **Purpose:** This study aims to analyze the transformation of the *talaqqī* system into a digital format through the Qara'a application and to evaluate the accuracy of its Qur'anic recitation assessment system. **Methodology:** This study employs a descriptive qualitative approach with structured digital observation of the Qara'a application. The researcher directly engaged with the app to document its navigation flow, AI features, and learning system. Data were collected through screenshots and field notes, and analyzed thematically through the stages of data reduction, categorization, interpretation, and conclusion drawing. **Findings:** The results show that in the Qara'a system, the teacher's role is replaced by a machine that provides sample recitations, which are then imitated by the learner through voice recordings. The learning materials are structured in stages—covering writing, recitation, and a combination of both—and users cannot proceed to the next level without completing the current one. While the app offers flexibility in terms of time and place, its AI-based assessment focuses solely on makhraj (articulation point) per letter and does not account for technical issues (such as voice clarity and network stability) or the psychological state of the learner. **Research Implication:** These findings reveal a shift in the value system of *talaqqī*, from one rooted in spiritual relationships to an automated evaluative system, affecting both the meaning of authority and the quality of assessment in Qur'anic learning. **Contribution:** This study offers a new contribution to the field of digital Qur'anic education by presenting a critical analysis of AI integration in Islamic pedagogy. Its focus on the transformation of *talaqqī* and the evaluation mechanism of the Qara'a application represents a dimension that has not been widely explored in previous studies.

Keywords: Artificial Intelligence; Digital *Talaqqī;* Qur'anic learning; recitation assessment.

Abstrak

Latar Belakang: Sistem *talaqqī* dalam pembelajaran Al-Qur'an secara tradisional menekankan interaksi langsung antara guru dan murid untuk menjamin keaslian bacaan dan transfer nilai-nilai spiritual. Namun, perkembangan teknologi digital, khususnya penerapan *artificial intelligence* (AI), telah menghadirkan model baru dalam pendidikan Al-Qur'an. Salah satu wujudnya adalah aplikasi Qara'a yang menawarkan metode pembelajaran mandiri tanpa kehadiran guru secara fisik. **Tujuan**: Penelitian ini bertujuan untuk menganalisis transformasi sistem *talaqqī* ke dalam bentuk digital melalui aplikasi Qara'a, serta mengevaluasi akurasi sistem penilaian bacaan Al-Qur'an yang diterapkan dalam aplikasi tersebut. **Metodologi**: Penelitian ini menggunakan pendekatan kualitatif deskriptif dengan teknik observasi digital terstruktur terhadap aplikasi Qara'a. Peneliti secara langsung menelusuri aplikasi untuk mendokumentasikan alur navigasi, fitur AI, dan sistem pembelajaran. Data dikumpulkan melalui tangkapan layar dan catatan lapangan, lalu dianalisis secara tematik melalui tahapan reduksi, kategorisasi, interpretasi, dan penarikan kesimpulan. **Temuan**: Hasil penelitian menunjukkan bahwa dalam sistem Qara'a, peran guru digantikan oleh mesin yang memberikan contoh bacaan, kemudian ditirukan oleh murid melalui rekaman suara. Materi disusun secara bertahap—meliputi tulisan, bacaan, dan kombinasi keduanya—dan pengguna tidak dapat melanjutkan ke tahap berikutnya sebelum lulus tahap sebelumnya. Aplikasi ini memberikan fleksibilitas waktu dan tempat, namun penilaian AI hanya terbatas pada aspek

*Corresponding author

Received: March 10, 2024; Revised: October 20, 2024; Accepted: December 12, 2024

makhraj per huruf dan tidak mempertimbangkan kendala teknis (seperti kejernihan suara dan jaringan) maupun kondisi psikologis pengguna. **Implikasi Penelitian**: Temuan ini menunjukkan terjadinya perubahan nilai dalam sistem *talaqqī*, dari yang semula berbasis relasi spiritual langsung menjadi sistem evaluatif otomatis. Hal ini berdampak pada pergeseran makna otoritas dan kualitas evaluasi bacaan dalam konteks pembelajaran Al-Qur'an. **Kontribusi**: Penelitian ini memberikan kontribusi baru dalam kajian pendidikan Al-Qur'an berbasis digital, dengan menghadirkan analisis kritis terhadap integrasi AI dalam pedagogi Islam. Fokus pada transformasi *talaqqī* dan evaluasi sistem penilaian Qara'a merupakan aspek yang belum banyak dikaji dalam penelitian sebelumnya.

Kata Kunci: Kecerdasan Buatan; Pembelajaran Digital *Talaqqī*; Pembelajaran Al-Qur'an; Penilaian Pembacaan Al-Qur'an.

INTRODUCTION

Reading the Qur'an is one of the central religious practices in the lives of Muslims. The activity of learning to read the Qur'an is carried out through various models, such as learning in Taman Pendidikan Al-Qur'an (TPQ), private learning at the *ustaz's* residence, or even bringing *ustazs* into one's home. These various efforts reflect a strong need for face-to-face interaction between learners (*santrī*) and religious teachers (*ustaz*) in the learning process. The figure of the *ustaz* holds a critical role—not only in teaching the correct pronunciation (*makharijul huruf*) and tajwid rules but also in transmitting ethical and spiritual values contained in the Qur'an (Az-Zahra & Zailani, 2024). The *ustaz's* presence also guarantees the learning's legitimacy, traditionally rooted in the method of *talaqqī*.

Talaqqī—a method practiced by the Prophet Muhammad when receiving revelation from Angel Gabriel—has become an authoritative tradition in Qur'anic pedagogy. Through this system, the Prophet would recite and listen to the verses taught to him, and then teach them to his companions in a face-to-face setting. This process involved direct oral transmission (*mushafahah*) from teacher to student, allowing accurate pronunciation and real-time correction. In practice, one *talaqqī* session can consist of one *ustaz* and one *santri*, or a small group of 3–10 students for optimal results (Rosyidatul et al., 2021). This face-to-face model not only functions as a learning mechanism but also preserves the integrity of the *sanad* or chain of transmission in Qur'anic knowledge.

However, the outbreak of the COVID-19 pandemic triggered massive societal transformation, including in religious learning. Due to physical restrictions and lockdowns, internet consumption in Indonesia soared—reaching 62.84% in 2020—and continued to increase in subsequent years (Rahmah et al., 2024). The surge in digital interaction extended to religious activities, including Qur'an education. Digital platforms such as WhatsApp, Facebook, YouTube, and Instagram became popular tools for both communication and entertainment (Triantoro et al., 2021). Social media also opened new possibilities for da'wah and Qur'anic learning, enabling religious content to reach wider audiences (Akmaliah, 2022). This shift gave rise to a transformation in the locus and mode of religious authority.

This transformation has challenged the traditional structures of religious knowledge transmission. The direct relationship between *ustaz* and *santri* is increasingly replaced by digital tools—especially those powered by artificial intelligence (AI). For Generation Z, who are highly reliant on gadgets and prefer flexible modes of learning, this transition is not only acceptable but often preferred (Hastani, 2023). E-learning, blended learning, and online learning are increasingly popular in Qur'anic education. Consequently, a number of Qur'an-related applications have emerged, which can be grouped into three categories: (1) digital Qur'an readers such as Qur'an Kemenag (Althaf Husein, 2020), Al-Qur'an Free (Istiqomah, 2022), and Learn Qur'an Tafsir (Istiqomah et al., 2021); (2) Qur'an search engine tools like Lafzi and Alfanous and (3) AI-powered Qur'anic learning applications such as Qara'a.

ISSN 2715-9701 (online)

Among these, Qara'a stands out for its use of AI to simulate the *talaqqī* system. The application enables users to hear correct recitations of *hijaiyyah* letters and verses, imitate them, record their voices, and receive automated assessments. If the reading is deemed accurate, the system unlocks the next lesson; otherwise, the user must repeat the material. With over 1.8 million users and unique machine-assessment features, Qara'a represents a significant technological intervention in Islamic pedagogy.

Research on Qur'anic learning in the digital age has developed into at least three notable strands. First, several studies have focused on the implementation of the Qara'a application in educational settings. For instance, its use has been documented in TPQ Al-Hidayah, Surabaya (Najaf, 2024) and MTs Mardhatillah, Bali (Najati, 2023). Further research—though not site-specific—has explored its effectiveness in improving reading skills (Rezeky, 2024) and enhancing literacy through AI-based tools (Safitri, 2025). While these studies affirm the application's technical and pedagogical utility, they tend to focus on learning outcomes without critically engaging with changes in pedagogical structure or religious authority.

Second, a body of research examines issues of isnad (Qur'anic chain of transmission) within traditional and contemporary Islamic learning institutions. Tuju et al. (2023) investigate *sanad qira'at* validity in Indonesian *rumah tahfidz*, while Hanief (2023) maps out the *sanad* chains and pedagogical methods used in Banjarmasin. Abdul Majid Miski (2023), in particular, has analyzed the digital shift in Qur'anic transmission and emergence of new religious authorities. Although insightful, these studies do not explore how AI explicitly transforms *talaqqī* pedagogy or how automated assessments function as substitutes for human religious verification.

Third, there is emerging scholarship on the transformation of religious authority in digital environments**,** particularly through mediatization and AI technologies. Akmaliah (2022) examines how religious actors utilize social media to expand their influence. Adel and Numan (2023) highlight how technological acceleration during COVID-19 has catalyzed shifts in spiritual practice and authority. Yet, these studies generally emphasize broad sociological patterns rather than the micro-level pedagogical processes that are reshaped by AI-driven applications like *Qara'a*.

Despite these contributions, a gap remains: there has been no in-depth analysis of how the *talaqqī* system is structurally and pedagogically transformed in AI-based environments. The automatic assessment system in *Qara'a*—a key innovation—has not been scrutinized in relation to its implications for religious authority, *sanad* continuity, and pedagogical validity.

This study aims to examine the structural and pedagogical transformation of the *talaqqī* system in the context of digital Qur'anic learning, with a particular focus on the Qara'a application. Specifically, the research seeks to investigate *talaqqī* as a classical oral transmission model in Qur'anic education, explore its practical implementation within institutional settings such as Taman Pendidikan Al-Qur'an (TPQ), analyze how the Qara'a app digitalizes the traditional *talaqqī* method through artificial intelligence, and evaluate the accuracy and implications of its automated recitation assessment system. By addressing these four dimensions, the study seeks to fill a critical gap in current literature by offering new insights into how technological mediation reshapes Qur'anic pedagogy, religious authority, and the epistemic validation of sacred knowledge in the digital age.

This research argues that AI-based applications like Qara'a not only digitize the Qur'anic learning process but also reconfigure its epistemological foundation. By replacing human *ustazs* with machine-led instruction and assessment, the application shifts the logic of authority—from an oral, interpersonal *sanad*-based tradition to a system governed by algorithmic rules and automated validation. This shift represents a form of religious mediamorphosis wherein digital tools become new sites of spiritual

ISSN 2715-9701 (online)

transmission and legitimacy. Thus, the study hypothesizes that AI does not merely assist in Qur'anic education, but constitutes a new epistemic agent, reshaping how sacred knowledge is taught, verified, and valued.

RESEARCH METHOD

The unit of analysis in this research is the Qara'a application as a digital artifact representing the transformation of the traditional *talaqqī* system in Qur'anic learning. This application is analyzed not only as a technological tool but also as a pedagogical space in which religious authority, oral transmission, and assessment are digitally reconstructed. The study focuses on the features, learning stages, recitation feedback mechanisms, and progression systems that shape user engagement with the app as a substitute for the classical *ustaz-santri* relationship.

This research employs a qualitative descriptive design using a digital observation approach. The qualitative method is chosen because it allows for in-depth exploration of subjective meanings, symbolic processes, and pedagogical structures that cannot be captured through quantitative approaches (Moleong, 2017). As the object of study is a digital platform that reconfigures religious learning, qualitative inquiry enables the researcher to engage interpretively with the interface, content flow, and evaluation system. This design also aligns with Syahrir's (2022) view that qualitative research demands the researcher's direct involvement and interpretive competence when interacting with the research object.

The sources of data in this study consist of both primary and secondary materials. The primary data are obtained through structured digital observation by the researcher who directly engaged with the Qara'a application. This includes observing navigation flows, AI recitation feedback, and user progression systems. Secondary data are drawn from scholarly literature such as journal articles, theses, and academic books that discuss the *talaqqī* method, Qur'anic learning, and the use of artificial intelligence in religious education. These texts help contextualize and support the interpretation of the application's design and impact.

Data collection was conducted through immersive digital observation (Hine, 2020). The researcher navigated through the Qara'a application in a structured manner, systematically documenting key features, feedback prompts, interface designs, and assessment mechanisms. Screenshots and field notes were used to capture both visual and functional aspects of the application. This process simulated the learning journey of a typical user in order to understand the pedagogical structure and the sequencing logic enforced by the AI system.

The data analysis followed a thematic approach, involving five main stages: data reduction, categorization, presentation, interpretation, and conclusion drawing. In the reduction stage, significant information from the application and supporting literature was selected and summarized to focus on themes relevant to the transformation of *talaqqī*. These data were then categorized and presented according to the research focus areas, such as the redefinition of religious authority, the rigidity of algorithmic assessment, and the pedagogical flow of Qur'anic recitation. Interpretation was carried out by identifying patterns of transformation in comparison to traditional learning models, culminating in conclusions about how the Qara'a application reshapes Qur'anic pedagogy in the digital age.

RESULTS AND DISCUSSION

ISSN 2715-9701 (online)

Talaqqī as a Traditional System in Learning Qur'an

The *talaqqī* system, linguistically, comprises two components: "system," which refers to a method commonly employed in teaching, and "*talaqqī*," which derives from the Arabic root *talaqqa–yatalaqqa–talaqqīyan*, originating from the verb *laqiya–yalqa–liqā'an*, meaning "to meet," "to face," "to receive," or "to take" (Ahmad & Ali, 1999). In terminological usage, *talaqqī* refers to the system first implemented by the angel Jibril (AS) when he delivered the initial revelation to the Prophet Muhammad in the Cave of Hira. Several Qur'anic verses support this system, including Q.S. An-Najm (53):5, An-Naml (27):6, and al-Qiyamah (75):16–19. The first two verses demonstrate that the Prophet employed the *talaqqī* method in the earliest stages of revelation, as facilitated by the angel Jibril. The third verse illustrates how Allah instructed the Prophet not to hasten with his lips while reciting the Qur'an before Jibril completed the transmission—emphasizing the importance of attentive listening before imitation. This interaction reflects the core mechanics of *talaqqī*, where the learner (*santrī*) listens intently to the teacher's (*ustaz's*) recitation and then imitates it.

In practice, *talaqqī* serves as a method of Qur'anic instruction in which the teacher provides direct, oral guidance to students, transmitting recitation skills from one generation to the next in an unbroken chain. In this way, each student's learning connects through an unbroken *sanad* (chain of transmission) back to the Prophet Muhammad (Al-Hafidz, 2012). As a deeply rooted tradition within Islamic scholarship, *talaqqī* functions not only as an instructional method but also as a means of preserving Islamic culture—particularly the sacred discipline of Qur'anic recitation ('Azah et al., 2024). Essential elements in the *talaqqī* process include, first, the presence of an ustaz who has memorized or is proficient in Qur'anic recitation; second, the participation of the santri; third, the active engagement between ustaz and santri during the learning session. The ustaz leads the session by reciting aloud and allowing the santri to listen, mimic, and internalize the recitation, including the correct pronunciation of *hijaiyyah* letters, articulation (*makhraj*), and application of proper *waqaf* and *ibtida'*.

Qawi (2017) outlines the procedural stages of *talaqqī* as follows: the ustaz begins by calling each santri to recite in turn; each santri then reads or recites their memorized portion of the Qur'an in front of the *ustaz*. The *ustaz* listens closely and provides immediate correction whenever necessary. Next, the *ustaz* models proper pronunciation and application of *tajwid* rules, particularly the elongation and shortening of sounds. The santri then repeats the verse following the ustaz's model. Finally, the *ustaz* explains the relevant *tajwid* principles and offers further examples to reinforce accurate pronunciation and adherence to Qur'anic recitation laws.

The previous explanation confirms that *talaqqī* involves direct interaction between the *ustaz* and *santri* as a traditional method of Qur'anic instruction. The provision of oral modeling and immediate correction by the *ustaz* plays a central role in ensuring the precision of Qur'anic recitation. In the traditional *talaqqī* system, face-to-face meetings create a pedagogical space that enables teachers to detect and correct errors in pronunciation, *tajwid*, and rhythm. Several consistent features emerge from this tradition: (1) direct verbal exchange between teacher and student, (2) transmission of knowledge through an unbroken *sanad* (chain of narration), (3) emphasis on *tajwid* accuracy and precision, and (4) the *ustaz's* active role as both evaluator and spiritual guide. The *talaqqī* tradition thus highlights the importance of physical presence, affective connection, and personal authority in Qur'anic learning. However, transitioning this system into a digital environment presents unique challenges. The absence of physical meetings, coupled with the psychological differences between human teachers and machine-led assessment systems, raises critical questions about the accuracy and validity of students' recitation when evaluated through artificial intelligence.

ISSN 2715-9701 (online)

In simpler terms, the *talaqqī* method relies on the teacher's direct involvement in every step of the recitation process. The *ustaz* does not merely listen but actively corrects, models proper pronunciation, and guides the *santri* through the nuances of *tajwid*. This one-on-one oral transmission system ensures that students internalize both the sound and the spiritual discipline of reciting the Qur'an. When this system is transferred to a digital platform, the human element is largely removed, and students interact with a machine instead of a teacher. As a result, the depth of correction, empathy, and personal mentorship becomes harder to replicate.

Several patterns emerge from this shift. First, the absence of human feedback weakens the affective dimension of the learning process, which traditionally fosters motivation and respect. Second, machine-based assessment focuses strictly on measurable aspects, such as *makhraj* (pronunciation points), while overlooking contextual factors like emotional readiness or vocal clarity. Third, the fixed scoring system lacks the flexibility to accommodate learning differences among students. Fourth, students no longer receive layered, holistic feedback that includes ethical, emotional, and technical dimensions. These changes suggest that while digital tools offer convenience and standardization, they reduce the depth and dynamism that define traditional Qur'anic pedagogy.

Talaqqī in the Institutional Setting of TPQ

The *talaqqī* system practiced in Indonesia is institutionalized through *Taman Pendidikan Al-Qur'an* (TPQ), or Qur'anic Education Centers. Government Regulation No. 55 of 2007, Article 24, Paragraph 2, on Religious Education stipulates that Qur'anic education includes *Taman Kanak-kanak Al-Qur'an* (TKA/TKQ), *Taman Pendidikan Al-Qur'an* (TPQ), *Ta'līmul Qur'ān lil Aulād* (TQA), and other similar forms (Malik, 2013). Within TPQs, the *talaqqī* system has developed through structured learning steps that correspond with the curricula used by each institution. Several TPQs implement curricula designed and standardized by specific Qur'an learning method institutions, such as *Qira'ati*, *Iqra*, and *Ummi*. These methods each come with their own curriculum and instructional books covering material from *hijaiyyah* letters and *tajwīd* rules to full reading proficiency. Many also include supplementary content, such as daily prayers and supplications.

Several examples illustrate how the *talaqqī* system is applied in TPQ settings. At TPQ Al-Khusna Pasadena in Semarang, which adopts the *Yanbu'a* method, the classical learning flow includes reciting an opening prayer together, preceded by *hadlarah* led by the class *ustaz*, collective reading of the *Yanbu'a* text page by page, individual recitations by each *santri*, assigned tasks for others, delivery of additional material when time permits, and concluding with a closing prayer. During individual sessions, *santris* begin by reciting *ta'awwudh* and *bismillāh* with direct guidance from the *ustaz*. Each santri reads two columns—the first containing core content and the second containing supplemental content such as numbers or pegon script. When a santri makes an error, especially regarding makhārij al-ḥurūf, and repeats it three times, the ustaz marks it with a ؞, explains the mistake, records it in the santri's achievement book, and provides correction. The sequence continues until the *santri* completes the assigned reading, repeats sections if necessary, reviews memorized content, and finally takes a proficiency test (Malik, 2013).

At TPQ Talia in Kendari, the learning structure follows a similar pedagogical rhythm. First, *santris* arrive according to schedule. Second, the *ustaz* enters and appoints a *santri* to lead the opening prayer. Third, *santris* take turns sitting in front of the *ustaz* and mimic his pronunciation in continuous repetition. Fourth, while waiting, some *santris* observe attentively while others do not. Fifth, the *ustaz* provides individual guidance and models the recitation until the *santris* attain fluency. Sixth, fluent *santris* are tasked with mentoring their peers who are not yet proficient. Seventh, after the Qur'an reading session concludes,

ISSN 2715-9701 (online)

the *ustaz* recites short *sūrahs* and daily supplications, followed in unison by the *santris*. Eighth, before dismissing the class, the *ustaz* offers brief moral advice for about five minutes and selects a *santri* to lead the closing prayer. Ninth, the session ends with each *santri* shaking hands with the *ustaz* in turn (Aliwar, 2016).

The final example comes from TPQ BMQ At-Tartil in Gedangan, Sidoarjo, which utilizes the *Tartīl* method. The instructional flow is clearly structured around daily thematic content. On Mondays, for instance, elementary-level classes engage in 60 minutes of *At-Tartīl* learning followed by 30 minutes of memorizing daily supplications. The *Marḥalah* class devotes 60 minutes to *tadārrus* (collective recitation) of the Qur'an, followed by 30 minutes of memorizing *asmā' al-ḥusnā* and *ṣalāh* rituals. On subsequent days, instruction continues with focused Qur'an recitation through the *Tartīl* method and enrichment in subjects such as *'aqīdah akhlāq*, Qur'anic exegesis (*tafsīr*), Arabic language, and *fiqh* (Jannah, 2021).

Table 1. Comparasion of learning Process in TPQ

No	Name of TPQ	Learning Processes	Method	Assessments Across
1	TPQ Al-Khusna Semarang	- Opening prayer - Santri read their *yanbu'a* book - *Santri* read two columns	*Yanbu'a*	- *Santris* in reading there are errors (especially *makhorij al-huruf*) three times must be assessed (ج) - *Ustaz* show the errors - *Ustaz* write them in the *santri's* achievement book - *Ustaz* correct them.
2	TPQ Talia Kendari	- Opening Prayer - *Ustaz* give the example of reading Qur'an - *Santri* follow the *ustaz* reading - *Ustaz* lead the *santri* until fluent	*Iqra'*	- *Ustaz* and *santri* who are already fluent can guide another *santri* who are not yet fluent
3	TPQ BMQ at-Tartil Sidoarjo	- *Santri* learn the *tartil* books or read al-Qur'an - *Santri* get enrichment material such as memorizing prayer, *Aqidah akhlak, Arabic*, etc.	*Tartil*	- *Ustaz* must has *syahadah at-tartil* - Students who have completed volume 6 and will move up to the *marhalah* al-Qur'an, must pass the *munaqosyah* test - .

The table 1 illustrates that each Taman Pendidikan Al-Qur'an (TPQ) implements a different instructional method. Some utilize the *Yanbu'a*, *Iqra'*, or *Tartīl* methods. While all methods incorporate assessment systems and progression tests, the procedures and levels of rigor vary. For example, in the

ISSN 2715-9701 (online)

Yanbu'a method, if a student makes three errors, the *ustaz* records them immediately in the student's achievement book. Despite differences in methodology, the learning processes across the three TPQs share notable similarities. Each institution schedules structured meetings between *ustazs* and *santris*, during which the *ustaz* can freely model Qur'anic recitation and provide real-time correction of the students' reading.

TPQs categorize students based on volume levels. Those at the advanced stage—already reading the full Qur'an—are no longer included in the classical Volumes 1 through 6. Each volume contains additional materials aligned with the curriculum adopted by the respective method. Qur'anic reading methods such as *Iqra'*, *Yanbu'a*, *Tartīl*, and *Qirā'ati* have distinct curricula. At every level, an *ustaz* listens to each student individually and provides detailed correction. Students take turns reading their assigned texts directly in front of the *ustaz*. This one-on-one pedagogical interaction between *ustaz* and *santri* remains central in all TPQs. Ultimately, TPQs serve as vital spaces for preserving the *talaqqī* system—allowing for methodological flexibility while maintaining the essential relational framework between teacher and learner.

Digitalization of *Talaqqī* in Qara'a App

According to the information provided on the application's initial download page, the Qara'a application introduces a new approach designed to facilitate Qur'anic learning—from beginner level to proficiency—in a short period. The application employs Artificial Intelligence (AI) technology to offer users an interactive and personalized learning experience. Users may also access private sessions with an *ustaz* to receive direct guidance, thereby enhancing the effectiveness and quality of their learning outcomes. Additionally, Qara'a features more than 20 core functions, including *Qur'an* reading, *tafsīr*, *asbāb al-nuzūl*, *sīrah nabawiyyah*, *ḥadīth*, prayer schedules, and the call to prayer (*adhān*)—which can be customized using various *mu'adhdhin* voice options.

As of version 5.1.23, last updated on March 28, 2025, the application has been downloaded by over one million users. It requires Android OS 7.0 or higher to run the latest version. In-app purchases range from Rp. 50,000 to Rp. 649,000 per item. The app was developed by PT Kreasi Putra Hotama and officially released on October 18, 2018 (Qara'a, 2025).

Qara'a organizes its learning system into three primary components: material-based lessons, *murājaʿah* (review), and *tasmīʿ* (verse delivery and memorization). The app applies a sequential learning path that *santris* must follow step by step. If a *santri* fails to complete or pass a given module, the next stage remains locked until the required level is achieved. The instructional sequence begins with the *Hijā'iyyah* chapter for beginners, which includes 40 lessons beginning with introductory content and progressing through the letters from *alif* to *yā'*. Each level typically groups 2 to 4 letters. For instance, one group includes *alif*, *bā'*, *tā'*, and *thā'*; another includes *jīm*, *ḥā'*, and *khā'*; while another set contains *sīn* and *shin* (Qara'a, 2025). This tiered material structure can be seen in Figure 1, which shows a list of Hijaiyyah lessons from the introductory stage to letter combinations, with a locking mechanism to maintain learning progressivity.

ISSN 2715-9701 (online)

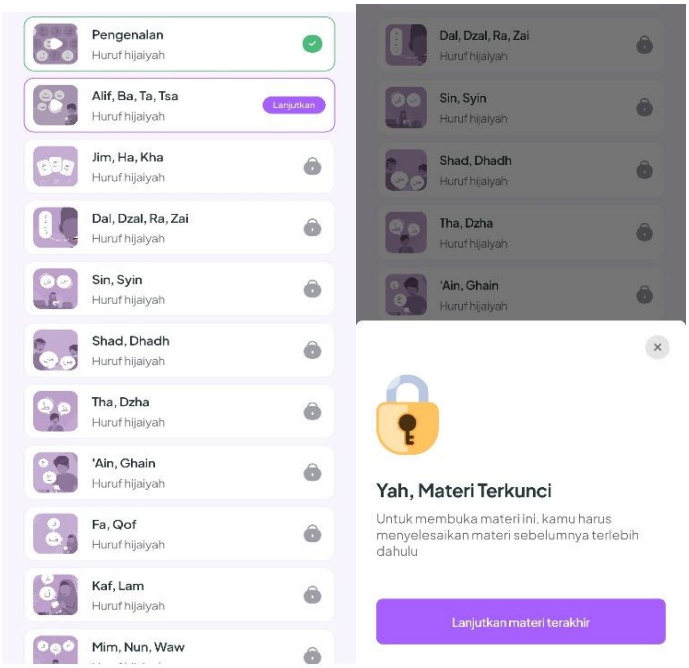

Figure 1. Details of the Material in the Qara'a App

Figure 1 shows details of the *Hijaiyyah* letter material in the Qara'a application, which is arranged in stages from introduction to letter combinations. It can be seen that each material is locked so that users can only open the next lesson after completing the previous material. This locking mechanism demonstrates a tiered learning system that requires students to achieve minimum standards at each stage, in accordance with the algorithmic logic applied by the application.

The learning process for *Hijā'iyyah* letters in the Qara'a application begins with writing exercises. These writing lessons require *santris* to practice writing *Hijā'iyyah* characters, starting with individual letters and progressing to combinations of two to four letters, depending on the grouping level. The application also includes matching activities, in which learners must pair *Hijā'iyyah* letters with their corresponding Latin transliterations. In addition to basic recognition tasks, the app presents analytical questions—such as identifying letters that have two dots above—to enhance cognitive engagement and reinforce pattern recognition. The pattern of writing letters and examples of analytical questions can be seen in Figure 2, which shows exercises in writing the letter alif and questions identifying letters with dots above them.

Figure 2 shows the pattern of writing Hijaiyyah letters in the Qara'a application, specifically the letter *alif* and analytical exercises to recognize letters with dots above them. The results of the observation show that the application not only emphasizes motor skills through letter writing but also trains users' cognition through letter identification and matching questions. This approach confirms that the Qara'a learning system is gradual and layered, where visual, motor, and analytical aspects are combined to strengthen the mastery of basic Hijaiyyah letters before users proceed to the next stage.

ISSN 2715-9701 (online)

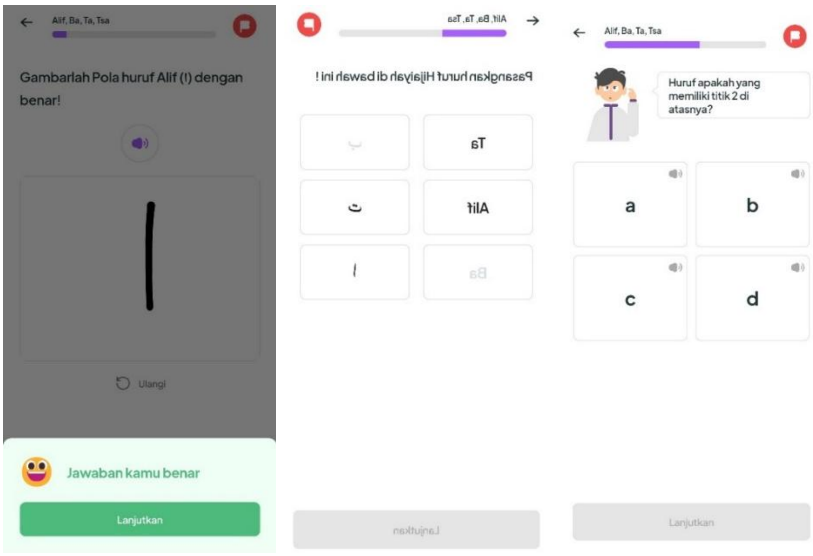

Figure 2. Pattern of *Hijaiyyah* Letter Writing Material

The next stage in the Qara'a application focuses on reading through audio exercises. Utilizing artificial intelligence (AI), the application provides an audio model of Hijā'iyyah letter pronunciation, beginning with alif. After hearing the example—referred to in the application as the ustaz's voice—santris are instructed to imitate the pronunciation. To do so, they press a designated button and record their voice within a specified time frame. The AI system then processes the recorded audio and evaluates its accuracy by assigning a score in the form of one to five stars. Based on the researcher's observation, if the pronunciation is incorrect, the system does not assign any stars. A score of two stars indicates an adequate attempt, three stars represent a good attempt, and five stars denote excellent pronunciation. If a santri receives no stars, the application allows them to replay the ustaz's example and retry until they earn at least one star. Upon meeting the minimum scoring requirement, the santri can then proceed to the next lesson, as illustrated in Figure 3.

Figure 3 shows the audio-based assessment system in the Qara'a application, which displays immediate evaluation responses to students' pronunciation results. Observations show that the application provides assessment categories ranging from *incorrect* to *very good* with a range of one to five stars. This mechanism shows how artificial intelligence acts as a substitute for teachers in providing instant feedback on the pronunciation of Hijaiyyah letters. However, the findings show that although this system is effective in providing objective standards, it tends to be rigid and does not consider non-technical aspects such as voice clarity, psychological conditions, or environmental disturbances during the recording process.

ISSN 2715-9701 (online)

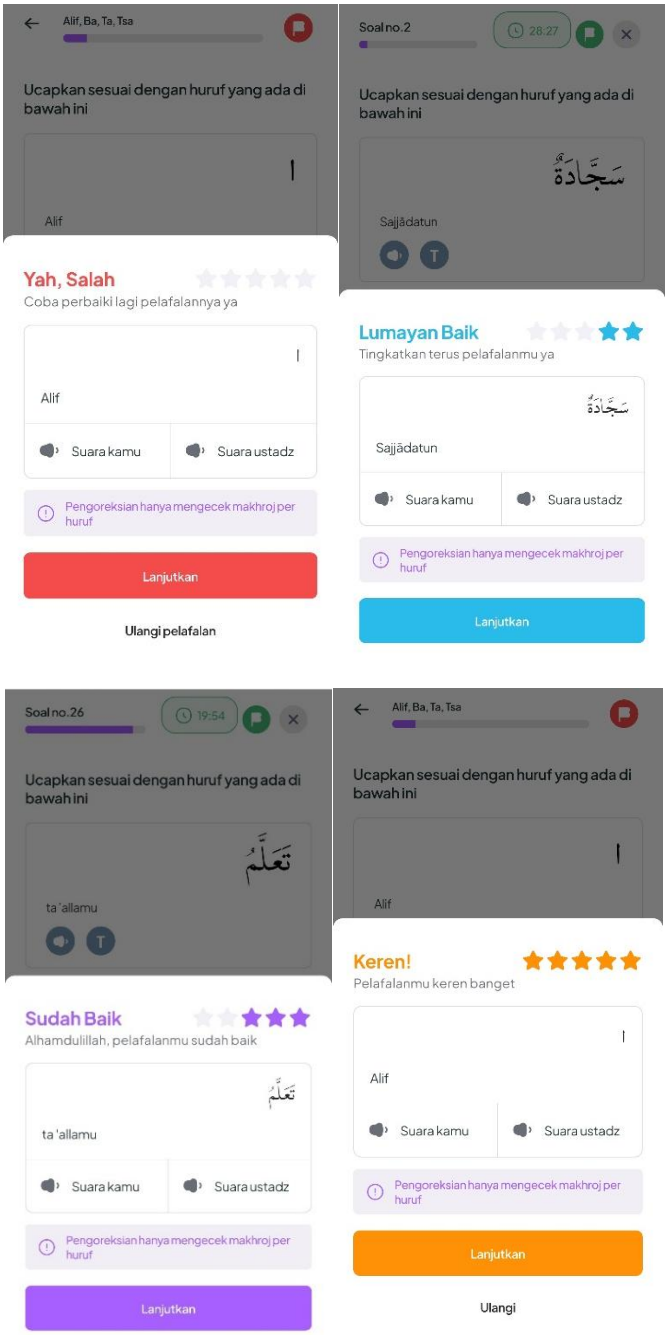

Figure 3. Audio Assessment of *Hijaiyyah* letter pronunciation

Another lesson in the Qara'a application is the combination of writing and reading, which requires learners to choose the appropriate text according to the audio, match the audio to the text, and arrange words based on the given sound. This integrated pattern of exercises can be seen in Figure 4, where santris are trained to connect visual symbols of hijaiyyah letters with their corresponding sounds in order to strengthen both recognition and pronunciation skills simultaneously.

ISSN 2715-9701 (online)

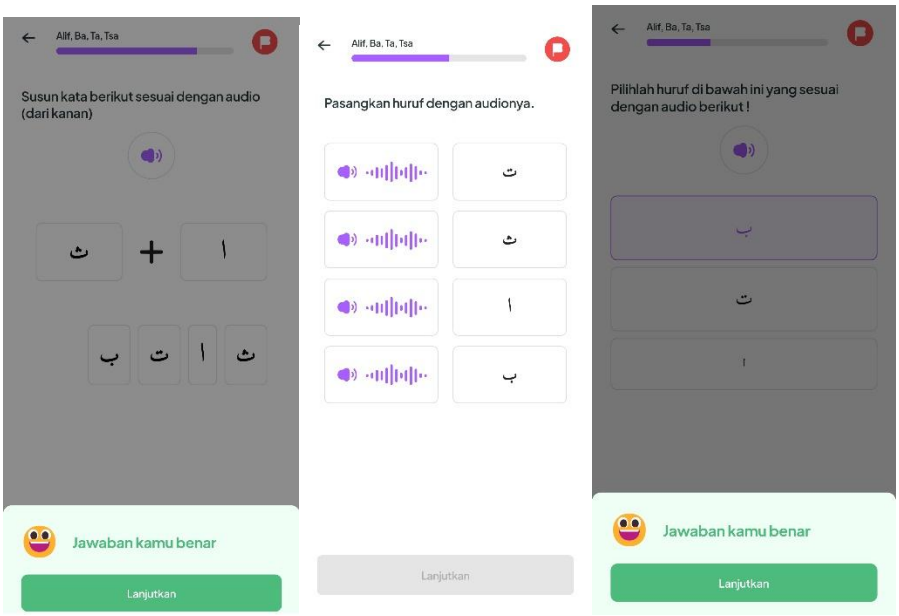

Figure 4. Mixed Material Pattern of Writing and Reading *Hijaiyyah* Letters

Figure 4 shows the combined exercise pattern of writing and reading Hijaiyyah letters in the Qara'a application. The results of the observation indicate that users are not only asked to recognize the shape of the letters, but also to match the sounds with the text and arrange the words according to the audio instructions. This approach demonstrates a multimodal learning strategy, in which visual, auditory, and cognitive skills are trained simultaneously. Although this method is effective in strengthening the connection between writing and sound, the study also found that dependence on the audio system makes learning outcomes susceptible to the quality of the device and the user's environment.

After completing the *Hijā'iyyah* letters, the Qara'a application introduces learners to *ḥarakāt* (punctuation marks), beginning with *fatḥah*, *fatḥatayn*, *kasrah*, *kasratayn*, *ḍammah*, *ḍammahtayn*, *sukūn*, and *tashdīd*. The final section of the *Hijā'iyyah* chapter includes material on introductory concepts, letters that can connect, those that cannot, and supportive elements. This chapter belongs to the beginner level. At the end of each level, *santris* must complete a chapter test to determine whether they may advance. The minimum passing score is 80 out of 100, based on 30 questions.

The next stage of the learning path is the intermediate level, which focuses on *taḥsīn*. This section contains 30 lessons centered on *makhārij al-ḥurūf* (points of articulation) and *ṣifāt al-ḥurūf* (characteristics of the letters). The *makhārij al-ḥurūf* lessons begin with an introduction, followed by units on *al-ḥalq*, *al-jauf*, *al-lisān*, *ash-shafatayn*, and *al-khayashīm*. The *ṣifāt al-ḥurūf* section also begins with an introduction and then distinguishes between letters that have opposites and those that do not. As with the previous level, learners must pass an assessment with a minimum score of 80 to proceed.

At the advanced level, learners study *tajwīd* recitation material, comprising 51 lessons divided into several major topics, including *nūn sākinah* and *tanwīn*, *mīm sākinah*, *ghunnah*, *madd*, *ṣifr*, *lām*, *rā'*, *tā' marbūṭah*, and other advanced topics. The *nūn sākinah* and *tanwīn* material covers *iẓhār*, *idghām bi ghunnah*, *idghām bilā ghunnah*, *iqlāb*, and *ikhfā'*. The *mīm sākinah* section includes *ikhfā' shafawī*, *iẓhār shafawī*, and *idghām mithlayn*. The *madd* section introduces learners to various types such as *madd ṭabīʿī*, *madd wājib muttaṣil*, *madd jā'iz munfaṣil*, *madd lāzim muṭaqal kalimī*, *madd lāzim mukhaffaf kalimī*, *madd lāzim ḥarfī muṭaqal*, *madd ʿiwaḍ*, *madd ʿāriḍ liʾs-sukūn*, *madd layyīn*, *madd ṣilah qaṣīrah*, *madd ṣilah ṭawīlah*,

ISSN 2715-9701 (online)

madd badal, *madd tamkīn*, and *madd farqī*. Lessons on *ṣifr* include *mustazhir* and *mustathīl*. The *lām* section covers *lam jalālah* and *lam tarqīq*, while the *rā'* section teaches *tafkhīm* and *tarqīq*. In *tā' marbūṭah*, learners study *waṣl* and *waqf* applications. Additional advanced materials include *qalqalah*, *waqf* signs, *imālah*, *ishmām*, *naql*, *tashīl*, *saktah*, *ibdāl*, *nūn waṣl*, *alif maqṣūrah*, and *wāw fāriqah*.

After completing the material-based lessons, *santris* must pass the *Tajwīd 2* chapter exam before advancing. Once they complete this stage, they can proceed to the *murājaʿah* (revision) and verse submission stages. However, this study does not delve further into the Qur'an memorization features included in the Qara'a application.

Accuracy of Quran Reading Value Measurement in the Qara'a Application

Qara'a transforms the *talaqqī* system into an automated guidance model using artificial intelligence (AI) to assess and support users' Qur'an recitation. The application features a structured assessment and examination system, which determines whether a *santri* qualifies for advancement to the next level. AI plays a central role in this process, especially considering that *ustaz* and *santris* do not engage in direct, face-to-face interaction. Although the application claims to offer private sessions with an *ustaz* for more optimal results, the researcher did not test this feature and, therefore, cannot analyze its implementation. If these private sessions imply that an *ustaz* can provide direct feedback through video conferencing platforms such as Zoom, Google Meet, or Skype, the researcher found no such feature available during the use of Qara'a.

Accordingly, the researcher relied on previously discussed data regarding the application's assessment mechanism for Qur'anic reading. In the writing lessons, the AI immediately evaluates the correctness of a *santri*'s answer, similar to how multiple-choice questions are graded. The most notable aspect of the evaluation system lies in the pronunciation or audio-based lessons. In these lessons, AI significantly contributes by assessing the recitation accuracy of *santris*. After hearing the sample recitation from the *ustaz*'s voice, *santris* press a button to record their pronunciation within a given timeframe. The system then analyzes the compatibility between the user's recording and the model recitation. This process depends on various factors, such as the difficulty level of the material, voice clarity, and network stability.

Based on the researcher's experience, prolonged use of the application may lead to system errors, preventing the evaluation results from being displayed. Additionally, when audio clarity is compromised, even accurate pronunciations may be judged as incorrect. The application's assessment criteria, as stated in the evaluation section, focus solely on verifying the *makhraj* (articulation point) of each letter and fail to consider psychological factors or technical challenges, such as device performance and network quality. This is in stark contrast to the corrections provided by an *ustaz* in face-to-face *talaqqī*, where assessments are made by observing a *santri*'s psychological readiness and contextual challenges. The time allocation in traditional *talaqqī* is also more flexible, depending on class size and session frequency. Nonetheless, individual *ustaz* and institutions typically set proficiency targets to ensure that no *santri* is left behind in their learning progression.

One user, Fikri Achmad Fauzi, expressed appreciation for the application but also provided constructive feedback, suggesting that the interface should be made less rigid. He also noted that background noise during microphone use often interferes with the app's ability to accurately detect and evaluate recitations, as shown in Figure 5

ISSN 2715-9701 (online)

Figure 5. Comment from user

Figure 5 shows user reviews of the Qara'a app, highlighting positive aspects such as interactive gamification and learning flexibility, but also providing critical feedback on the interface design, which is considered rigid, and the system's limitations in detecting sound when there is noise interference. These reviews reinforce the research findings that although the application provides easy access and consistent evaluation standards, it still faces technical limitations that affect the accuracy of reading assessments. This user perspective provides additional data that confirms the gap between AI-based learning experiences and traditional talaqqī learning, which is more adaptive and empathetic.

The learning model for reading the Qur'an through the Qara'a application offers users a high degree of flexibility, especially in terms of managing their own time. The application operates 24 hours a day, allowing users to progress through the material at their own pace and potentially complete lessons more quickly. However, this flexibility may be limited by the rigid assessment mechanism required to unlock subsequent lessons. The AI system follows a fixed template, compelling users to repeat lessons until they meet the predefined standards. It does not accommodate factors outside the programmed evaluation criteria. The application assesses the accuracy of a *santri*'s recitation using a five-star rating system, with each rating representing a specific performance tier.

This evaluation model presents a fundamental challenge in the transformation of the *talaqqī* system. Traditionally, *talaqqī* required *ustazs* and *santris* to engage in shared physical space, enabling *ustazs* to offer immediate corrections and nuanced feedback tailored to each *santri*'s psychological and emotional state. In contrast, Qara'a digitizes this process by introducing artificial intelligence as the

ISSN 2715-9701 (online)

evaluator, replacing human judgment with algorithmic standardization. While Qara'a successfully increases accessibility and efficiency, it simultaneously sacrifices the personalization, affective interaction, and pedagogical depth that define the classical *talaqqī* experience. The comparison between traditional and digital *talaqqī* systems is summarized in Table 2, which highlights differences in time allocation, spatial flexibility, and assessment methods.

Table 2. Comparasion Sistem Traditional Talaqqī and Digital *Talaqqī*

No.	Type	Time	Distance	Place	Assessment Method
1	Traditional *Talaqqī*	– Scheduled by the institution – One *ustaz* models, listens, and corrects within limited time	– Local – Students usually choose a nearby location	Mosque, *TPQ*, or *ustaz*/student's home	– Standards set by each institution – *Ustaz* assesses based on multiple dimensions
2	Digital *Talaqqī*	– Determined by the *santri* – Flexible and self-paced	– No spatial limitation	Flexible / Anywhere	– Scoring performed by AI – Focused on *makhraj* (articulation point) per letter

Table 2 illustrates the fundamental differences between the traditional and digital talaqqī systems. In the traditional model, the learning process is scheduled and carried out through face-to-face interaction in mosques, TPQs, or the ustaz's/student's home, where the ustaz plays an active role in evaluating multiple aspects, including the accuracy of *makhraj* (articulation), the application of *tajwīd* rules, and the student's emotional readiness. In contrast, in the digital talaqqī model based on the Qara'a application, the learning process is flexible and unconstrained by space, with assessment conducted entirely by an AI system. The evaluation focuses solely on the phonetic articulation of letters, leaving out the affective and contextual dimensions that are typically present in human-led instruction.

Based on the observation of Qara'a's audio-based assessment system, it is evident that the application automates the traditional Qur'anic learning process, particularly in evaluating pronunciation accuracy through artificial intelligence. The system instructs users to listen to a model recitation—referred to as the *ustaz*'s voice—record their own recitation, and then receive immediate feedback. This evaluation centers on *makhraj*, the articulation point of each *Hijā'iyyah* letter, and generates a score ranging from one to five stars. However, this automated assessment fails to account for contextual factors such as voice clarity, device and microphone quality, or the user's psychological state during the learning session. The system applies rigid parameters and consistently rejects recitations that fall outside its programmed thresholds, even when the pronunciation might be acceptable in human-led instruction. In contrast to

ISSN 2715-9701 (online)

traditional *talaqqī*, where an *ustaz* may offer individualized, empathetic correction, Qara'a's artificial intelligence delivers feedback impersonally, strictly adhering to algorithmic rules.

From the analysis, four recurring patterns emerge. First, the AI-based assessment operates in a standardized and rigid manner, relying entirely on phonetic precision without accommodating contextual interpretation. Second, while the feedback system provides instant responses, it lacks the affective and pedagogical depth of human instruction. Third, technical limitations—such as microphone sensitivity, background noise, and software stability—frequently influence scoring outcomes, often resulting in incorrect rejection of otherwise accurate recitations. Fourth, the application promotes flexible learning by allowing users to study anytime and at their own pace; however, this flexibility remains constrained by the system's inflexible scoring requirements. Collectively, these patterns represent a paradigmatic shift in Qur'anic recitation pedagogy—from adaptive, relational human assessment to rigid, machine-driven evaluation.

Discussion

This study explored the transformation of the *talaqqī* system from traditional face-to-face Qur'anic learning into a digital model through the Qara'a application. The first finding confirms that *talaqqī* remains actively practiced in TPQ institutions in Indonesia, where santris meet with *ustazs* in person at scheduled times. This model enables personalized correction, direct assessment, and spiritual transmission. The second finding reveals that the Qara'a application restructures *talaqqī* into an automated sequence of learning stages—*hijaiyyah, tahsin*, and *tajwid*—guided by artificial intelligence. The third finding highlights the strengths and limitations of the Qara'a app's assessment system. While the AI offers structured, consistent evaluation based on *makhraj* per letter, it fails to consider psychological, environmental, and contextual factors that are typically addressed in traditional *talaqqī* settings.

The continued relevance of traditional *talaqqī* in TPQs is due to its deeply embedded role in the epistemology of Islamic education. It upholds not only correct pronunciation but also the chain of transmission (*sanad*), teacher-student relationships, and spiritual formation. However, the emergence of Qara'a as an alternative learning tool is driven by demands for flexibility, access, and speed in the digital age. This shift is caused by changes in lifestyle, mobility, and learning preferences—especially among Generation Z—who rely heavily on mobile applications and asynchronous learning formats. Since Qara'a enables learning anytime and anywhere, it provides a practical solution for those unable to commit to fixed schedules or physical attendance, thus answering contemporary learning challenges.

This study builds upon and extends previous research in three key strands of Qur'anic education in the digital era. First, studies such as those by Najaf (2024) and Najati (2023) have shown the practical use of the Qara'a application in formal educational settings like TPQ Al-Hidayah and MTs Mardhatillah, while research by Rezeky (2024) and Safitri (2025) has affirmed its effectiveness in improving literacy and recitation through AI tools. However, these works tend to focus on learning outcomes rather than critically engaging with the structural transformation of pedagogy and religious authority. Second, research by Abubakar et al. (2023) and Hanief (2023) highlights the enduring importance of *sanad* in traditional tahfidz institutions, while Majit and Miski (2023) discusses the emergence of new machine-based authorities through digital platforms. Yet, these studies rarely examine how AI reconfigures the teacher-student relationship and substitutes human verification in *talaqqī*. Third, while scholars like Akmaliah (2022) and Adel and Numan (2023) analyze the broader mediatization of religion and shifts in authority during the pandemic, their focus remains at the macro-sociological level. In contrast, this study contributes a micro-pedagogical perspective that explores how the Qara'a application restructures the dynamics of

ISSN 2715-9701 (online)

Qur'anic instruction by embedding assessment, progression, and authority within algorithmic systems, thus adding a critical layer to the discourse on digital religious education.

Historically, the findings indicate that digitalization through applications such as Qara'a constitutes a continuation of the long-standing evolution of Qur'anic learning methods, which originally relied on traditional approaches such as *takrar* (repetition) and *tasmi'* (listening and evaluation) conducted through direct interaction between *ustazs* and *santris* using physical *mushafs* (Aziz et al., 2019). For centuries, these methods preserved the authenticity of Qur'anic transmission and spiritual values. However, access limitations, geographic distance, and changing social dynamics have increasingly challenged the reach of conventional models to broader Muslim communities (Mujib & Marhamah, 2020). In this context, digitalization—manifested in applications such as TheHafiz, MTT Tahsin, and more recently Qara'a—has emerged in response to contemporary needs by offering automated evaluation features, phonetic training, and interactive modules that promote efficiency and flexibility (Aditia et al., 2024; Supriyadi et al., 2019). The use of digital platforms at the Prophet's Mosque further demonstrates the effectiveness of this approach in providing flexibility and cross-cultural accessibility in Qur'anic education (Zohdi et al., 2024). Nevertheless, digitalization has also raised epistemological tensions: where once oral authority rooted in *sanad* dominated, algorithmic authority—technical and standardized—has now taken its place (Rijal Ali & Isnaini, 2024). The COVID-19 pandemic accelerated this transition, but also made its challenges more visible, from disruptive advertisements to the diminishing sanctity of digital Qur'an applications (Fajrie et al., 2023; Lipina & Shapoval, 2021). Therefore, even though digitalization marks a new phase in the history of Qur'anic education, it demands critical reflection to ensure that values of *adab*, spirituality, and textual authenticity are not eroded by technological efficiency and convenience.

Socially, the Qara'a application reflects a response to shifts in the lifestyle of modern Muslims who increasingly seek flexibility, accessibility, and efficiency in religious learning. Digital technology has created new spaces for more inclusive Qur'anic education, particularly for those without access to local TPQs or who are constrained by time and mobility. Research by Zohdi et al. (2024) demonstrates how digital platforms at the Prophet's Mosque have improved participation and cross-cultural communication in Qur'anic learning. Saiful Ma'arif et al. (2024) further show that digital Qur'anic literacy significantly promotes religious moderation in educational environments. In a transnational context, Sari and Moore (2024) found that Indonesian Muslim families in the United States use digital technologies to build virtual communities for Qur'anic Arabic learning, maintaining religious continuity abroad. However, this shift also alters social dynamics in Islamic education—from dialogical, affective relationships between *ustazs* and *santris* to impersonal interactions between users and automated systems. Whyte (2022) and Khan & Alginahi (2013) emphasize the need for authoritative oversight of digital content to prevent misinformation and the loss of Qur'anic sanctity due to advertising and technical disruptions. On the other hand, innovations such as augmented reality (Maylawati et al., 2021) and voice recognition technology for dyslexic learners (Basahel et al., 2022) demonstrate the vast potential of digital tools to broaden access to Qur'anic education. Thus, Qara'a not only responds to modern lifestyle demands but also becomes a new arena for negotiating traditional and digital forms of authority in the landscape of contemporary religious learning.

Ideologically, this study reveals that religious authority in Islamic education no longer depends solely on the *ustaz* as the bearer of moral and spiritual legitimacy, but is increasingly complemented—and in some cases challenged—by artificial intelligence (AI) as a new epistemic agent in the transmission of religious knowledge. Applications like Qara'a do not merely simplify instruction and accelerate access; they also contribute to redefining authority and validity in Qur'anic learning, where algorithms—not

ISSN 2715-9701 (online)

human interaction—govern assessment and learner progression. This finding aligns with Nirwana et al. (2025), who show that AI significantly enhances cognitive and psychomotor aspects of Islamic education through features such as automatic *tajwid* evaluation and adaptive learning. Nevertheless, AI continues to face limitations in affective domains such as empathy, spirituality, and moral development, which remain central to Islamic pedagogy. While AI provides efficiency and personalization (Abdelgalil, 2025), several scholars raise concerns about algorithmic bias, erosion of teacher autonomy, and sociocultural resistance—particularly regarding the changing role of the *ustaz* (Achruh et al., 2024; Syukur et al., 2024). In this regard, a hybrid approach—integrating AI systems with human educators—offers a strategic solution to bridge the gap between technological efficiency and spiritual depth (Kannike & Fahm, 2025). Supported by collaboration between technologists and religious scholars (Fitryansyah & Fauziah, 2024), this model aims to establish an Islamic educational framework that is ethical, contextual, and rooted in Islamic values. Therefore, the existence of Qara'a symbolizes not only technological adaptation, but also a significant ideological shift in how Muslims conceptualize religious authority and pedagogical legitimacy in the digital age.

Despite their differing formats, both traditional and digital models offer distinct advantages and limitations. Traditional *talaqqī* functions effectively in preserving the authenticity of Qur'anic recitation, providing direct guidance, and accommodating the emotional and psychological needs of learners. However, its reliance on physical presence restricts accessibility and flexibility, particularly for urban and mobile populations. Harroucha and Chaouni (2023) found that the spatial distribution of mosques in the city of Fez forces some residents to travel considerable distances to access places of worship. Similarly, Andreasen and Møller-Jensen (2017) reported that residents in the peripheral settlements of Dar es Salaam face mobility constraints in reaching central areas and religious facilities. For people with disabilities, physical barriers in the built environment also hinder access to mosques and religious services, as highlighted by Palmer Peterson (2021). In contrast, the Qara'a application offers a scalable and efficient learning model that leverages mobile technology—enabling users to access Qur'anic learning anytime and anywhere (Nurul Husna Mat Isa et al., 2023). Platforms like Quranexplorer.com have even improved global visibility and adopted web accessibility principles to ensure that users with various limitations can effectively engage with Qur'anic content (Aljumah, 2015). Nevertheless, many current applications remain technology-centric and have yet to develop deep interactive approaches that foster user engagement and comprehension. Furthermore, Qara'a's AI-based assessment system operates rigidly and fails to account for environmental variability, emotional readiness, and the nuanced nature of oral transmission. The inflexibility of machine-generated feedback and the absence of empathetic interaction constitute key dysfunctions that may undermine long-term user motivation and the overall quality of learning.

Based on the findings regarding access limitations in traditional *talaqqī* and the rigid evaluation system in Qara'a's AI model, this study proposes a hybrid learning framework that systematically integrates the Qara'a application into TPQ curricula. In this model, Qara'a serves as a self-study tool that students can use outside scheduled TPQ hours—for instance, while waiting their turn for *talaqqī* or during personal study at home—thus addressing time and space constraints. To maintain reading accuracy and quality, in-person sessions remain essential as final validation forums where *ustazs* provide direct correction and spiritual guidance. Teachers should also receive digital literacy training to effectively facilitate the use of Qara'a and to anticipate the technical and psychological challenges that students may face when interacting with AI systems. Additionally, a unified assessment guideline is needed to combine digital evaluation results with affective assessments by *ustazs*, ensuring a holistic and human-centered

ISSN 2715-9701 (online)

learning process. Therefore, integrating Qara'a is not merely a technological solution—it represents a pedagogical strategy that bridges digital efficiency with the authenticity of religious tradition.

CONCLUSION

This study demonstrates that the transformation of the *talaqqī* system in Qur'anic education through the Qara'a application responds to the modern Muslim community's need for flexible learning unconstrained by space and time. The primary finding reveals that although Qara'a successfully replicates the stages of *talaqqī*—from the introduction of hijaiyyah letters to advanced *tajwid*—the affective, spiritual, and pedagogical depth inherent in direct interaction between *ustaz* and *santri* remains irreplaceable by artificial intelligence systems. While digital learning addresses challenges of access and efficiency, it has yet to substitute the relational and spiritual authenticity embedded in traditional *talaqqī* practices.

The key contribution of this study lies not only in its assessment of Qara'a's technical effectiveness but also in its critical analysis of the epistemological and ideological shifts brought about by digitalization in Islamic education. This research expands the discourse on digital transformation in religious pedagogy by proposing a hybrid learning model that combines the efficiency of digital tools with the authenticity of classical Islamic pedagogy. Additionally, it offers a policy direction by recommending the integration of digital applications into TPQ curricula, accompanied by digital literacy training for instructors.

Nevertheless, this study is limited in scope as it focuses exclusively on a single application—Qara'a. It does not explore users' perceptions, long-term affective impacts, or comparative analyses of similar applications in other contexts. Therefore, future research should include comparative studies of various digital Qur'anic learning platforms, qualitative investigations into the experiences of *santris* and *ustazs*, and deeper examinations of spirituality in AI-based Qur'anic learning environments.

REFERENCES

'Azah, N., Sholeh, M. I., Tasya, D. A., Munawwarah, M., Abror, S., Mintarsih, M., & Rosyidi, H. (2024). Penguatan Pembelajaran Al-Qur'an melalui Metode Talaqqi di Pondok Pesantren Terpadu Al-Chodidjah. *Al Mu'azarah: Jurnal Pengabdian Kepada Masyarakat*, *2*(1), 1–17. doi: https://doi.org/10.38073/almuazarah.v2i1.1812

Abdelgalil, R. (2025). *The Impact of Artificial Intelligence on the Life of New Muslims in Learning Settings: Challenges and Opportunities*. doi: https://doi.org/10.1007/978-3-031-71526-6_1

Abubakar, A., Ilyas, H., & Rif'ah, M. A. F. (2023). Menyorot Validitas Sanad Qira'at Rumah Tahfidz Di Nusantara. *Jurnal Inovasi Pendidikan*, *1*(1), 745–758.

Achruh, A., Rapi, M., Rusdi, M., & Idris, R. (2024). Challenges and Opportunities of Artificial Intelligence Adoption in Islamic Education in Indonesian Higher Education Institutions. *International Journal of Learning, Teaching and Educational Research*, *23*(11), 423–443. doi: https://doi.org/10.26803/ijlter.23.11.22

Adel, S., & Numan, M. (2023). Online Fatwas in Pakistan Using Social Networking Platforms. *Ulumuna*, *27*(1), 201–226. doi: https://doi.org/10.20414/ujis.v27i1.689

Aditia, M. R., Agitha, N., Wiguna, L. H. S., Rahman, M. K., Mutmainah, A., & Khotimah, H. (2024). *Development of application to memorize the recitation of the Qur'an*. 050026. doi: https://doi.org/10.1063/5.0199730

Ahmad, M. Z., & Ali, A. A. (1999). *Kamus Kontemporer Arab-Indonesia*. Yayasan Ali Maksum.

ISSN 2715-9701 (online)

Akmaliah, W. (2022). RECLAIMING MODERATE ISLAM IN NAHDLATUL ULAMA Challenging the Dominant Religious Authority in Digital Platform. *Journal of Indonesian Islam*, *16*(1), 223–248. doi: https://doi.org/10.15642/JIIS.2022.16.1.223-248

Al-Hafidz, A. W. (2012). *Kamus Ilmu al-Qur'an*. Amzah.

Aliwar. (2016). Baca Tulis Quran dan Manajemen Pengelolaan Organisasi (TPA)Penguatan Model Pembelajaran. *Al-TA'DIB: Jurnal Kajian Ilmu Kependidikan*, *9*(1), 47–55. doi: https://doi.org/10.31332/atdb.v9i1.500

Aljumah, A. (2015). Global Ranking, Web Visibility and Accessibility of Quranic Websites - An Evaluation Study-2015. *Indian Journal of Science and Technology*, *8*(1), 1–7. doi: https://doi.org/10.17485/ijst/2015/v8i30/76715

Althaf Husein. (2020). Al-Qur'an Di Era Gadget: Studi Deskriptif Aplikasi Qur'an Kemenag. *Jurnal Online Studi Al-Qur An*, *16*(1), 55–68. doi: https://doi.org/10.21009/jsq.016.1.04

Andreasen, M. H., & Møller-Jensen, L. (2017). Access to the city: Mobility patterns, transport and accessibility in peripheral settlements of Dar es Salaam. *Journal of Transport Geography*, *62*, 20–29. doi: https://doi.org/10.1016/j.jtrangeo.2017.05.005

Az-Zahra, J., & Zailani, Z. (2024). PERANAN GURU DALAM MENINGKATKAN KEMAMPUAN MEMBACA AL-QUR'AN SISWA DI BAMRUNG ISLAM SCHOOL PHATTALUNG, THAILAND SELATAN. *Atta'dib Jurnal Pendidikan Agama Islam*, *5*(1), 109–124. doi: https://doi.org/10.30863/attadib.v5i1.6359

Aziz, M. M., Abdullah, W. M., Ahmad, A. M., & Shahrudin, M. S. (2019). Comparison between conventional method and modern technology in Al-Qur'an memorization. *International Journal of Recent Technology and Engineering*, *8*(1), 289–294.

Basahel, A. M., Sen, A. A. A., Yamin, M., Bahbouh, N. M., & Basahel, S. (2022). A Smart Flexible Tool to Improve Reading Skill based on M-Learning. *2022 9th International Conference on Computing for Sustainable Global Development (INDIACom)*, 411–414. IEEE. doi: https://doi.org/10.23919/INDIACom54597.2022.9763162

Fajrie, M., Arianto, D. A. N., Surya, Y. W. I., & Aminulloh, A. (2023). Al-Quran Digitalization: Adolescent View on the Value of the Digital Al-Quran Application. *Jurnal Komunikasi: Malaysian Journal of Communication*, *39*(1), 92–106. doi: https://doi.org/10.17576/JKMJC-2023-3901-06

Fitryansyah, M. A., & Fauziah, F. N. (2024). Bridging Traditions and Technology: AI in The Interpretation of Nusantara Religious Manuscripts. *Jurnal Lektur Keagamaan*, *22*(2), 317–346. doi: https://doi.org/10.31291/jlka.v22i2.1247

Hanief, F. (2023). Sanad Pengajar Al-Qur'an di Lembaga Tahfizh Al-Qur'an Kota Banjarmasin dan Sekitarnya (Studi Metode dan Jalur Periwayatan Sanad Al-Qur'an). *Jurnal Ilmiah Ilmu Ushuluddin*, *22*(1), 57–73. doi: https://doi.org/10.18592/jiiu.v22i1.8766

Harroucha, R., & Chaouni, A.-A. (2023). GIS-based approach evaluating sustainable spatio-functional accessibility to mosques. *Annals of GIS*, *29*(3), 429–439. doi: https://doi.org/10.1080/19475683.2023.2192768

Hastani, H. (2023). Metode Pembelajaran Al-Qur'an Berbasis Digital Learning. *Al Ghazali*, *6*(1), 115–131. doi: https://doi.org/10.52484/al_ghazali.v6i1.403

Hine, C. (2020). *Ethnography for the internet: Embedded, embodied and everyday*. Routledge. doi: https://doi.org/https://doi.org/10.4324/9781003085348

Istiqomah, N. (2022). Karakteristik Rasm Dan Sumber Penafsiran Al-Qur'an (Free). *Qof*, *6*(1), 49–66. doi: https://doi.org/10.30762/qof.v6i1.146

Istiqomah, N., Whindari, Y., & Zulaichah, S. (2021). Epistemological Analysis of Private Law Themes in the Learn Qur'an Tafsir Application. *Proceedings of the International Conference on Engineering, Technology and Social Science (ICONETOS 2020)*, *529*(Iconetos 2020), 535–540. doi: https://doi.org/10.2991/assehr.k.210421.079

Jannah, S. (2021). Perkembangan TPQ (Taman Pendidikan Al-Qur'an) di Keboan Sikep Gedangan Sidoarjo Tahun 1990-2015. *AVATARA, e-Journal Pendidikan Sejarah*, *10*(2), 399–405.

ISSN 2715-9701 (online)

Kannike, U. M. M., & Fahm, A. O. (2025). Exploring The Ethical Governance of Artificial Intelligence from An Islamic Ethical Perspective. *Jurnal Fiqh*, *22*(1), 134–161. doi: https://doi.org/10.22452/fiqh.vol22no1.5

Khan, M. K., & Alginahi, Y. M. (2013). The holy Qur'an digitization: Challenges and concerns. *Life Science Journal*, *10*(2), 156–164.

Lipina, T. A., & Shapoval, Y. V. (2021). Religious education in Kazakhstan: The challenges of the COVID-19 pandemic. *Vestnik of Saint Petersburg University. Philosophy and Conflict Studies*, *37*(2), 352–368. doi: https://doi.org/10.21638/spbu17.2021.213

Ma`arif, B. S., Rahmat, M., Suryana, E., & . T. (2024). Al-Quran Literacy on Religious Moderation: Critical Communicative Action Research in IRE Learning in the Digital Era. *Journal of Ecohumanism*, *3*(3), 1408–1426. doi: https://doi.org/10.62754/joe.v3i3.3597

Majit, A., & Miski, M. (2023). Pembelajaran al-Qur'an Secara Digital: Pergeseran Sistem Isnad dan Peneguhan Otoritas Baru. *Jurnal SMART (Studi Masyarakat, Religi, Dan Tradisi)*, *9*(1), 133–146. doi: https://doi.org/10.18784/smart.v9i1.1795

Malik, H. A. (2013). Pemberdayaan Taman Pendidikan Al-Qur'an (TPQ) ALhusna Pasadena Semarang. *Dimas: Jurnal Pemikiran Agama Untuk Pemberdayaan*, *13*(2), 387–404. doi: https://doi.org/10.21580/dms.2013.132.60

Maylawati, D. S., Khotimah, K., Ramdania, D. R., Ali Ramdhani, M., Gerhana, Y. A., Irfan, M., & Anwar, R. (2021). Augmented Reality using Natural Feature Tracking Method to Introduce Science Verses in Qur'an. *2021 7th International Conference on Wireless and Telematics (ICWT)*, 1–5. IEEE. doi: https://doi.org/10.1109/ICWT52862.2021.9678206

Moleong, L. J. (2017). *Metodologi Penelitian Kualitatif*. PT Remaja Rosdakarya.

Mujib, A., & Marhamah, M. (2020). Al-Qur`an Learning Innovation Based on Blended Cooperative e-Learning in School. *Journal of Educational and Social Research*, *10*(4), 47. doi: https://doi.org/10.36941/jesr-2020-0063

Najaf, E. (2024). Sosialisasi penggunaan aplikasi Qara'a sebagai media pembelajaran mengaji online interaktif di TPQ Al-Hidayah Medokan Sawah. *Jurnal Inovasi Pengabdian Masyarakat, 04*(1), 1–9.

Najati, S. (2023). Pembelajaran Al Qur'an Dengan Aplikasi Tajwid Berbasis Android. *Kalangan*, *1*(1), 30–42.

Nirwana AN, A., Rifai, A., Ali, M., Ali Mustofa, T., Nur Vambudi, V., Nur Rochim Maksum, M., & Umar Budihargo, M. (2025). SWOT Analysis of AI Integration in Islamic Education: Cognitive, Affective, and Psychomotor Impacts. *Qubahan Academic Journal*, *5*(1), 476–503. doi: https://doi.org/10.48161/qaj.v5n1a1498

Nurul Husna Mat Isa, Noor Hazirah Abd Aziz, Mariyah Ishak, Wan Azani Mustafa, & Mohd Nizho Abd Rahman. (2023). Quran Mobile Application: A Structured Review. *Journal of Advanced Research in Applied Sciences and Engineering Technology*, *34*(2), 117–132. doi: https://doi.org/10.37934/araset.34.2.117132

Palmer Peterson, H. (2021). Built environment accessibility in the eastern province of the kingdom of Saudi Arabia as seen by persons with disabilities. *Journal of Accessibility and Design for All*, *11*(2), 115–147. doi: https://doi.org/10.17411/jacces.v11i1.294

Qara'a. (2025). Qara'a: Temukan Serunya Belajar Qur'an dengan Qara'a. *Qara'a*. Retrieved from https://alquran.ai/

Qawi, A. (2017). PENINGKATAN PRESTASI BELAJAR HAFALAN SURAT AL HUMAZAH DAN AT TAKATSUR MELALUI METODE TALAQQI PADA SISWA KELAS VIII/3 MTSN GAMPONG TEUNGOH ACEH UTARA. *Jurnal Ilmiah Islam Futura*, *16*(2), 265. doi: https://doi.org/10.22373/jiif.v16i2.1327

Rahmah, P., Hakim, N., Sampurno, M. T., & Abdullah, I. (2024). *DIGITAL SUFISM : THE TRANSFORMATION OF PIETY IN GUS ULIL ' S ONLINE TEACHINGS*. *22*(2), 191–218. doi: https://doi.org/10.47467/Jdi.V2i1.100.4

ISSN 2715-9701 (online)

Rezeky, S. (2024). *Efektivitas Penggunaan Aplikasi Qaraa Terhadap Pembelajaran Al-Quran*. Universitas Islam Negeri Sultan Syarif Kasim Riau.

Rijal Ali, & Isnaini, S. N. (2024). Digitising Interpretation: Transforming Tafsir Al-Mishbah in the Context of the Living Quran. *Jurnal Studi Ilmu-Ilmu Al-Qur'an Dan Hadis*, *25*(1), 1–23. doi: https://doi.org/10.14421/qh.v25i1.5186

Rosyidatul, I., Suhadi, S., & Faturrohman, M. (2021). Peningkatan Hafalan Al-Qur'an Melalui Metode Talaqqi. *Al'Ulum Jurnal Pendidikan Islam*, *1*(2), 83–94. doi: https://doi.org/10.54090/alulum.114

Safitri, M. (2025). Pemanfaatan Aplikasi Belajar Al-Qur'an Qara'a Dilengkapi Teknologi Artificial Intelligence (AI) Meningkatakan Taraf Baca Al-Qur'an. *Manajemen Business Innovation Conference-MBIC*, *8*, 293–311.

Sari, A. P., & Moore, L. C. (2024). Learning Qur'anic Arabic in a virtual village: Family religious language policy in transnational Indonesian Muslim families. *International Journal of Bilingualism*. doi: https://doi.org/10.1177/13670069241256194

Supriyadi, T., Julia, J., Iswara, P. D., & Abdussalam, A. (2019). ICT-based Al-Qur'an phonology learning. *Journal of Physics: Conference Series*, *1402*(7), 077020. doi: https://doi.org/10.1088/1742-6596/1402/7/077020

Syahrir, S. H. (2022). *Metode Penelitian*. KBM Indonesia.

Syukur, F., Maghfurin, A., Marhamah, U., & Phaosan Jehwae. (2024). Integration of Artificial Intelligence in Islamic Higher Education: Comparative Responses between Indonesia and Thailand. *Nazhruna: Jurnal Pendidikan Islam*, *7*(3), 531–553. doi: https://doi.org/10.31538/nzh.v7i3.13

Triantoro, D. A., Wahyuni, T., & Purna, F. P. (2021). Digital Philanthropy: the Practice of Giving Among Middle To Upper-Class Muslim in Indonesia and Soft Capitalism. *Qudus International Journal of Islamic Studies*, *9*(2), 315–350. doi: https://doi.org/10.21043/qijis.v9i2.7814

Whyte, S. A. (2022). Islamic Religious Authority in Cyberspace: A Qualitative Study of Muslim Religious Actors in Australia. *Religions*, *13*(1), 69. doi: https://doi.org/10.3390/rel13010069

Zohdi, A. M., Al-Hafdi, F. S., & Alhalafawy, W. S. (2024). The Role of Digital Platforms in Studying the Holy Qur'an: A Case Study based on the Voices of Students from Diverse Cultures at the Prophet's Mosque. *Journal of Ecohumanism*, *3*(7), 3050–3062. doi: https://doi.org/10.62754/joe.v3i7.4440

ISSN 2715-9701 (online)

This page has been intentionally left blank

ISSN 2715-9701 (online)