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CLICK, LEARN, REMEMBER: Digital Tools for Memorizing the Quran

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Abstract

This study aims to evaluate the effectiveness of the Cinta Quran application's interactive features in supporting the Quran memorization process, focusing on user motivation, engagement, and accessibility. The research is significant in addressing the growing role of digital tools in religious education and their potential to improve spiritual practices. The study employs a qualitative descriptive approach with a case study method. Data were collected through digital observation of the application's features and user reviews on the PlayStore. The analysis was conducted thematically to identify key patterns and insights. The study reveals that features such as flexible quiz modes, audio playback, and color-coded visualization significantly enhance structured and personalized users' learning experiences. These interactive elements help learners build stronger retention by supporting repetitive practice in a more engaging and manageable format. These features also increase motivation and engagement of users from diverse demographics. However, technical challenges, including audio issues, application crashes, and slow loading times, were identified as barriers to accessibility and reliability. The findings contribute to the religious education field by demonstrating how interactive digital tools can effectively support the Quran memorization and broader spiritual practices. They also offer practical insights for developers to improve inclusivity and accessibility in religious applications. This article provides a novel perspective on integrating interactive features and addressing technical challenges in digital tools for religious education. Its focus on the Cinta Quran app offers unique insights into how personalized and adaptive technology can enhance user

experience and support spiritual practices in the digital era. This study also proposes the importance of continuous user-centered evaluation to ensure the app remains responsive to evolving learning needs.

Keywords: *Cinta Quran app; digital tools; interactive learning; religious education; quran memorization*

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Introduction

Digital technology has become an integral part of modern life, significantly influencing various aspects, including religious practices. In the context of Islam, there is a growing popularity of digital applications designed to support the memorization of the Quran, such as *Cinta Quran* (literal translation: love for the Quran) and *MyQuran* (an app providing features for Quranic study). These applications (app) offer interactive features, such as quiz modes, verse-by-verse audio playback, and color-coded visualizations, which enable users to memorize the Quran more easily and flexibly as part of their daily routines. Besides having positive impact to mental well-being, research indicates that religious applications also enhance individual spirituality (Hajdini & Iaia 2024, 267; Laird et al. 2024, 2068).

However, alongside these benefits, challenges such as the digital divide, the potential automation of rituals that may diminish spiritual meaning, and the lack of inclusive designs for certain user groups including individuals with disabilities and elders, remain significant (Bellar 2017, 111; Zainal et al. 2017, 4236). These phenomena warrant further investigation to understand how digital technology can effectively support religious activities while developing innovative and inclusive solutions that meet the needs of the faithful in the digital age. Empirical evidence from user reviews and academic findings underscores the urgency of exploring the impact of technology on society's spiritual and social values.

The advancement of digital religious applications is not limited to the context of Islam but also reflects broader dynamics in religion-technology relations. For instance, Islam-based applications usually focus on practical functions, such as prayer time reminders, guides for Hajj and Umrah, and interactive Quranic learning (Shambour & Gutub 2023, 2). Meanwhile, Christian and Catholic-based applications offer features such as prayer guides, meditation tools, and interactive learning through games (Kristiadi et

al. 2019, 1; Pridmore & Wang 2018, 502). Despite their significant potential to enhance individual religious practices, challenges remain, particularly in fostering broader community engagement. Many users tend to prefer private use for personal confidentiality, thereby minimizing opportunities to build spiritual connections within larger community networks (Bellar 2017, 111). Consequently, this phenomenon is not only relevant for examining the functionality of technology, but also for understanding the transformation of religious practices and spirituality in the digital age, as well as its implications for how individuals and communities practice their faith.

Preceding studies on religious applications are categorized into three main themes. The first category comprises studies that highlight the primary functions of religious applications, such as prayer guides, meditation tools, sacred text learning, and the tracking of spiritual practices. These studies, including those by Pridmore & Wang (2018) and Shambour & Gutub (2023), demonstrate that religion-based applications can enhance the ease and efficiency of performing daily religious rituals. However, they lack an in-depth discussion of the long-term implications of such applications for users' spiritual engagement and religious practices. The second category includes research focusing on user experience, such as motivation, perception, and psychological impact. Studies by Laird et al. (2024) and Hajdini & Iaia (2024) reveal that these applications improve mental health and spiritual well-being. Nevertheless, they fall short of exploring how the applications can be adapted to meet the needs of specific groups, such as elders or those with limited digital literacy.

The last category involves studies on the development and design of religious applications, including feature analysis and developer strategies. Campbell et al. (2014) and Zainal et al. (2017) underscore the challenges of creating applications that are inclusive and accessible to diverse demographics. However, these studies are limited in examining the effectiveness of application's internal aspects (such as interactive features) or external aspects (such as community engagement) in enhancing users' religious practices. This research gap highlights the need for further studies focusing on how religious applications, particularly those designed for Quran memorization, can be designed and implemented in ways that maximize feature effectiveness, inclusivity, and long-term user engagement to support religious practices, spirituality, and the well-being of users from various backgrounds. This study seeks to address the gaps since, recently, various digital platforms—such as *MyQuran*, *Muslim Pro*, *Ayat*, and *Tarteel*—have

offered features to assist users in memorizing the Quran, ranging from audio recitation to AI-assisted *tajwîd* feedback (Laird et al. 2024, 2068; Shambour & Gutub 2023, 2).

Among many Quran-based applications, the *Cinta Quran* app is selected as the case study for three academic reasons. First, it is one of the most widely used Quran memorization apps in Indonesia, with over 100,000 downloads and a consistent user rating above 4.8/5 on the Google Play Store, indicating broad adoption across diverse demographics. Second, it integrates a unique combination of interactive features—quiz modes, verse-by-verse audio playback, and color-coded *tajwîd* visualization—which have not been comprehensively evaluated in previous academic studies. Third, its focus on the Indonesian context allows for the exploration of cultural and linguistic factors (e.g., the *Rasm Uthmâni* script and Indonesian translations) that are often absent in international applications. This contextual focus enables the research to generate insights relevant both to local religious education and to the broader field of digital religious technologies. By examining this specific platform, the study contributes to the development of an innovative framework for designing more inclusive and interactive religious applications that are relevant to spiritual practices in the digital age.

The researcher argues that the use of digital technology, particularly the *Cinta Quran* app, has significant potential to enhance Quran memorization abilities as well as individuals' motivation and interest in religious learning. Its interactive features are believed to make the memorization process more efficient, engaging, and seamlessly integrated into users' daily lives. This perspective is supported by Campbell's theory of technology and religion interaction (Campbell & Cheong 2022), which posits that digital technology can expand access to religious practices and enable personal adaptation according to individual needs.

Additionally, the self-determination theory emphasizing the importance of intrinsic motivation in learning is highly relevant, as applications like *Cinta Quran* offer features that encourage users' active engagement and autonomy. The researcher contends that this technology can bridge the gap between users' spiritual needs and traditional limitations, such as restricted access to teachers or supportive learning environments. However, the effectiveness of this technology depends on the application's design, particularly its ability to ensure inclusivity for groups with special needs, such as individuals with disabilities or those affected by digital divide.

Consequently, the interaction between technology and religious elements has the potential to create a new, more flexible, and personalized approach to religious learning, albeit accompanied by ethical and technical challenges that require careful attention.

Research Method

The unit of analysis in this study is the *Cinta Quran–Alquran Hafalan* app, designed to support users in memorizing the entire 30 *juz* (sections) of the Quran. It has interactive features such as quiz modes, *murâja'ah* (review), color-coded *tajwîd* (rules of Quranic recitation) visualization, and verse-by-verse audio playback. The app also provides a digital *mushaf* (Quranic text) with the Indonesian *Rasm Uthmâni* (a script style of the Quran), advanced verse search tools, Indonesian translations, word-by-word interpretations (*tafsir*), night mode, and audio recitations (*murottal*) from selected *qâri* (reciters). It also allows offline access, making it a practical tool for Quran memorization in various situations. With over 100,000 downloads and its latest update in October 2023, the app offers a flexible and diverse learning experience, including gamified quiz modes designed to boost user motivation. The app, available for devices with 5.1 Android version and above, was developed by Hedi Herdiana and first released in February 2021. This study not only evaluates the technical features of the app but also examines how users utilize this technology to enhance their memorization processes, including identifying technical challenges based on user reviews on PlayStore.

The research employs a descriptive qualitative design with a case study approach to explore the effectiveness of the *Cinta Quran* app as a Quran memorization aid. A qualitative method was chosen to facilitate an in-depth exploration of user experiences, including aspects of motivation, engagement, and technical constraints. The case study approach was deemed appropriate as it provides the flexibility to integrate various types of data, enabling a comprehensive understanding of the phenomenon in line with the research objectives. This approach is also relevant for investigating the human-technology interaction dimension within a religious context.

The data for this study were collected through digital observations of the *Cinta Quran–Alquran Hafalan* app, as well as user reviews and developer responses available on the PlayStore platform. Digital observation was conducted to explore the key features to understand how they are designed

to support the Quran memorization process. Additionally, user reviews, which detail their experiences using the app, were analyzed to identify the effectiveness, motivation, and engagement in Quranic learning, as well as the technical challenges. The reviews were filtered based on relevance, completeness of information, and the frequency of reported issues. Tools such as qualitative data management software were employed to organize and categorize the reviews according to the study's themes. Developer responses to user feedback were also used as data sources to discover the extent to which user suggestions were accommodated. This combination of data sources provides comprehensive insights into the interaction between users and the application developer in supporting the Quran memorization process.

The data were then analyzed using thematic analysis, focusing on three main themes: the effectiveness of interactive features, user motivation and engagement, and technical challenges. User reviews were categorized into specific sub-themes, such as quiz modes, verse-by-verse audio playback, color-coded visualization, and *murâja'ah* evaluation. In addition to analyzing PlayStore user reviews, this study did not include direct interviews with app users, as the focus was on publicly available user-generated content. However, to strengthen the analysis, scheduled digital observations of the *Cinta Quran* app were conducted over a three-month period (October-December 2024).

Observations were performed twice a week to systematically document the functionality of key features, recording changes, performance consistency, and any technical issues encountered. A predefined coding framework was developed to map variables (e.g. feature performance, user engagement indicators, and reported technical issues) across both the observation notes and user reviews. This framework ensured that each variable was analyzed consistently and in alignment with the research objectives. The findings from the thematic analysis—integrating coded observation data and categorized user reviews—were then combined with insights from the literature to provide a comprehensive and nuanced interpretation of how the *Cinta Quran* app contributes to technology-based religious education.

Results and Discussion

Enhancing Quran Memorization through Digital Features

The *Cinta Quran* app offers several appealing features: a) interactive quiz; b) audio playback; c) *murâja'ah*; and d) color-coded visualization. They are beneficials for the users who mostly are *hâfiẓ* (memorizer) of the Quran.

The features demonstrate how technology can be creatively utilized to support religious education in an engaging and innovative manner.

Interactive Quiz

The quiz feature is designed to assist users in the Quran memorization process. Users can select quiz modes, shown in Figure 1, based on specific categories such as by *sûrah* (chapter), *juz*, or page. This flexibility allows users to focus on particular parts of the Quran they aim to memorize, enabling a more personalized learning approach. The feature is further enhanced with additional options, including *Sambung Ayat* (Verse Continuation), *Hafalan Ayat* (Verse Memorization), and *Hafalan Nomor* (Verse Number Recall). Additionally, options such as *Hafalan Arti* (Memorizing the Meaning) and *Hafalan Arti Per Kata* (Lexical Meaning Memorization) are designed to help users understand the meaning of the verses they memorize. These tools not only facilitate users in memorizing the Quranic verses, but also aid them to gain a deeper understanding of the content.

Figure 1
The Interactive Quiz Page in the *Cinta Quran* App

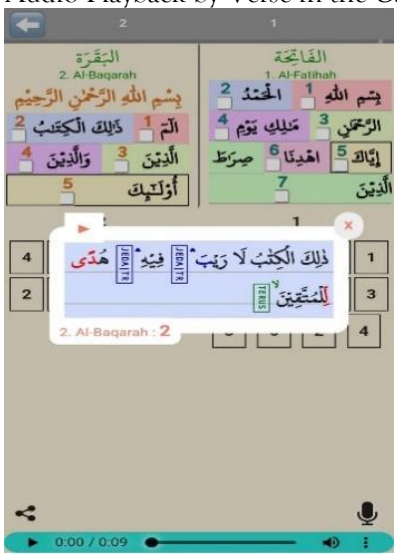
The quiz interface is intuitively designed to initiate the memorization process with simple navigation and adjustable settings. The "Start Quiz" button, at the bottom of the page, enables users to begin their practice sessions based on their chosen modes. Through the interactive tools, the

Cinta Quran app provides a digital solution to support the memorization and have deeper insight of Quranic verses in a more structured manner.

Audio Playback

The *Cinta Quran* app offers audio playback by verse specifically created to facilitate Quran drilling. Users can play audio for each verse at a slow pace, allowing them to attentively listen and follow the recitation. This feature allows users to do verses drilling without reading the texts. The tool is convenient in situations where direct reading is not feasible, such as during travel.

Figure 2
The Integrated Audio Playback by Verse in the *Cinta Quran* App



This feature is enhanced by the inclusion of color-coded blocks on the Quranic verses, providing visual guidance, as shown in Figure 2. Each segment of Quranic verses is systematically grouped in color blocks. The tools are effective to assist users in identifying the verse structure which helps understand the recitation patterns and aids them recalling as well as revising the verses they currently memorize. Additionally, in-built navigation allows users to select specific verses and replay the required sections. The combination of clear audio and color-coded visualization offers a holistic learning experience, enabling users to optimize their time for Quran drilling. This feature establishes the *Cinta Quran* app as a practical yet interactive tool,

covering users' diverse needs across varying levels of memorization proficiency.

Murâja'ah Feature

The innovative *murâja'ah* (review) feature help assess users' memorization progress. It is designed to offer a more inclusive and adaptive learning experience. As displayed in Figure 3, the feature presents two evaluation methods, "Robot Check" and "Self-Check," providing flexibility to choose the most suitable option for measuring their drilling process. The "Robot Check" option utilizes automated technology designed to validate precise memorization. When choosing this option, users get instant feedback on imprecision they made during Quran drilling. This is beneficial for those having no access to a Quran mentor. Meanwhile, the "Self-Check" option allows users who prefer independent assessment of their memorization progress. Both options in the feature are provided to accommodate all users' needs and preferences.

Figure 3
The Built-in *Murājaah* Tool in the *Cinta Quran* App

Furthermore, the *murâja'ah* tool interface is constructed with a simple and intuitive layout, allowing users to easily select the *sûrah*, *juz*, or page they want to evaluate. The combination of automated and manual assessment options enhances the effectiveness of Quran memorization process. The

feature reflects the attempt in leveraging technology advancement to cover the needs in religious practices.

Color-Coded Visual Design

Realizing that the users are varied based on their learning preferences, the developer creates the *Cinta Quran* app with color-coded visual design. The colorful design is applied everywhere in the app. The multi-colored graphic provides clear visual segmentation of each word or within a verse, making it easier to identify patterns and structures within a verse. With this color guidance, users can quickly recognize connections between words and verse arrangements, which are crucial aspects of the memorization process.

Figure 4
The Color-Coded Visual in the *Cinta Quran* App

Each color-coded block focuses the users' attention on specific elements of the verse, such as *tajwîd* (set of rules for the correct articulation of Quran recitation) or word meanings. For instance, as shown in Figure 4, the color blocks are complemented by pop-up explanation of *tajwîd*. This feature not only improves users' insight on a proper Quranic recitation, but also makes the learning experience more interactive and informative. The real-time explanation deepens the comprehension of verse context needed during memorization process. The colorful visual elements are beneficial for users with visual learning preference. Additionally, this feature facilitates

beginners in Quranic reading to understand the verses layout and helps them memorize efficiently.

User Review Regarding the Digital Application

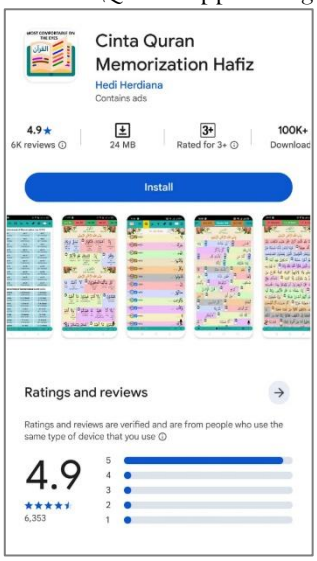
The four aforementioned interactive features of the *Cinta Quran* app receives positive feedback from users. Reviews on PlayStore highlight how these features greatly assist in the Quran memorization process. Users appreciate the app usability, the flexibility in accommodating various memorization needs, and the impact to users' motivation in learning and memorizing the Quran. This positive response underscores the app's success in meeting users' spiritual needs through innovative technological approach.

From the user review in PlayStore, Althof (dated September 23, 2024) expressed high appreciation for the Quiz tool that has multiple versions (by page, *juz,* and *sûrah*). He said, the *sûrah* mode is suitable for practicing short *sûrahs*, while the Page mode greatly facilitates memorizing longer ones. The comment illustrates how flexible the quiz mode is in tailoring users' specific needs when memorizing the Quran. Another user, Umnia (dated October 25, 2024), praised the advantages of the verse-by-verse Audio Playback feature. It allows users to listen to each verse in repeat. The tool also helps make the memorization process more structured and manageable. She also commented on the *murâja'ah* feature, claiming that it helps people to connect deeply with the Quran in daily life. One of built-in tools considered useful in the *Cinta Quran* app is the Search Bar, according to Larasakura (dated July 10, 2024). By using it, users are able to find verses just by typing the fragments of text.

From the PlayStore page, the *Cinta Quran* app shows exceptionally high satisfaction level. It received an average rating 4.9 out of 5 with total reviews reach 6,353 (as of October 21, 2025). Figure 5 displays the nearly full 5-star bar, demonstrating that the majority of users awarded the app a five-star rating. This indicates that the app has effectively met users' expectations as the learning medium. Meanwhile, the almost non-existent rating below 5 (five) stars suggests strong positive reputation of this mobile product among its users. Its user-centric features, design, and functionality established the *Cinta Quran* app as a valuable digital tool for supporting Quran memorization, earning widespread acclaim and trust among its users. The varied features reinforce the belief that the app is not only technically

effective but also highly relevant for covering the spiritual needs of users from diverse backgrounds.

Figure 5
The Display of *Cinta Quran* App Rating in PlayStore



Based on the collected data, several key patterns regarding the effectiveness of the *Cinta Quran* app interactive features are identified. First, the flexibility of the Quiz Mode reflects the diverse needs of users. The options to select modes by *sûrah*, *juz*, or page enable personalization that accommodates different drilling methods. The selection allows users to tailor their learning approaches. Second, the combination of Audio Playback by Verse and Color-Coded Visual Design fosters effective multimodal learning. The audio facilitates focused repetition, while the visual blocks aid in identifying verse patterns through systematic color coding. Audio playback particularly supports users with audio-visual learning style.

Third, the inclusivity in *murâja'ah* feature is demonstrated through both "Robot Check" and "Self-Check" options, allowing users to assess their memorization progress in ways that suit their preferences. Finally, the Lexical Meaning feature strengthens memorization by providing the Quran translation so the users get the message of each verse, as well as connect the verse to its context. These patterns indicate that the *Cinta Quran* app serves not just as a technical tool, but also as a platform for personalized, adaptive,

and meaningful learning. This is evidenced by the high levels of user satisfaction and the positive reviews it has received.

The innovative technology in the *Cinta Quran* app significantly supports religious activities, particularly in the process of Quran memorization. Features such as Quiz Mode, the combination of Audio Playback by Verse with Color-Coded Visualization, and the dual options for *murâja'ah* are real proofs that technology can be adapted to meet users' spiritual needs. This reflects a paradigm shift in religious learning, from conventional method to a more interactive and technology-based approach. The collected data not only reinforces the importance of innovation in religious education, but also highlights the potential of digital applications as effective tools for enhancing spiritual practices. These tools help bridge accessibility gaps and create learning experiences that are relevant to users from diverse backgrounds in the modern era.

The *Cinta Quran* app's flexible built-in tools, personalization, and multimodal approach align with global trends in interactive technology. It facilitates profound spiritual experiences characterized by awe, tranquility, and mindfulness (Buie 2014, 335; Jormanainen et al. 2014). Mobile technology has significant capacity in informal learning and strengthening religious communities, a trend accelerated during the COVID-19 pandemic through virtual platforms and community applications (Taylor & Benac 2022, 883). In particular, the color-coded block design and *tajwîd* pop-up explanations support Wyche et al.'s (2009) findings on the importance of integrating sacred design elements to enrich emotional and cognitive experiences. The rapid development of information technology has also transformed Islamic preaching (*da'wah*), enabling direct communication and the use of interactive multimedia that significantly expands access to religious contents (Kurniawan 2012, 65).

While this article presents many positive things of the *Cinta Quran* app, it is still important to note that the authors do not aim to verify or authenticate the Quranic text in the application. Reports of missing words, letters, or incomplete verses—though critical from a theological and interpretive standpoint—are treated here as part of the application's technical shortcomings rather than as doctrinal evaluations. Such errors undeniably cause misinterpretation and should be addressed by the developers through formal verification with authorized institution, such as *Lajnah Pentashihan Mushaf Al-Qur'an*, a unit under the Indonesian Ministry of Religious Affairs.

This study focuses on the application's interactive and innovative features in facilitating users' Quran memorization process. It elaborates how the built-in tools in the app significantly attract the users of varied background. The authors make no attempt to certify the textual accuracy of digital *mushaf*.

Exploring User Motivation and Engagement in Religion-Based App

Based on user reviews, the *Cinta Quran* application positively influences users' motivation to learn and memorize the Quran. Dhara (dated October 13, 2023) stated that the app is incredibly useful in learning process. It also helps enhance user's memorization skills. The interactive features play significant roles in attracting the user. As uttered by Sesilya Ainun Warda (dated July 6, 2023), her Quran drilling is not monotonous when using the app due to its colorful design. Moreover, she can adjust the app to her preference, such as choosing her favorite *qâri* (the Quran reciter). This statement reflects that the appealing visual layout and personalization features considerably boost user engagement.

The app encourages its users in practicing self-direct learning. Salsa Elsa (dated October 14, 2023) affirmed that the *Cinta Quran* app assisted her to study the Quran. As a user who learns from home, she is able to be an independent learner by utilizing the app features, particularly the *murâja'ah* tool that enables her in revising what she missed. This demonstrates that the app serves as a relevant digital learning solution, particularly for those who lack direct access to formal education. The user reviews reflect that the *Cinta Quran* app effectively meets various user needs, catering to both formal and informal learning contexts. Interactive features that can be modified based on each user's preference enhance users' motivation to learn and memorize the Quran. This makes the app a relevant and inclusive medium for users with varying levels of proficiency, as well as an innovative tool for both guided and independent Quranic learning.

The app's ability to sustain user engagement is evident from reviews by Welfia Roza (dated October 28, 2023) and Dafit Nur Wahid (dated April 29, 2022). They emphasize the attractive interface design and comprehensive features as key factors that maintain their consistency in using the app. This suggests that the app's success lies not only in its functionality but also in its capacity to create an enjoyable and motivating learning experience. For beginner users, as expressed by Kasiyan Sibolang (dated October 2, 2021), the app serves as an effective entry point for learning the Quran recitation.

By accommodating diverse needs and preferences, the *Cinta Quran* app makes a notable contribution to inclusive and interactive technology-based religious education.

These user reviews align with previous research, which underscores the potential of digital technology in fostering personalized spiritual practices and connecting users more deeply with their faith (Laird et al. 2024). The combination of audio features, and interactive visualization in religious applications not only enriches the religious experience but also addresses the needs of a tech-savvy generation, making spiritual practices more accessible in daily life. By bridging traditional practices with modern technology, the *Cinta Quran* app establishes itself as a valuable tool for promoting inclusive and effective religious education in the digital age. It supports technology-based Quranic learning by integrating interactive features, engaging visualization, and supporting self-direct learning.

Furthermore, religion-based digital technology is beneficial for both beginners and experienced users. It offers customized features, such as spiritual tracking and relevant content delivery, helping users connect more deeply with their religious practices (Shumkova 2022, 112; Yun et al. 2022, 130). In Aseery's (2024) study, for example, the use of digital storytelling, audio technology, and interactive visualizations not only enriches religious experiences but also significantly boosts user motivation for learning and worship.

Additionally, religious applications shift core practices—such as prayer, sacred text reading, and meditation—into accessible digital contexts. They simplify the integration of spiritual activities into daily life, whether on a personal level or through interactions with online communities (Bellar 2017, 111; Brubaker & Haigh 2017). Research also suggests that users with higher levels of religiosity are more inclined to use such applications to support their worship, while interactive features attract the younger generation who is more digitally literate (Thalgi 2024, 878). Thus, previous studies reinforce the assumption that religion-based applications create inclusive and effective ecosystems that increase user motivation and spiritual engagement in the modern era (Pridmore & Wang 2018, 504).

Furthermore, the ease of use, visual appeal, and personalization capabilities not only enhance the app's function as a learning tool, but also create a more inclusive and relevant experience for users' spiritual needs. The data strengthen that technology-based applications can serve as innovative solutions to overcome the boundaries of formal learning access by offering

flexibility and maintaining user consistency in their studies. Aligning with prior research, this study indicates that app-based technology enables flexible access to learning through online platforms like social media and mobile apps. Such platforms have been proven effective in creating interactive and easily accessible learning environments no matter the time or location (Jormanainen et al. 2014, 635; Susanti et al. 2024, 45). It implies that mobile app like *Cinta Quran* have the potential to become central tools in upgrading religious education, bridging technological advancements with the spiritual needs of society. However, challenges such as integrating digital tools with traditional practices and ensuring user focus must be addressed to maintain profound religious experiences (Schnitker 2022, 458). Research also highlights that religion-based apps can combine digital approaches with the spiritual needs of modern communities, fostering a more comprehensive religious education in the digital age (Campbell et al. 2014, 154).

Digital Features and Barriers in Quran Memorization Support

This study explores the value of the interactive features of the *Cinta Quran* app in improving Quranic memorization, user motivation and engagement, as well as addressing the app's technical barriers. The findings show that features such as flexible Quiz modes, Audio Playback, and Color-Coded Visual Blocks significantly assist users in the proses of Quran memorization through a structured and personalized approach. In addition, user motivation and engagement levels were elevated, largely due to the app's interactive and flexible features for independent learning. However, several technical problems—audio issues, application crashes, and slow loading—were identified, which negatively impact accessibility and user experience. These issues have been responded by the app developer, including bug fixes, feature optimization, and further development to boost the quality.

This current study proves that the interactive features of the *Cinta Quran* app serves as technical aids, as well as tools for fostering user motivation and engagement in Quranic learning. This is due to the ability to personalize the features which increases efficiency of technology-based learning applications. Personalized mobile app is confirmed to boost user's emotional and behavioral engagement (Xiao & Hew 2024). Moreover, user's experience in using the app creates a deeper spiritual learning, regardless of their differing backgrounds. The statement is consistent with studies on digital religious behavior. Putra (2020), for example, identifies how Indonesian Muslims engage with hadith about Dajjal through searching,

reviewing, contextualizing, and personalizing digital content, reflecting a supply–demand pattern in religious knowledge consumption. Similarly, the *Cinta Quran* app demonstrates how digital platforms shape everyday religious worship through interactive memorization tools, placing Quranic learning within the wider phenomenon of digital religiosity.

The technical barriers, such as audio issues and slow loading times, underscore the importance of application stability to meet its goals. As Wang et al. (2019), stated that app stability is a key factor in maintaining the reliability and sustainability of core systems, particularly for applications serving users from diverse segments. This insight is relevant to the challenges faced by the *Cinta Quran* app, where optimizing stability and performance is essential for improving overall accessibility.

Digital religious applications, such as *Cinta Quran*, can be effective tools for supporting religious education. Digital technology not only provides broad access to religious practices but also offers a more personalized engagement. Features such as Quiz, Audio Playback, and Color-Coded Blocks make the memorization process more efficient while integrating religious activities into users' daily lives, aligning with Campbell's theory of technology and religion interaction (Campbell & Cheong 2022, 154). They assert that digital technology can expand access to religious practices aligning with individual needs. For example, the *murâja'ah* tool in the *Cinta Quran* app provides unique flexibility for users to assess their memorization skills.

Moreover, the personalization elements of the app align with the *self-determination theory* developed by Deci and Ryan (1985), emphasizing the importance of intrinsic motivation, autonomy, competence, and relatedness in supporting the learning process. This theory posits that individuals are more likely to be motivated to learn and achieve goals when they feel they have control over the learning process (autonomy), can successfully tackle challenges that match their abilities (competence), and experience an emotional connection to the activity (relatedness).

In the context of the *Cinta Quran* app, the flexible Quiz modes and personalized Audio Playback by verse empower users with autonomy to tailor their learning methods. Meanwhile, the Color-Coded Visualization Blocks enhance users' competence by facilitating understanding and memorization of Quranic verses. By providing a responsive and relevant learning environment, the app creates an intrinsically motivating educational experience, in line with the principles of *self-determination theory*. Moreover,

this study supports the statement of DeRogatis and Weiner (2018), which indicate that employing digital methods in religious studies enhances student engagement and analytical skills. This statement is supported by the findings of Ratnaningsih et al. (2020), which demonstrate that using digital platforms such as Edmodo increases student motivation through interactive engagement. In the context of the *Cinta Quran* app, its interactive features foster a more active and focused learning experience, particularly the Quran memorization.

The novelty of this study lies in its in-depth exploration of the integration of interactive features to support technology-based religious education, with a focus on a personalized, flexible, and adaptive approach. The primary emphasis is on how the *Cinta Quran* app functions not only as a technical tool for memorizing the Quranic verses, but also as a platform that creates a relevant and integrated learning experience in users' daily lives. A unique contribution of this research is the identification of the role of the *murâja'ah* (review or repeating) evaluation feature, which combines manual and automated methods, enabling users with varying preferences and skill levels to independently assess their memorization progress. Furthermore, the intuitive color-coded visual design supports visual-based memorization methods, offering an innovative approach to enhance user engagement, particularly for those with visual learning styles. This study provides valuable insights into how digital technology can be effectively adapted to meet spiritual and educational needs while addressing challenges such as limited access and the absence of formal learning support. By bridging users' spiritual needs with modern, inclusive, and innovative technology, this research makes a significant contribution to the development of digital applications for religious education.

The findings highlight the positive role of the *Cinta Quran* app in supporting Quranic memorization through its interactive features, which are designed to be both personalized and adaptive. The modern built-in tools in the app provide an efficient and relevant learning experience for a diverse range of users, from beginners to advanced skills. However, the research also reveals dysfunctions in the form of technical challenges, such as Audio Issues, Application Crashes, and Slow Loading, which undermine the application's reliability. Additionally, the findings indicate that some features are not yet fully inclusive, particularly for users with specific needs, such as those with disabilities or limited internet access. Although these issues can be addressed

through updates and technical optimization, they remain challenges in ensuring a consistent and inclusive user experience.

Based on the findings, several actions and policies are recommended to enhance the quality and accessibility of the *Cinta Quran* app. First, developers should prioritize application stability by improving cross-device compatibility testing and optimizing the performance of core features, such as Audio Playback and Quiz Modes. Second, implementing a more comprehensive offline mode is crucial to support users with limited internet access, ensuring the application remains functional in diverse conditions. Third, the development of inclusive features must become a priority, such as enhanced audio guidance and more responsive visualization tools to cater to users with disabilities. Additionally, developers should adopt an integrated reporting system within the application to streamline the resolution of technical issues based on user feedback. Beyond technical improvements, governments and religious educational institutions can play a vital role in supporting the application's development. This can be achieved through funding for further research, providing training on the app's use in educational settings, and regulating advertisements to ensure they align with the religious context, thereby fostering user trust. These measures not only aim to improve the application's quality but also ensure that digital technology effectively meets the needs of inclusive and relevant religious education, making the *Cinta Quran* app a valuable tool for advancing digital religious learning.

Conclusion

This study examines the effectiveness of the *Cinta Quran* app in supporting the process of the Quran memorization through its interactive features, such as flexible Quiz modes, Audio Playback, and Color-Coded Visualization Blocks. The main findings demonstrate that the application significantly enhances motivation, engagement, and accessibility for users from diverse backgrounds. The personalization and adaptability of its features allow users to tailor their own learning methods, while the *murâja'ah* tool provides flexibility through both manual and automated options.

Although several features in the app are similar to other Quran-related apps, this study offers three novelties. First, it provides a systematic thematic analysis integrating scheduled digital observations with large-scale user review coding, allowing for the triangulation of real user experiences with actual feature performance. Second, it focuses on the Indonesian context, where

the integration of the *Rasm Uthmân* script, Indonesian translation, and culturally specific learning modes has not been extensively examined. Third, it identifies the dual-function *murâja'ah* as a unique pedagogical approach combining self-assessment with AI-supported correction, an aspect rarely analyzed in the literature on the Quran memorization tools. However, technical issues such as Audio Errors, Application Crashes, and Slow Loading were identified as factors negatively affecting the overall user experience. Addressing these shortcomings could enhance the app's reliability and further solidify its role as an inclusive, interactive, and culturally relevant tool for Quranic education in the digital era.

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