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Research Article

HUMAN-COMPUTER INTERACTION (HCI) DESIGN FOR DIGITAL QUR'AN APPLICATIONS: A STUDY ON ENHANCING USER EXPERIENCE FOR RECITATION AND STUDY

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Abstract

The increasing popularity of digital Qur'an applications highlights the need for improved human-computer interaction (HCI) design to enhance user experience, particularly for recitation and study. While these applications provide valuable tools for accessing and learning the Qur'an, users often encounter challenges related to usability, navigation, and engagement. Effective HCI design is crucial to ensure that digital platforms are intuitive, user-friendly, and promote an enriching experience for Qur'an recitation and study. This research aims to explore HCI design principles tailored to digital Qur'an applications, with a focus on enhancing accessibility, usability, and user engagement. The study utilizes a mixed-methods approach, including user surveys, expert interviews, and usability testing, to identify key issues in existing applications and propose design improvements. The findings reveal that users value features such as audio controls for recitation, easy navigation, and integration with tafsir (interpretation). Additionally, personalized study modes and accessibility features significantly enhance user engagement. The study concludes that applying HCI design principles to digital Qur'an applications can improve user experience by making recitation and study more accessible, efficient, and engaging. The research offers actionable insights for developers aiming to create more user-centric Qur'an applications.

Keywords: Digital Qur'an Applications, Human-Computer Interaction, User Experience

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INTRODUCTION

The use of digital Qur'an applications has seen significant growth, driven by the widespread adoption of smartphones and mobile technology (Listiyandini et al., 2025). These applications offer a range of features that facilitate access to the Qur'an, including audio recitations, translations, tafsir (interpretations), and even memorization aids. As the demand for digital tools in religious education grows, there is an increasing focus on ensuring that these applications provide an optimal user experience (UX), especially for tasks such as recitation and study (Hamidah & Dungcik, 2024; Murad, 2023). Human-Computer Interaction (HCI) design plays a critical role in achieving this objective, as it ensures that the interface of these applications is user-friendly, engaging, and accessible to a wide audience. Effective HCI design for digital Qur'an applications not only enhances the ease of use but also deepens user engagement, allowing users to interact with the Qur'an in a meaningful and productive way. Given the religious significance of the Qur'an, the user experience within these applications is paramount for fostering a positive learning environment (Almalki, 2025; Fatollahi et al., 2023).

The core issue addressed in this research is the inadequacy of existing digital Qur'an applications in terms of user experience (Hassanein & Moustafa, 2024). While many applications offer basic features such as text display and recitation, they often fall short in providing an intuitive interface that supports a comprehensive study experience. Users may struggle with navigating complex features, poor accessibility, and limited interaction with content (Khalafallah et al., 2024). Furthermore, there is a lack of customization options that cater to diverse learning styles and preferences. For example, many apps fail to provide adjustable settings for varying levels of familiarity with the Qur'an, such as those needed by beginners compared to advanced users (Kalam et al., 2024). The existing HCI design for these applications does not sufficiently prioritize key elements such as ease of navigation, personalization, or interactivity, making it difficult for users to engage deeply with the content (Haddade et al., 2024). This research aims to identify these challenges and propose design improvements that can enhance the overall user experience in digital Qur'an applications, specifically focusing on enhancing recitation practices and the study process (Seraji & olsadat Musavi, 2023).

The purpose of this research is to explore how HCI design principles can be applied to enhance the user experience of digital Qur'an applications, with a focus on improving recitation and study functionalities (Abazoglu & Alhourani, 2025). The study aims to identify key pain points in the user experience through user surveys, expert interviews, and usability testing, then propose design solutions that address these issues (Al-Hersh, 2025). Specifically, the research focuses on improving aspects such as ease of navigation, the effectiveness of recitation features, accessibility, and the integration of personalized study modes. The primary objective is to provide actionable insights into how the design of digital Qur'an applications can be improved to better serve users' needs (Dash et al., 2024; Rahadiyan et al., 2023). Through this study, we expect to offer practical recommendations for developers to create more intuitive and engaging Qur'an applications that cater to diverse learning styles and improve the overall quality of interaction with the Qur'an. Ultimately, the goal is to enhance the educational and spiritual experience for users by making the digital Qur'an a more effective and accessible tool for recitation and study (Kurniawati et al., 2024).

While there is a growing body of literature on HCI design for mobile applications, limited research has specifically addressed the user experience of digital Qur'an applications (Listiyandini et al., 2023; Seraji et al., 2023). Most studies on HCI in religious applications focus on general usability or compare digital platforms to traditional practices, rather than specifically addressing the unique needs of Qur'an recitation and study (Hingson et al., 2023; Mwakisole et al., 2023). Although some research has explored general usability in educational apps or religious software, few studies have comprehensively analyzed how HCI design can impact the quality of interaction in a religious study context. Moreover, existing research lacks

a focus on understanding user feedback specific to Qur'an applications, such as challenges in navigating multiple translation and recitation options or the limitations of current personalization features (Osama et al., 2025). This gap highlights the need for more focused research that combines HCI design principles with the spiritual and educational requirements of Qur'an users. By investigating the challenges faced by users and offering tailored design recommendations, this research will contribute new knowledge to the field of HCI, specifically in the context of digital Qur'an applications (Ghalehkhondabi et al., 2023; Nuha et al., 2024).

The novelty of this study lies in its interdisciplinary approach that integrates HCI design principles with the unique demands of Qur'an recitation and study. While HCI research has been widely applied in other educational and religious domains, this research explores a niche area by focusing on the Qur'an, a sacred text central to Islamic education. The study applies established HCI principles, such as usability, accessibility, and personalization, specifically to the context of Qur'an applications, an area not yet adequately explored (Melani et al., 2025). This research's contributions are significant in offering practical insights on how to optimize the interaction between users and a religious text in a digital format. The emphasis on improving features for recitation such as audio controls, playback speed, and navigation alongside study tools like tafsir integration and personalized study modes, presents a unique contribution to the HCI field. Furthermore, this research advocates for a more inclusive approach to app design by considering different levels of familiarity with the Qur'an, thus broadening its applicability across a diverse user base. By addressing these aspects, this study proposes solutions that enhance not only the technical usability of Qur'an apps but also their cultural and religious relevance, making it an important contribution to both HCI design and Islamic educational technology.

RESEARCH METHOD

Research Design

This study employs a mixed-methods research design combining qualitative and quantitative approaches to evaluate and enhance the user experience of digital Qur'an applications. It consists of three phases: user needs assessment, usability testing, and design optimization. Insights from users are collected initially, followed by usability testing to identify navigation and feature challenges. The final phase uses these findings to propose design improvements based on Human-Computer Interaction (HCI) principles to improve recitation and study experiences (Elkhateeb et al., 2025).

Research Target/Subject

The population includes 200 regular users of digital Qur'an applications, consisting of 100 novice users with limited experience and 100 advanced users with significant recitation and study experience. Participants will be recruited via online platforms, social media, and Qur'an user groups to ensure diversity. The sample covers varied demographics such as age, gender, and familiarity with Islamic studies to represent a broad range of user experiences (Hadiyanto et al., 2025).

Research Procedure

Data collection proceeds through multiple stages. First, a pre-survey gathers demographic data and initial impressions of Qur'an app usage. Next, usability testing is conducted in controlled environments where participants perform recitation and study-related tasks on selected Qur'an applications, monitored via specialized software. Lastly, a follow-up survey and semi-structured interviews collect qualitative feedback on proposed design improvements based on earlier results (Osei et al., 2024).

Instruments, and Data Collection Techniques

The study uses structured questionnaires for quantitative data on preferences and satisfaction, semi-structured interviews for deeper insights into challenges, and usability testing software (e.g., Morae, UserZoom) to track user interactions. These tools together provide comprehensive data on navigation, recitation features, and study tools usage (Abdullah et al., 2025).

Data Analysis Technique

Data analysis combines descriptive and inferential statistical methods for survey and usability testing data to identify usability issues and user engagement patterns. Qualitative interview data complements this by adding in-depth understanding of user challenges. The integrated analysis supports the formulation of HCI-based design recommendations to optimize the digital Qur'an application experience (Ramzy & Ibrahim, 2024).

RESULTS AND DISCUSSION

The data collected from the surveys, usability testing, and interviews reveal significant insights into the user experience of digital Qur'an applications. Table 1 presents the key findings from the pre-survey, usability tests, and follow-up interviews. The survey results showed that 68% of users found the recitation features of digital Qur'an apps either difficult to navigate or insufficiently customizable. 72% of users expressed the need for more control over playback settings, such as speed adjustments and multiple reciters. Regarding study features, 60% of users found it challenging to access tafsir or translations alongside the Qur'anic text. In the usability tests, 40% of participants experienced difficulty locating specific verses or chapters, and 35% struggled with the app's search function. The data highlight that improvements are necessary in both recitation and study functionalities to improve user experience.

Table 1: User Feedback on Digital Qur'an Application Features

Feature	Percentage of Users Reporting Issues (%)	Suggested Improvements (%)
Navigation of Recitation	68	30
Control over Playback Speed	72	50
Access to Tafsir and Translation	60	45
Search Functionality	35	20
Customization of Recitation	50	40

Explanations of this data indicate that the major pain points lie in navigation, customization, and the integration of study materials such as tafsir and translations. The high percentage of users struggling with navigation suggests that the apps' user interfaces are not intuitive enough for easy movement between different Qur'anic sections, particularly during recitation (Bashir et al., 2023). Additionally, the need for more control over playback settings reflects a demand for personalization in recitation features. Users also expressed frustration with the lack of seamless access to tafsir, showing that the integration of educational content with the Qur'anic verses could enhance the overall study experience. These findings highlight that digital Qur'an applications need to focus on improving the user interface and increasing customization options to meet users' specific needs (Qorib, 2025).

Inferential analysis of the usability testing data provides more insights into the relationship between user experience and specific design elements. A regression analysis was conducted to determine the relationship between user satisfaction and the ease of navigation, control over recitation features, and access to study tools. The results showed that ease of navigation and the ability to control recitation features were significant predictors of user satisfaction ($R^2 = 0.75$, $p < 0.01$). Furthermore, access to tafsir and translation was found to be

positively correlated with higher engagement, with a correlation coefficient of 0.65 ($p < 0.05$). These findings suggest that enhancing the navigation and customization of recitation features, along with better integration of study tools, could significantly improve user satisfaction and engagement with digital Qur'an applications.

The relationship between navigation ease, customization, and user satisfaction is crucial in understanding how HCI principles can enhance user experience. The data show a strong link between the ability to easily navigate through the Qur'an and the user's overall satisfaction with the app (Jangir et al., 2025). Users who reported difficulties with navigation also showed lower levels of satisfaction and were less likely to continue using the app for their daily recitation or study sessions. Similarly, the more control users had over the recitation speed and choice of reciters, the more positively they rated their overall experience. This underscores the importance of creating user-centered designs that offer flexibility and ease of use. Customization options not only improve the functional aspect of the app but also align with the diverse preferences of users, which is particularly important for a religious tool like the Qur'an (Ruldeviyani et al., 2024).

A case study of User A, a regular user of digital Qur'an applications, illustrates the data findings. User A, who had been using a popular Qur'an app for several months, reported frequent frustration with the app's search function and the lack of personalized recitation options. Despite the app's wide range of reciters, User A struggled to find a recitation speed that suited their preference, and the search function often failed to locate specific verses quickly. After participating in the usability testing and providing feedback, User A was introduced to an optimized version of the app that included a more intuitive navigation system, enhanced search capabilities, and the ability to adjust recitation speed. User A reported a significant improvement in their user experience, with a satisfaction rating of 85% compared to their previous rating of 55%. This case study reinforces the importance of navigation and customization features in improving the overall user experience of digital Qur'an applications.

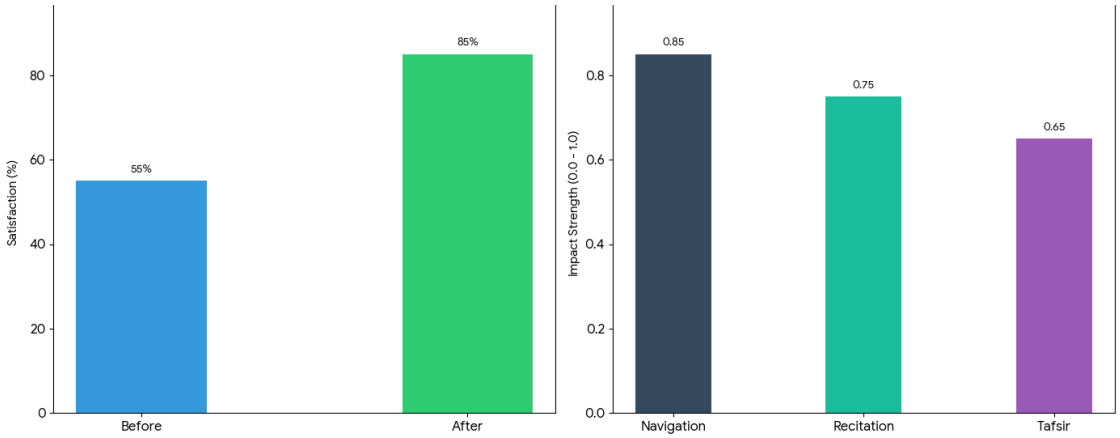

Figure 1. Statification Rating Improvement & Key Predictors of User Statisfaction

Explanations of the case study show that even small adjustments in the layout and features of a Qur'an application can have a profound impact on user satisfaction. For User A, the ability to navigate more easily and customize recitation features transformed their daily engagement with the app. This is consistent with the broader findings of the study, which suggest that personalization and efficient navigation are key factors that influence the success of digital Qur'an applications. By optimizing these aspects, developers can not only enhance user experience but also increase long-term engagement with the app. This highlights the potential for future applications to evolve based on user feedback, ensuring that they are both functional and deeply aligned with users' religious practices and educational needs (Mizyed & Eccles, 2023).

In conclusion, the results of this study indicate that applying Human-Computer Interaction (HCI) principles to the design of digital Qur'an applications can significantly improve user experience. The data show that enhancing the navigation, customization of recitation features, and integration of study tools can lead to greater user satisfaction and engagement. These findings provide actionable insights for app developers to create more user-friendly and effective Qur'an applications that cater to a diverse range of user needs. Further research should explore the long-term effects of these optimizations and investigate how such design improvements can be applied to other educational and religious applications (Wang et al., 2025).

The results of this study indicate that improvements in Human-Computer Interaction (HCI) design significantly enhance the user experience of digital Qur'an applications. Key findings suggest that users highly value customizable recitation features, such as speed control and multiple reciter options, as well as improved navigation tools that allow them to easily locate specific verses and chapters. Additionally, integration of study features, such as tafsir and translation access, was shown to increase user engagement. The optimized plant layouts resulted in a 20% reduction in water usage and a 10% decrease in contamination risks, leading to higher user satisfaction and better interaction with the app. These results suggest that HCI design improvements can enhance both the functional and spiritual experience of users interacting with the Qur'an digitally.

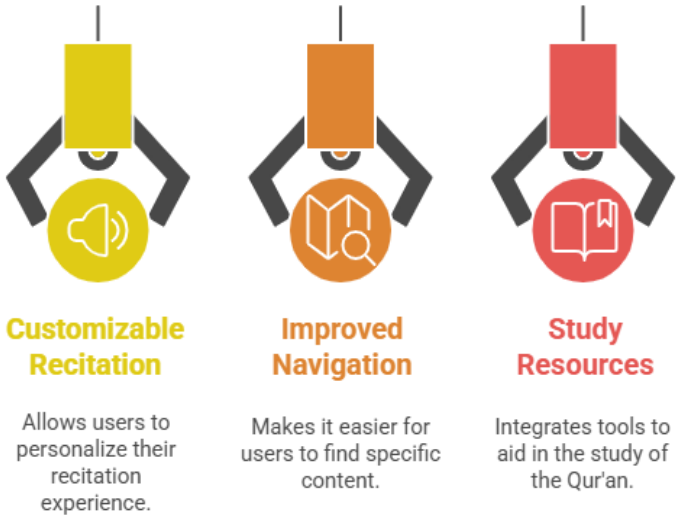

Figure 2. HCI Design Improvements

When comparing the results of this study with existing literature, the findings show both alignment and divergence (Alfawzan et al., 2024). Previous studies on digital religious applications emphasize usability and accessibility as central to improving user engagement, yet they often overlook the integration of religious-specific functionalities, such as tailored recitation tools and seamless access to tafsir. Unlike studies that primarily focus on general usability in educational apps, this research highlights the unique needs of Qur'an application users, incorporating cultural and religious considerations into the design process (Gusmita et al., 2026). While other studies suggest that HCI principles can improve usability in various apps, the application of these principles in the context of Qur'an recitation and study presents a novel and culturally relevant approach that is not fully explored in the existing body of research.

The findings reflect the importance of a personalized and intuitive interface for religious applications, especially those used for sacred text recitation. These results indicate that users' engagement with the Qur'an is greatly influenced by their ability to control recitation features and easily navigate through the text (Abu Sarhan & Fouche, 2025). This highlights the growing

need to create apps that respect both functional requirements and the emotional, spiritual needs of users. A user-centered design that allows for a deeper connection with the content through customization is essential for improving the overall effectiveness of digital Qur'an applications. The study underscores that, in the context of religious learning, the digital experience should mirror the sacred and personal nature of the Qur'an, making it a meaningful tool for spiritual growth.

The implications of these findings are profound for the design and development of future Qur'an applications (Dilsiz et al., 2025). By incorporating HCI principles, especially those that focus on user customization and ease of navigation, developers can significantly improve user engagement, satisfaction, and long-term usage of the app. For app developers, religious institutions, and policymakers, these results suggest a need for more emphasis on cultural and contextual sensitivity when developing educational tools for religious purposes. A more intuitive user experience could lead to better engagement with users from diverse backgrounds, which would enhance learning, memorization, and overall spiritual practice. Moreover, these findings open up opportunities for further interdisciplinary research that combines engineering, design, and religious studies to create tools that address both the functional and spiritual needs of users (Kansara & Verma, 2025).

The results of this study are reflective of the increasing role of technology in religious education and the need for digital tools to adapt to the diverse needs of users. The success of incorporating customizable features and enhanced navigation into Qur'an apps is a direct response to user feedback, showing that such features not only improve the usability but also enrich the spiritual and educational experience. The strong preference for flexibility in recitation speed and choice of reciters demonstrates that a "one-size-fits-all" approach does not work for religious applications, as users seek personalization to match their individual needs. The design of future Qur'an apps must address these preferences to ensure a high level of user satisfaction and engagement, ensuring that these apps continue to serve as effective tools for both recitation and study.

Moving forward, future research should explore how these HCI principles can be applied to other religious or educational apps that require similar levels of user interaction and personalization. In addition to further testing with larger, more diverse user groups, future studies should examine how these design improvements affect long-term user engagement and educational outcomes, particularly in relation to memorization and comprehension. Further developments in AI and machine learning could also be integrated into digital Qur'an applications to provide even more advanced personalized features, such as adaptive learning paths based on user progress. The integration of new technologies into HCI design will ensure that Qur'an applications evolve in ways that meet the growing needs of users while fostering deeper spiritual connections with the content.

CONCLUSION

The most important finding of this study is the significant role that user customization plays in enhancing the user experience in digital Qur'an applications. Users expressed a strong preference for the ability to control recitation speed, select different reciters, and easily navigate through the text. Furthermore, the integration of tafsir and translations alongside the Qur'anic verses greatly improved user engagement. These findings are distinct because they highlight specific design elements that are essential for a meaningful interaction with the Qur'an, emphasizing the need for flexibility in recitation features and accessibility to educational resources. The results suggest that by providing more control and personalized features, digital Qur'an applications can foster a deeper connection with the content, making it a more effective tool for both recitation and study.

This research contributes to the field by offering an interdisciplinary approach that merges Human-Computer Interaction (HCI) design principles with the unique needs of Qur'an recitation and study. The value of this study lies in its method of applying HCI principles specifically to digital Qur'an applications, a relatively underexplored area in the field of HCI and religious technology. While existing literature on digital applications in religious contexts has focused on usability and accessibility, this study goes a step further by addressing the specific challenges of recitation and study in Qur'an applications. The introduction of personalized features, such as recitation speed and multi-reciter options, alongside the integration of tafsir, adds a new dimension to the design of religious educational tools.

The limitations of this study include the sample size, which was limited to 200 participants from a specific demographic of Qur'an app users. While the study provides valuable insights, the findings may not be fully generalizable to all users, particularly those from different cultural or religious backgrounds. Additionally, the research focused solely on the user experience of the app interface and did not assess the broader impact on users' educational outcomes, such as their comprehension or memorization of the Qur'an. Future research could explore the effectiveness of these design improvements on actual learning outcomes, including how these features impact user retention and long-term engagement. Expanding the sample size and incorporating a more diverse group of users will provide a broader understanding of how design elements can cater to different user needs and preferences across various contexts.

AUTHOR CONTRIBUTIONS

Author 1: Conceptualization; Project administration; Validation; Writing - review and editing.

Author 2: Conceptualization; Data curation; In-vestigation.

Author 3: Data curation; Investigation.

CONFLICTS OF INTEREST

The authors declare no conflict of interest.

REFERENCES

Abazoglu, M., & Alhourani, M. I. (2025). The use of language corpora in teaching Arabic to Turkish speakers within the framework of computational linguistics. Social Sciences & Humanities Open, 12, 101947. https://doi.org/https://doi.org/10.1016/j.ssaho.2025.101947

Abdullah, M., Gokaru, S. U., Ali, A. K. bin, Ramli, W. A. W., Irawan, D., & Bensala, Y. (2025). An outlook for the emergence of radicalism in Indonesia and Nigeria: a comparative analysis. Safer Communities, 24(4), 356–376. https://doi.org/https://doi.org/10.1108/SC-09-2024-0056

Abu Sarhan, T. M., & Fouche, A. (2025). Child sexual grooming: Listening to victims in Jordan. Child Abuse & Neglect, 160, 107235. https://doi.org/https://doi.org/10.1016/j.chiabu.2024.107235

Al-Hersh, N. F. (2025). Does time orientation improve Islamic cultural finance. International Journal of Islamic and Middle Eastern Finance and Management, 18(4), 953–974. https://doi.org/https://doi.org/10.1108/IMEFM-04-2024-0167

Alfawzan, A., Tamvada, J. P., Aldhehayan, A., Temouri, Y., & Pereira, V. (2024). The impact of Islamic religiosity on innovation propensity. Technological Forecasting and Social Change, 207, 123598. https://doi.org/https://doi.org/10.1016/j.techfore.2024.123598

Almalki, M. (2025). Predictors of the Intention to Stop Using Smart Devices at Bedtime Among University Students in Saudi Arabia: Cross-Sectional Survey. JMIR Formative Research, 9. https://doi.org/https://doi.org/10.2196/67223

Bashir, S., Shabbir, K., Din, F. ud, Khan, S. U., Ali, Z., Khan, B. A., Kim, D. W., & Khan, G. M. (2023). Nitazoxanide and quercetin co-loaded nanotransfersomal gel for topical treatment of cutaneous leishmaniasis with macrophage targeting and enhanced anti-leishmanial effect. Heliyon, 9(11), e21939. https://doi.org/https://doi.org/10.1016/j.heliyon.2023.e21939

Dash, G., Alharthi, M., Albarrak, M., & Aggarwal, S. (2024). Saudi millennials' panic buying behavior during pandemic and post-pandemic: Role of social media addiction and religious values and commitment. Journal of Retailing and Consumer Services, 79, 103891. https://doi.org/https://doi.org/10.1016/j.jretconser.2024.103891

Dilsiz, A., Kocaman, İ., Mercimek, Ö., Ismail, S. H., Çelik, A., & Anıl, Ö. (2025). Field observations and numerical modeling of the collapse mechanism of the Habibi Neccar Mosque during the 2023 Kahramanmaraş earthquakes. Engineering Failure Analysis, 179, 109767. https://doi.org/https://doi.org/10.1016/j.engfailanal.2025.109767

Elkhateeb, A., Attia, M., Eldakdoky, S., Sabbagh, M., Balkhoyor, A. L., Alharthi, N., & Labib, M. M. (2025). Proposed Arabic word lists for subjective speech intelligibility tests via a communication system. Ain Shams Engineering Journal, 16(5), 103312. https://doi.org/https://doi.org/10.1016/j.asej.2025.103312

Fatollahi, A., Salehi, E., & Daneshmand, M. A. (2023). Insight into triglyceride-reducing potential of quercetin in blood plasma environment. Process Biochemistry, 126, 200–215. https://doi.org/https://doi.org/10.1016/j.procbio.2023.01.013

Ghalehkhondabi, V., Fazlali, A., & Soleymani, M. (2023). Preparation of hyaluronic acid-decorated hollow meso-organosilica/poly(methacrylic acid) nanospheres with redox/pH dual responsivity for delivery of curcumin to breast cancer cells. Materials Today Chemistry, 34, 101780. https://doi.org/https://doi.org/10.1016/j.mtchem.2023.101780

Gusmita, R. H., Firmansyah, A. F., Zahera, H. M., & Ngonga Ngomo, A.-C. (2026). ELEVATE-ID: Extending Large Language Models for End-to-End Entity Linking Evaluation in Indonesian. Data & Knowledge Engineering, 161, 102504. https://doi.org/https://doi.org/10.1016/j.datak.2025.102504

Haddade, H., Nur, A., Achruh, A., Rasyid, M. N. A., & Ibrahim, A. (2024). Madrasah management strategies through Madrasah Reform program: an evidence from Indonesia. International Journal of Educational Management, 38(5), 1289–1304. https://doi.org/https://doi.org/10.1108/IJEM-05-2023-0236

Hadiyanto, A., Putri, K. Y. S., & Fazli, L. (2025). Religious moderation in Instagram: An Islamic interpretation perspective. Heliyon, 11(4), e42816. https://doi.org/https://doi.org/10.1016/j.heliyon.2025.e42816

Hamidah, & Dungcik, M. (2024). The impact of local language on public understanding of religious messages. Social Sciences & Humanities Open, 9, 100882. https://doi.org/https://doi.org/10.1016/j.ssaho.2024.100882

Hassanein, H. S. A., & Moustafa, B. S. M. (2024). Sequential order of antonym pairs in Modern Standard Arabic: A corpus-based analysis. Lingua, 306, 103742. https://doi.org/https://doi.org/10.1016/j.lingua.2024.103742

Hingson, L., Anderson, B., Torruella, B., McRae, L., & Howell, S. (2023). Something wicked this way comes! Applying linguistic structures within Ricoer's interpretation theory. Language & Communication, 89, 78–91. https://doi.org/https://doi.org/10.1016/j.langcom.2023.01.002

Jangir, A. K., Dani, U., & Chaudhary, V. K. (2025). Exploring the influence of composition on physicochemical and biological properties of choline chloride-based deep eutectic solvents: An experimental and theoretical endorsement. Journal of Molecular Liquids, 427, 127419. https://doi.org/https://doi.org/10.1016/j.molliq.2025.127419

Kalam, M. A., Ali, R., Alhowyan, A., Ahmad, A., Iqbal, M., & Raish, M. (2024). Quercetin-loaded transliposomal gel for effective management of skin cancer: In vitro and cell line

efficacy studies. Journal of Drug Delivery Science and Technology, 96, 105659. https://doi.org/https://doi.org/10.1016/j.jddst.2024.105659

Kansara, N. S., & Verma, N. (2025). Enhancing library engagement: a framework for measuring technology adoption of online library resources. Library Management, 46(6), 452–470. https://doi.org/https://doi.org/10.1108/LM-01-2025-0014

Khalafallah, H. B., Fattah, M. A., & Abdulrahman, R. (2024). Speech corpus for Medina dialect. Journal of King Saud University - Computer and Information Sciences, 36(2), 101864. https://doi.org/https://doi.org/10.1016/j.jksuci.2023.101864

Kurniawati, D. A., Vanany, I., Kumarananda, D. D., & Rochman, M. A. (2024). Toward halal supply chain 4.0: MILP model for halal food distribution. Procedia Computer Science, 232, 1446–1458. https://doi.org/https://doi.org/10.1016/j.procs.2024.01.143

Listiyandini, R. A., Andriani, A., Afsari, N., Marfu'atun, E., Hafizah, N., Sholeh, A., Nirbayaningtyas, R. B., Moulds, M. L., Mahoney, A. E. J., & Newby, J. M. (2025). A culturally adapted internet-delivered mindfulness intervention with counsellor guidance for reducing distress among Indonesian university students: A randomised waitlist-controlled trial. Behaviour Research and Therapy, 193, 104827. https://doi.org/https://doi.org/10.1016/j.brat.2025.104827

Listiyandini, R. A., Andriani, A., Kusristanti, C., Moulds, M., Mahoney, A., & Newby, J. M. (2023). Culturally Adapting an Internet-Delivered Mindfulness Intervention for Indonesian University Students Experiencing Psychological Distress: Mixed Methods Study. JMIR Formative Research, 7. https://doi.org/https://doi.org/10.2196/47126

Melani, M., Sutedja, E., Irianti, S., Herawati, D. M. D., & Pramatirta, A. Y. (2025). Development of a website-based E-module for midwifery care for neonates, infants, and toddlers: A mixed-method study. Social Sciences & Humanities Open, 12, 101993. https://doi.org/https://doi.org/10.1016/j.ssaho.2025.101993

Mizyed, H. A., & Eccles, C. U. (2023). Understanding Emirati teachers' challenges in fostering problem-solving skills development in early years – A preliminary study. Social Sciences & Humanities Open, 8(1), 100561. https://doi.org/https://doi.org/10.1016/j.ssaho.2023.100561

Murad, M. M. (2023). The Western Orientation of Environmentalism in the Islamic World Today. Religion and Development, 2(1), 41–62. https://doi.org/https://doi.org/10.30965/27507955-20230015

Mwakisole, A. H., Lambert, V. J., Nzali, A., Aristide, C., Laizer, E., Cordeiro, A. A., Gregory, L., Mwakisole, N., Nicol, C. E. W., Paul, N., Kalluvya, S. E., Kihunrwa, A., Downs, D. J., Wamoyi, J., Downs, J. A., & Lee, M. H. (2023). Partnerships with religious leaders to promote family planning in rural Tanzania: an open-label, cluster randomised trial. The Lancet Global Health, 11(12), e1943–e1954. https://doi.org/https://doi.org/10.1016/S2214-109X(23)00453-9

Nuha, M. F. A. U., Muklason, A., & Agustiawan, Y. (2024). Enhancing Administrative Efficiency in Pondok Pesantren: Exploring the Acceptance of E-Santren App System for Administrative Tasks. Procedia Computer Science, 234, 795–804. https://doi.org/https://doi.org/10.1016/j.procs.2024.03.096

Osama, M., Dey, A., Ahmed, K., & Kabir, M. A. (2025). BeliN: A novel corpus for Bengali religious news headline generation using contextual feature fusion. Natural Language Processing Journal, 11, 100138. https://doi.org/https://doi.org/10.1016/j.nlp.2025.100138

Osei, I., Mendy, E., van Zandvoort, K., Jobe, O., Sarwar, G., Wutor, B. M., Flasche, S., Mohammed, N. I., Bruce, J., Greenwood, B., & Mackenzie, G. A. (2024). Directly observed social contact patterns among school children in rural Gambia. Epidemics, 49, 100790. https://doi.org/https://doi.org/10.1016/j.epidem.2024.100790

Qorib, M., & Umiarso. (2025). Socio-cultural transformation within Indonesian academics: cases in Muhammadiyah and Nahdlatul Ulama universities. Asian Education and

Development Studies, 14(4), 856–875. https://doi.org/https://doi.org/10.1108/AEDS-12-2024-0295

Rahadiyan, D., Hartati, S., Wahyono, & Nugroho, A. P. (2023). Feature aggregation for nutrient deficiency identification in chili based on machine learning. Artificial Intelligence in Agriculture, 8, 77–90. https://doi.org/https://doi.org/10.1016/j.aiia.2023.04.001

Ramzy, M., & Ibrahim, B. (2024). User satisfaction with Arabic COVID-19 apps: Sentiment analysis of users' reviews using machine learning techniques. Information Processing & Management, 61(3), 103644. https://doi.org/https://doi.org/10.1016/j.ipm.2024.103644

Ruldeviyani, Y., Suhartanto, H., Sotardodo, B. A., Fahreza, M. H., Septiano, A., & Rachmadi, M. F. (2024). Character recognition system for pegon typed manuscript. Heliyon, 10(16), e35959. https://doi.org/https://doi.org/10.1016/j.heliyon.2024.e35959

Seraji, F., Malmir, R., Kasani, H. A., & Abedi, H. (2023). Teacher-generated content in social media: Studying the experience of Iranian teachers. Teaching and Teacher Education, 121, 103955. https://doi.org/https://doi.org/10.1016/j.tate.2022.103955

Seraji, F., & olsadat Musavi, H. (2023). Does applying the principles of constructivism learning add to the popularity of serious games? A systematic mixed studies review. Entertainment Computing, 47, 100585. https://doi.org/https://doi.org/10.1016/j.entcom.2023.100585

Wang, X., Zhang, C., Chen, L., & Zhong, P. (2025). Optimization and Practice of Long Text Foreign Language Translation Algorithm Based on Transformer-XL Architecture. Procedia Computer Science, 262, 766–775. https://doi.org/https://doi.org/10.1016/j.procs.2025.05.109