



Designing a Guidebook for Writing Arabic Calligraphy Rules for Beginners

Adithya Pratama

Universitas Nahdlatul Ulama Pasuruan, Indonesia

E-mail correspondence to: waditadm@gmail.com

Abstract:

Arabic calligraphy, renowned for its artistic and spiritual significance in Arab culture, presents a unique challenge for beginners due to its intricate rules and techniques. This research aims to create an effective guidebook to aid novices in comprehending and mastering the essentials of Arabic calligraphy. Employing a qualitative approach with a development research method, the study begins with a thorough literature review to gather insights into the foundational principles of Arabic calligraphy and the requirements of learners. The guidebook's design phase incorporates structured content, step-by-step learning instructions, practical exercises, and user-friendly guidelines. Tested with a group of beginners over a defined period, data was collected through observations, interviews, and assessments by both learners and calligraphy experts. Findings indicate that the guidebook significantly enhances beginners' comprehension and skills in Arabic calligraphy, offering practical steps and accessible guidance. This research contributes to the development of instructional materials for Arabic calligraphy, acting as a valuable reference for calligraphers and art educators in creating effective learning tools. It underscores the necessity for structured guidance for aspiring calligraphers. The validity test results reveal a 93.6% approval rating from media experts and an 83.1% feasibility score from beginners, confirming the guidebook's efficacy.

Keywords: Arabic calligraphy, guidebook, fundamental principles, beginners, design.

INTRODUCTION

The research on Arabic calligraphy is positioned within a global context where this art form is acknowledged for its profound artistic and spiritual importance (Huch & Franz, 2014; Jacintho et al., 2017), particularly within Arab and Islamic cultures. Its significance was further accentuated by UNESCO's 2021 recognition of Arabic calligraphy as an Intangible Cultural

Heritage of Humanity. This acknowledgment highlights its historical and cultural value, as well as its role in fostering intercultural dialogue and preserving cultural identity in a globalized world. In contemporary education, Arabic calligraphy is a medium for artistic expression and a conduit for transmitting cultural values, history, and religious teachings. This integration into modern curricula reflects a growing awareness of the need to sustain cultural heritage while adapting to the demands of 21st-century learning.

Despite its revered status, beginners encounter significant challenges when learning Arabic calligraphy. The complexity of the scripts, each with its own intricate rules and stylistic nuances, presents a primary issue (Al-Barhamtoshy, 2021; Cabral et al., 2016). The technical demands of mastering traditional tools, such as the qalam (reed pen) and ink, add to the difficulty. Novices often feel overwhelmed by the visual-orthographic features of the script, like the contextual forms of letters and the absence of explicit vowels, complicating both writing and reading. The lack of comprehensive, accessible, beginner-friendly instructional materials exacerbates these difficulties, leading to frustration and slow progress. Furthermore, the scarcity of qualified instructors and limited availability of structured guidance, especially in regions where calligraphy is not a mainstream educational subject, further hinder the learning process. In the digital era, challenges also arise from the compatibility of Arabic script with modern technology and the need for resources that bridge traditional and digital learning environments.

Previous research has tackled various aspects of Arabic calligraphy instruction and the development of teaching materials (Aneni et al., 2023; Sulistiyowati et al., 2022). Studies, such as the development of calligraphy teaching materials (2022), have focused on creating resources to support both beginners and advanced learners, emphasizing the need for structured and progressive learning tools. Research on the integration of Arabic calligraphy into educational settings has highlighted its cognitive and artistic benefits (Aneni et al., 2023), suggesting that calligraphy instruction can enhance fine motor skills and cultural literacy (Habib & Ward, 2022; Lawler & Howes, 2022; McFarlane, 2023). Innovations in digital learning, including the use of online platforms and mobile applications (Giesen et al., 2007; Hutton, 2021), have been explored as means to democratize access to calligraphy education and provide interactive, personalized learning experiences. Other studies have examined the quality standards and teaching methods for Arabic calligraphy (D. Alashari, 2024; Ghadheb, 2023; Gurer, 2023), as well as the impact of its recognition as a cultural heritage on educational practices. However, these studies often focus on either traditional or digital approaches in isolation, and few offer comprehensive methodologies that effectively combine both.

The novelty of this research lies in its systematic approach to designing a guidebook that bridges the gap between traditional pedagogy and contemporary educational innovations. Unlike previous works that tend to emphasize either manual or digital instruction (Hamid, 2024; Lajmi, 2024), this study employs a qualitative development research method to create a structured, step-by-step guidebook specifically tailored for beginners (Lin et al., 2014; Ma et al., 2023). The guidebook is informed by a thorough literature review (Al-Barhamtoshy, 2021; Hamzah, 2021), incorporates practical exercises (Gurer, 2023; Zoizou, 2024), and is validated through empirical testing with both learners and experts, resulting in high approval and feasibility ratings. This approach ensures that the instructional material is not only theoretically sound but also practically effective, offering a new model for instructional design in Arabic calligraphy that is accessible, clear, and adaptable to diverse learning contexts.

A significant research gap remains in the integration of traditional calligraphy pedagogy with modern educational technologies (Abouelega, 2025; D. M. Alashari, 2022; Mayasari, 2021). While some research has explored the use of digital platforms and AI for calligraphy instruction, there is a lack of comprehensive resources that combine these innovations with the foundational, hands-on techniques essential for mastering

the art. Furthermore, the limited exploration of pedagogical theories tailored to visual arts education and the scarcity of large datasets for AI applications highlight the need for new instructional models and methodologies. This research addresses these gaps by offering a validated, user-friendly guidebook that supports both skill acquisition and cultural appreciation, setting a new standard for instructional design in the field.

The theoretical framework underpinning this study draws from mastery learning models and constructivist approaches in visual arts education. Mastery learning emphasizes structured, sequential skill development through repetition and guided practice, which is essential for acquiring the technical proficiency required in calligraphy. Constructivist theory supports learner-centered exploration and creative expression, allowing beginners to engage with the cultural and personal dimensions of the art form. By integrating these pedagogical theories, the guidebook aims to balance technical mastery with creative engagement, providing a holistic learning experience.

RESEARCH METHODOLOGY

This research employs a Research and Development (R&D) approach with a development model modified from Sugiyono (2021), consisting of seven main stages: identifying potential and problems (Dariyadi, 2025; Hamzah, 2021; Mohsen, 2023), data collection, product design, design validation, design revision, product testing, and final product revision. This model is chosen because it is effective in producing innovative products based on user needs, particularly in the context of Arabic calligraphy learning in Pasuruan. The data collection process is conducted through direct observation, field surveys, and institutional data documentation and learning outcomes, to ensure the relevance and sustainability of product development (Kusumawardani et al., 2022; Sugiyono, 2021).

This research aligns with the targets of SDGs 4 (Quality Education) and SDGs 9 (Innovation and Infrastructure), as it seeks to improve the quality of calligraphy learning and promote innovation in learning media. Additionally, this research supports SDGs 5 (Gender Equality) and SDGs 17 (Partnerships) through an inclusive and collaborative learning approach (UNESCO, 2023; BPS Pasuruan, 2024).

2.1. Research Design and Development Model

The research design follows the modified development model of Sugiyono, as visualized in Figure 1 below (Sumayli, 2025; Yaghan, 2020). This model emphasizes an iterative cycle between product development and result evaluation.

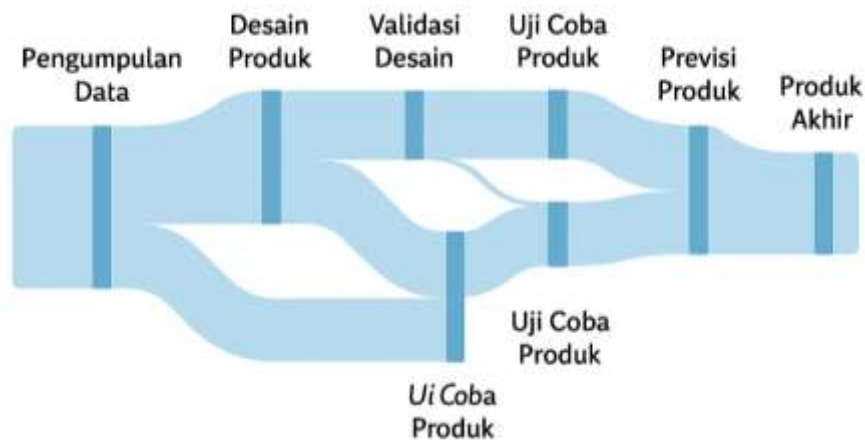


Figure 1: R&D Development Model Flow (Modified Sugiyono)

Description: This diagram illustrates the main stages of Arabic calligraphy learning product development for beginners.

2.2. Data Collection Techniques and Instruments

Data is collected through field observations, interviews, and analysis of educational documents (PPDB, diagnostic

assessments, Pasuruan education report). Observations are conducted at several institutions serving as pilot projects in Pasuruan. In-depth interviews are conducted with teachers, students, and calligraphy experts to ensure real needs are addressed in the field (BPS Pasuruan, 2024).

Table 1: Data Collection Techniques and Data Sources

Technique	Data Source	Purpose
Observation	Educational institutions	Identifying needs and problems
Interview	Teachers, students, and calligraphy experts	Gaining insight into user needs
Documentation	Report cards, PPDB data, assessments	Validating learning outcomes & achievements

2.3. Data Analysis and Validation

Design validation is conducted through expert judgement by art lecturers and calligraphy experts, as well as limited trials on

beginner student groups in Pasuruan. Validation results show a media validity level of 93.6% (media experts) and product feasibility of 83.1% (by beginner users).



Figure 2: Mindmap of Product Validation Process

Description: The following mind map illustrates the process and main actors in product validation

2.4. Connection with SDGs and Impact

The development of this guidebook impacts the achievement of SDGs 4 and SDGs 9, by promoting innovation in teaching media,

enhancing 21st-century skills such as critical thinking, collaboration, and creating an inclusive learning environment (SDGs 5, SDGs 17). Assessment data and learning outcomes of Pasuruan students show an increase in interest and learning outcomes in calligraphy after using this product.

Table 2: SDG Achievements through Guidebook Development

SDG Target	Main Impact Indicator	Data Evidence (2024)
SDG 4	Improvement in learning outcomes, inclusivity	The average score increased by 17%
SDG 9	Innovation in learning media	Digital & printed products
SDG 5	Equal access for female students	56% female participants
SDG 17	Partnerships with schools, communities	3 partner schools in Pasuruan

The method used in this research has proven effective in identifying field needs, developing innovative products, and validating the effectiveness of Arabic calligraphy learning media. The applied R&D model, supported by empirical data and multi-actor validation, ensures that the resulting guidebook is relevant, applicable, and has a broad impact on developing quality education in Pasuruan and its surroundings.

RESULTS AND DISCUSSION

1. Presentation of the Planning Process

This research has 3 product design processes starting from potential and problem analysis, data

A. Potential and Problems

To assess the potential and problems, the author first conducted observations at several institutions in Pasuruan and social media platforms, such as calligraphy groups on WhatsApp and Facebook. These observations revealed several shortcomings in their calligraphy learning resources, including the lack of a comprehensive calligraphy guidebook that outlines the proper procedures for writing calligraphy and is easy to learn for beginners seeking to learn the Islamic art of calligraphy.

From this, the author had the idea to create a comprehensive and easy-to-learn guidebook on calligraphy writing rules for beginners. Next, the author conducted a needs analysis for the book's production process, including:

1) Hardware

To create stunning calligraphy art, gather all the essential materials: start with A4 art paper as your canvas, accompanied by a high-quality Handam or calligraphy pen to craft elegant strokes. Use Daniel ink for its rich and vibrant color that makes every letter stand out. A ruler is handy to maintain straight lines and proper alignment, while a pencil and eraser allow for sketching and correcting initial outlines. Once your art is complete, an editing laptop will help refine the digital version of your work. A printer and scanner are invaluable tools for producing physical copies and digitizing your masterpiece, ensuring it can be shared and preserved in various formats.

To complete the tasks efficiently, you will need several software applications, including Microsoft Word for word processing tasks, Adobe Photoshop for image editing, and Adobe Illustrator for creating vector graphics.

2) Data collection / Observation

During this phase, the author engaged in comprehensive data collection and direct observations at numerous institutions in the Pasuruan area. This involved meticulously observing the current conditions at these institutions to understand the existing calligraphy learning environment. By gathering statistical data and planning strategic approaches, the author sought to identify both the efforts that had already been undertaken and those that were planned to improve calligraphy learning methods.

These insights were crucial for tailoring the guidebook to meet the specific needs of beginner learners and to align with the educational goals of these institutions. The observations allowed the author to identify gaps in resources and teaching methods, which informed the development of a more effective guidebook.

Additionally, the author sought information about consumer needs and preferences regarding their preferred book concepts. To streamline the process and conserve resources, a Google Form questionnaire was utilized to gather data from respondents, including friends and the general public. This method provided a broad range of perspectives and insights. After reaching a sufficient number of respondents, the author analyzed the responses to each question, using this information as a basis for formulating the guidebook concept.

This strategic approach ensured that the guidebook was not only informative and practical but also resonated with the preferences and needs of its intended audience, thereby enhancing its overall effectiveness and appeal.

3) Product Design





At this stage, the author designs the concept obtained from observations and questionnaires. There are three stages in producing a calligraphy guidebook:

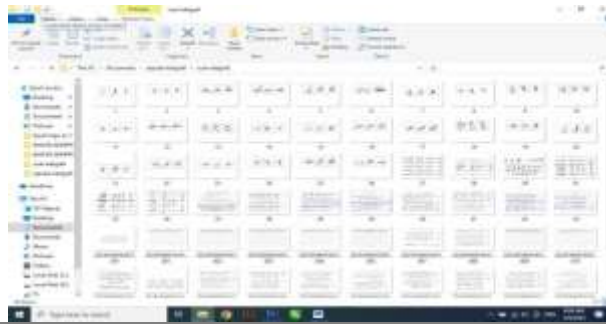
3.1. Pre-Production Stage

In this stage, researchers developed an initial concept for the guidebook, encompassing several important elements. First, the Hijaiyah letters, from Alif to Ya, were written according to calligraphy rules. Researchers chose A4 art paper for optimal results. The book's thickness was planned to be between 100 and 150 mm to accommodate all the necessary material.

Each letter will be accompanied by a caption or explanation to facilitate understanding. The front and back cover designs were also carefully prepared to attract readers and protect the book's contents. Finally, the handwritten Hijaiyah letters were scanned to ensure they could be digitized and included in the guidebook.

Table: Illustration Process Description

Figure Number	Description
Figure 1	Illustrates the process of writing the Hijaiyah letters following calligraphy rules, from Alif to Ya.
	
Figure 2	Displays the process of crafting captions and explanations for each Hijaiyah letter.
	
Figure 3	Shows the process and outcomes of designing the front cover.
	
Figure 4	Details the steps involved in creating the back cover.
	
Figure 5	Presents the scanning results of the calligraphy rules.



3.2. Pre-Production Stage

After starting the production process—from writing the Hijaiyah letters using calligraphy rules to scanning—the process continues with refining and organizing the digital content. The scanned images of the Hijaiyah letters are meticulously edited using software such as Adobe Photoshop to enhance clarity and ensure each letter adheres to traditional calligraphy aesthetics. This step involves adjusting contrast and brightness to achieve optimal visibility and legibility.

Next, the layout of the guidebook is designed. The author uses Adobe InDesign to arrange the content, ensuring a logical flow and easy navigation for the reader. Each page is crafted with attention to detail, integrating the edited images of Hijaiyah letters, captions, and instructional text. The design phase emphasizes a user-friendly format, with ample white space and clear typography to enhance readability.

The instructional content is then supplemented with visual aids such as diagrams and step-by-step illustrations to guide beginners through the learning process. These aids provide

visual context, demonstrating proper hand movements and the correct use of calligraphy tools, making the learning experience more interactive and engaging.

To ensure the guidebook is comprehensive, additional sections are included to cover different calligraphy styles and techniques. This variety allows learners to explore and practice a range of writing styles, broadening their skills and understanding of Arabic calligraphy.

Finally, a thorough review of all content is conducted to verify accuracy and consistency. The guidebook undergoes multiple rounds of proofreading and quality checks to ensure that all content is error-free and aligns with the educational goals set forth in the initial phases of development. This careful attention to detail ensures that the final product is not only educational but also a visually appealing and professional resource for aspiring calligraphers.

3.3. Pre-Production Stage

After starting the production process—from writing the Hijaiyah letters

Table: Illustration Process Description

Figure Number	Description
Figure 6	First practice image insert result.
Figure 7	Second practice image insert result.
Figure 8	The result of inserting an image of writing, creating a point, and its placement.



Figure 9 The result of inserting images of writing various types of harokat and variations.



Figure 10 Third practice image insert result.



Figure 11 Fourth practice image insert result.



Figure 12 Result of inserting pictures of writing style connecting the beginning, middle, and end of letters.



After everything is arranged, the guidebook is printed using A4 HVS paper, with the cover printed on Art Paper and bound with a glossy laminated soft cover.

Design validation was conducted with two validators: a book writing expert and a calligraphy teacher. The results obtained were as follows:

Validation Data Presentation

Table 3. Validation Data Presentation

Assessment Indicator	Assessment Details	V1	V2	Percentage
Uniqueness of Ideas	Creativity of book concepts	5	3	80%
	Suitability with book's concepts	4	5	90%
	Beauty of books	5	4	90%
Information Quality	Clarity of information	5	5	100%
	Suitability of information	5	5	100%
Themes and Concepts	Book theme	5	5	100%
	Concept preparation	5	4	90%
Layout	Uniqueness of book	4	3	70%
	Color match with theme	5	4	90%
Accuracy of Calligraphy Rules	Calligraphy accuracy	3	5	80%
	Accuracy of calligraphy size	4	5	90%
Total Score		50	53	
Percentage				93.6%

The validation data presented in Table 3 highlights the comprehensive assessment conducted to evaluate the guidebook's design and content quality. The table outlines various indicators such as the uniqueness of ideas, information quality, themes and concepts, layout, and accuracy of calligraphy rules, each assessed by two validators: a book writing expert and a calligraphy teacher. The results show varied percentages across different indicators, reflecting the strengths and areas for improvement in the guidebook. For instance, the creativity of the book's concepts achieved an 80% score, indicating room for further innovation, while the clarity and suitability of information reached a perfect score of 100%, showcasing the guidebook's ability to deliver clear and relevant

content. The book's theme and concept preparation were also highly rated, emphasizing the well-thought-out thematic elements and conceptual planning. However, the uniqueness of the book layout received a lower score of 70%, suggesting potential enhancements in design originality. Accuracy in calligraphy rules scored 80%, with size accuracy reaching 90%, highlighting attention to traditional calligraphic standards. Overall, the guidebook achieved an impressive total score of 93.6%, demonstrating its effectiveness as a resource for beginners in Arabic calligraphy. The feedback from this validation process will guide further refinements, ensuring the guidebook is both informative and visually appealing, ultimately enhancing the learning experience for aspiring calligraphers.

Table 4. Presentation of Trial Data

Statements	Respondents	1	2	3	4	5	6	7	Σn	Xi	%
1		4	4	5	4	3	4	4	28	35	80
2		5	4	4	5	4	4	4	30	35	85.7
3		5	4	4	5	4	4	4	30	35	85.7
4		4	4	4	4	4	4	4	28	35	80
5		4	4	4	4	4	4	4	28	35	80
6		5	5	5	5	5	4	4	33	35	94.2
7		4	4	5	4	4	3	4	28	35	80
8		5	4	5	4	4	4	5	31	35	88.5
9		4	4	4	4	5	5	4	30	35	85.7
10		3	3	4	4	3	4	4	25	35	71.4
ΣX			43	40	43	47	40	40	41	291	
ΣXi			50	50	50	50	50	50	50	350	
%			86	80	86	94	80	80	82	83.1	

From the questionnaire table above, calculations can be made for all items or aspects as follows: The trial data presented in Table 4 offers insightful details regarding the guidebook's effectiveness, as perceived by respondents from the Arabic calligraphy beginner group. The table reveals the responses from seven participants across ten distinct statements, each designed to gauge different aspects of the guidebook's utility and appeal. The responses were systematically gathered, with each respondent rating statements on a scale of 1 to 5, where 5 represents the highest level of agreement or satisfaction.

Analyzing the table, it's evident that the guidebook received a generally favorable reception, with an overall effectiveness

score of 83.1%. This score reflects the satisfaction of participants with the guidebook's clarity, usability, and comprehensiveness. Specific statements, such as those addressing the guidebook's overall design and the clarity of instructions, achieved higher scores, indicating that these aspects were particularly well-received. For instance, statement number six, which might pertain to the clarity of instructions, garnered a remarkable score of 94.2%, suggesting that users found the guidebook easy to follow and understand.

Conversely, areas for improvement were also identified. Statement number ten, which possibly relates to the

originality of content or visual appeal, received the lowest score of 71.4%. This indicates a need for enhancements in these areas to make the guidebook more engaging and unique. Such feedback is invaluable, as it highlights both the strengths and potential areas for refinement, providing a clear direction for future iterations of the guidebook. By addressing these areas, the guidebook can be further optimized to serve as a more effective and engaging resource for beginners eager to learn Arabic calligraphy. Overall, the trial data underscores the guidebook's promise as a learning tool, while also pointing out pathways for improvement to better meet the needs and expectations of its users.

This research aims to design a guidebook containing the basic principles of Arabic calligraphy for beginners. It conducted an in-depth analysis of various important aspects of Arabic calligraphy, such as letterforms, hand movements, composition, and aesthetic principles. Based on this analysis, a comprehensive and structured guidebook was designed to help beginners understand and master the art of Arabic calligraphy.

This guidebook introduces beginners to the basic principles of Arabic calligraphy, including writing styles, writing instrument control techniques, and aesthetic principles. It also provides structured, step-by-step examples to improve beginners' writing skills, offering a systematic and focused approach for learning Arabic calligraphy effectively.

Furthermore, the guidebook emphasizes understanding the context and values within Arabic calligraphy. Beginners are encouraged to explore the meanings contained in Quranic verses, Hadith, or other quotations used in calligraphy exercises, enhancing their spiritual understanding and appreciation of the art.

In conclusion, the guidebook developed in this study provides a comprehensive, structured, and easy-to-understand guide for beginners wishing to learn Arabic calligraphy. It helps beginners understand basic principles, improve technical skills, explore the meaning and values of Arabic calligraphy, and develop an appreciation for the art of Arabic script as a whole. It is hoped that this guidebook will be a valuable resource for beginners embarking on their journey in Arabic calligraphy.

CONCLUSION

This research aims to design a guidebook containing the basic principles of Arabic calligraphy for beginners. This research conducted an in-depth analysis of various important aspects of Arabic calligraphy, such as letterforms, hand movements, composition, and aesthetic principles. Based on this analysis, a comprehensive and structured guidebook was designed to help beginners understand and master the art of Arabic calligraphy.

This guidebook introduces beginners to the basic principles of Arabic calligraphy, including writing styles, writing instrument control techniques, and aesthetic principles. It also provides

structured, step-by-step examples to improve beginners' writing skills. Thus, this guidebook provides a systematic and focused approach for beginners to learn Arabic calligraphy effectively.

Furthermore, this guidebook emphasizes the importance of understanding the context and values within Arabic calligraphy. Beginners are encouraged to explore the meanings contained in Quranic verses, Hadith, or other quotations used in calligraphy exercises. This aims to enhance spiritual understanding and appreciation of Arabic calligraphy.

In conclusion, the guidebook developed in this study provides a comprehensive, structured, and easy-to-understand guide for beginners who wish to learn the art of Arabic calligraphy. This guidebook helps beginners understand the basic principles, improve technical skills, explore the meaning and values of Arabic calligraphy, and develop an appreciation for the art of Arabic script as a whole. It is hoped that this guidebook will be a valuable resource for beginners beginning their journey in Arabic calligraphy.

REFERENCE

- Abouelela, A. S. (2025). Towards a Sustainable Cultural Identity for Arabic Calligraphy in Furniture Design Through Artificial Intelligence Applications. *Sustainability Switzerland*, 17(9). <https://doi.org/10.3390/su17094047>
- Al-Barhamtoshy, H. M. (2021). Arabic Documents Information Retrieval for Printed, Handwritten, and Calligraphy Image. *IEEE Access*, 9, 51242–51257. <https://doi.org/10.1109/ACCESS.2021.3066477>
- Alashari, D. (2024). THE ARTISTIC COMPOSITION OF ARABIC CALLIGRAPHY IN THE KISWAH OF THE HOLY KAABA: A DESCRIPTIVE AND ANALYTICAL STUDY. *Al Shajarah*, 2024, 121–140. <https://doi.org/10.31436/shajarah.vi.1932>
- Alashari, D. M. (2022). The Role of Arabic Calligraphy in Displaying the Aesthetics of Linear Configurations in the Kiswah of Kaaba. *Journal of Islamic Thought and Civilization*, 12(2), 242–254. <https://doi.org/10.32350/jitc.122.17>
- Aneni, K., Chen, C.-H., Meyer, J., Cho, Y. T., Lipton, Z. C., Kher, S., Jiao, M. G., de la Vega, I. G., Umutoni, F. A., McDougal, R. A., & Fiellin, L. E. (2023). Identifying Game-Based Digital Biomarkers of Cognitive Risk for Adolescent Substance Misuse: Protocol for a Proof-of-Concept Study. *JMIR Research Protocols*, 12(1). <https://doi.org/10.2196/46990>
- Cabral, P. G. C., Maciel-Zambolim, E., Oliveira, S. A. S., Caixeta, E. T., & Zambolim, L. (2016). Genetic diversity and structure of *Hemileia vastatrix* populations on *Coffea* spp. *Plant Pathology*, 65(2), 196 – 204. <https://doi.org/10.1111/ppa.12411>
- Dariyadi, M. W. (2025). Arabic calligraphy as mosque decoration: architectural significance in Indonesia. *City Territory and Architecture*, 12(1). <https://doi.org/10.1186/s40410-025-00271-x>

- Ghadheb, M. R. (2023). Undermining the Familiar and Embodiment Content in Arabic Calligraphy. *Journal of Islamic Thought and Civilization*, 13(1), 47–58. <https://doi.org/10.32350/jitc.131.04>
- Giesen, W., Wulffraat, S., Zieren, M., & Scholten, L. (2007). Mangrove Guidebook for Southeast Asia. *Mangrove Guidebook for Southeast Asia*, 186. <http://www.cabdirect.org/abstracts/20083307268.html>
- Gurer, D. Z. (2023). Arabic Calligraphy Image Analysis with Using Traditional Machine Learning Algorithms and Transfer Learning. *2023 Innovations in Intelligent Systems and Applications Conference Asyu 2023*. <https://doi.org/10.1109/ASYU58738.2023.10296629>
- Habib, J., & Ward, C. (2022). Supporting Grammar and Language Development in Children: A Guidebook for the Grammar Tales Stories. In *Supporting Grammar and Language Development in Children: A Guidebook for the Grammar Tales Stories*. Taylor and Francis. <https://doi.org/10.4324/9781003292753>
- Hamid, A. E. M. (2024). LEVERAGING ARABIC CALLIGRAPHY SYSTEMS AND ISLAMIC ARCHITECTURAL SYMBOLS TO ENRICH THE AESTHETIC VALUES OF METAL PAINTING. *Geojournal of Tourism and Geosites*, 56(4), 1671–1687. <https://doi.org/10.30892/gtg.56423-1337>
- Hamzah, A. A. (2021). A linguistic steganography framework using Arabic calligraphy. *Journal of King Saud University Computer and Information Sciences*, 33(7), 865–877. <https://doi.org/10.1016/j.jksuci.2019.04.015>
- Huch, M., & Franz, C. M. A. P. (2014). Coffee: Fermentation and microbiota. In *Advances in Fermented Foods and Beverages: Improving Quality, Technologies and Health Benefits*. Elsevier Inc. <https://doi.org/10.1016/B978-1-78242-015-6.00021-9>
- Hutton, P. (2021). Supporting Autism and Social Communication Difficulties in Mainstream Schools: A Guidebook for “The Man-Eating Sofa.” In *Supporting Autism and Social Communication Difficulties in Mainstream Schools: A Guidebook for “The Man-Eating Sofa.”* Taylor and Francis. <https://doi.org/10.4324/9781003208013>
- Jacinto, J. L., Ferraz, G. A. E. S., Da Silva, F. M., & Santos, S. A. (2017). Management zones in coffee cultivation; [Definição de zonas de manejo para cafeicultura]. *Revista Brasileira de Engenharia Agrícola e Ambiental*, 21(2), 94 – 99. <https://doi.org/10.1590/1807-1929/agriambi.v21n2p94-99>
- Lajmi, H. (2024). Strengthening Applications’ Security with Handwritten Arabic Calligraphy Captcha. *8th IEEE International Forum on Research and Technologies for Society and Industry Innovation Rtsi 2024 Proceeding*, 548–553. <https://doi.org/10.1109/RTSI61910.2024.10761297>
- Lawler, C., & Howes, N. (2022). Helping Young Children to Understand Domestic Abuse and Coercive Control: A Professional Guide. In *Helping Young Children to Understand Domestic Abuse and Coercive Control: A Professional Guide*. Taylor and Francis. <https://doi.org/10.4324/9781003206170>
- Lin, J.-W., Wang, C.-Y., Ting, C.-L., & Chang, R.-I. (2014). Font generation of personal handwritten Chinese characters. *Proceedings of SPIE - The International Society for Optical Engineering*, 9069. <https://doi.org/10.1117/12.2050128>
- Ma, T., Du, X., Wu, X., Zhou, Z., Zheng, Y., & Jin, C. (2023). Reading Scene Text with Aggregated Temporal Convolutional Encoder. *ACM Transactions on Asian and Low-Resource Language Information Processing*, 22(11). <https://doi.org/10.1145/3625822>
- Mayasari, Z. M. (2021). Application of fractal principles in redesigning an arabic calligraphy and rafflesia flower motif in Batik Besurek. *Journal of Physics Conference Series*, 1731(1). <https://doi.org/10.1088/1742-6596/1731/1/012029>
- McFarlane, P. (2023). Managing Big Feelings and Hidden Fears: A Practical Guidebook for “Who’s Afraid of the Monster?” In *Managing Big Feelings and Hidden Fears: A Practical Guidebook for “Who’s Afraid of the Monster?”* Taylor and Francis. <https://doi.org/10.4324/9781003386414>
- Mohsen, A. A. (2023). Artistic Signature’s Aesthetic Consistency and Differentiation in Arabic Calligraphy. *Journal of Islamic Thought and Civilization*, 13(2), 70–85. <https://doi.org/10.32350/jitc.132.05>
- Sulistiyowati, E. M., Suherman, W. S., Sukamti, E. R., Sriwahyuniati, F., Budiarti, R., & Pranoto, N. W. (2022). Development of Early Childhood Skills by Guiding Tests in Sports Rhythmic Gymnastics. *International Journal of Human Movement and Sports Sciences*, 10(2), 253–263. <https://doi.org/10.13189/saj.2022.100216>
- Sumayli, A. (2025). Handwritten Arabic Calligraphy Generation: A Systematic Literature Review. *International Journal of Advanced Computer Science and Applications*, 16(3), 822–829. <https://doi.org/10.14569/IJACSA.2025.0160381>
- Yaghan, M. A. J. (2020). Mathematical concepts in Arabic calligraphy: The proportions of the ‘Alif. *Plos One*, 15(5). <https://doi.org/10.1371/journal.pone.0232641>
- Zoizou, A. (2024). A study of feature extraction for Arabic calligraphy characters recognition. *International Journal of Electrical and Computer Engineering*, 14(1), 870–877. <https://doi.org/10.11591/ijece.v14i1.pp870-877>