Corpus Coranicum and Digital Philology: A Methodological Model for Advancing Qur'anic Manuscript Studies in Indonesia

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Abstract

Purpose: This study aims to explore the application of digital philology in Qur'anic manuscript studies, particularly through an analysis of the *Corpus Coranicum* project as a model for critical engagement with early Qur'anic texts. **Methodology:** Employing a qualitative approach based on literature review, this research is combined with a case analysis of two core issues: the orthographic variation in early Qur'anic manuscripts and the presence of the *'Uthmānī* archetype in written form. **Findings:** The findings demonstrate that the digital tools within *Corpus Coranicum* enable more precise and in-depth cross-manuscript textual comparisons. These results reveal orthographic variations based on geographical regions and provide preliminary evidence for the consolidation of the *'Uthmānī* text. **Research Implications:** Implicatively, the study illustrates how digital philology can enrich methodologies in Islamic studies, create opportunities for digital-based academic training, and enhance access to manuscript data. **Originality/Value:** This research offers an original contribution by emphasizing the importance of integrating digital technologies into Qur'anic studies—particularly in Indonesia, where academic contexts have yet to widely develop this approach.

Keywords: Qur'anic studies; digital philology; *Corpus Coranicum.*

Abstrak

Tujuan: Penelitian ini bertujuan untuk mengeksplorasi penerapan filologi digital dalam studi manuskrip Al-Qur'an, khususnya melalui analisis terhadap proyek *Corpus Coranicum* sebagai model keterlibatan kritis terhadap teks-teks awal Al-Qur'an. **Metodologi:** Studi ini menggunakan pendekatan kualitatif berbasis studi pustaka, dikombinasikan dengan analisis kasus terhadap dua isu utama: keragaman ortografi dalam manuskrip awal Al-Qur'an dan keberadaan arketipe Utsmani dalam bentuk tertulis. **Temuan:** Hasil penelitian menunjukkan bahwa alat digital dalam *Corpus Coranicum* memungkinkan perbandingan tekstual lintas manuskrip secara lebih presisi dan mendalam. Temuan ini mengungkap adanya variasi ortografi berdasarkan wilayah dan memberikan bukti awal atas konsolidasi teks Utsmani. **Implikasi Penelitian:** Secara implikatif, studi ini memperlihatkan bagaimana pendekatan filologi digital dapat memperkaya metodologi studi keislaman, membuka peluang pelatihan akademik berbasis digital, dan meningkatkan akses terhadap data manuskrip. **Orisinalitas/Nilai:** Penelitian ini menawarkan kontribusi orisinal dengan menyoroti pentingnya integrasi teknologi digital dalam studi Al-Qur'an, terutama di Indonesia yang konteks akademiknya belum banyak mengembangkan pendekatan ini..

Kata Kunci: studi Al-Qur'an; filologi digital; *Corpus Coranicum.*

INTRODUCTION

In recent years, digital transformation has had a significant impact on the way Islamic sciences are developed, especially in the study of the Qur'an and religious manuscripts (Amir et al., 2023). At the global

level, the digitization of religious manuscripts has opened up wider access for researchers to study sacred texts across regions and time periods (Ross, 2023). However, in Indonesia, the use of digital technology in manuscript studies, particularly Qur'anic manuscripts, still faces various obstacles. A number of digital initiatives have actually been launched, both by the government and research institutions. In 2019, the Lajnah Pentashihan Mushaf Al-Qur'an (LPMQ) of the Ministry of Religious Affairs launched the Southeast Asian Qur'an Manuscript Database, which contains 327 Qur'an manuscripts, 272 printed Qur'ans, 10 digital versions, and 3 Braille versions—all the results of research and digitization over the past five years. In addition, the National Library has recorded the digitization of 1,849 manuscripts as of 2019. Another initiative comes from the Center for Islamic and Community Studies (PPIM) at UIN Jakarta, in collaboration with the University of Hamburg through the DREAMSEA project, which provides a digital repository for manuscripts at risk of extinction in Southeast Asia (Kemenag RI, 2019).

However, even though basic infrastructure is beginning to take shape, mastery of digital philological methods and critical analysis practices for manuscripts is still limited. Studies of Al-Qur'an manuscripts in Indonesia have focused more on artistic and historical aspects or traditional interpretations (Gallop, 2016), rather than on digital data-based philological-critical dimensions. This creates a gap between great academic potential and conventional methodological practices (Rifaldi, 2022).

This situation is exacerbated by limited access to digital infrastructure, a lack of training in textual criticism and paleography, and minimal institutional collaboration that could bridge the gap between traditional Islamic scholarship and modern digital approaches (Brzozowska & Leszka, 2022). Meanwhile, the international community has moved ahead by developing advanced platforms such as *Corpus Coranicum*, which not only serves as a repository of manuscripts but also as a digital laboratory for textual criticism and in-depth intertextual analysis (Iqbal et al., 2025). Unfortunately, the Indonesian academic community has not been actively involved in this discourse. Therefore, it is important and urgent to examine how digital philology approaches—as exemplified by *Corpus Coranicum*—can be applied broadly and critically in the local Indonesian context. This approach is believed to be capable of bridging the gap between the abundant potential of manuscript resources and the need for up-to-date methodological approaches in Qur'anic studies.

Several international studies have highlighted the important role of digital philology in Qur'anic studies. First, there is a growing trend in contemporary studies to use digital approaches to analyze the history of the Qur'anic text with greater precision and comparativeness. Van Putten (2019) demonstrates that orthographic anomalies found in various early manuscripts can serve as evidence for the existence of a written archetype of the Uthmanic Mushaf, rather than being solely transmitted orally. Through a digital approach, he was able to systematically compare orthographic patterns across manuscripts from different regions and periods. A similar approach was adopted by Déroche (2020), who emphasized the importance of digital paleography in reconstructing the visual and material evolution of manuscripts, particularly in identifying mushaf typologies based on script, size, and writing style.

Second, research on orthography and reading variants (*qirāʾāt*) has begun to make extensive use of interactive databases to map the dynamics of the development of the Qur'anic script. Neuwirth et al. (2010), through the *Corpus Coranicum* project, provide a text variant search feature based on words, verses, or root words, enabling researchers to view reading variants across sources and periods. In Southeast Asia, Muhammad (2024b) applied a similar method to examine early Qur'an manuscripts predating Abu Amr al-Dani. He found that the *rasm* of the Qur'an in the early period was more flexible than

commonly assumed within the classical standard framework, and that this dynamic can only be captured through digital comparison tools and detailed visual analysis of manuscripts.

Third, a number of interdisciplinary digital projects have begun to be applied in earnest to analyze the historical and intertextual relationships of the Qur'an with the religious context of Late Antiquity. The Corpus Coranicum project is an important example that combines manuscript data with early interpretations and Jewish-Christian texts, opening up the possibility of deeper intertextual readings (Svensson, 2016). This project not only provides manuscript documentation, but also builds bridges between philological studies, exegesis, and the history of Semitic religions. Lit (2020) even refers to the *Corpus Coranicum* as a digital methodological model that enables Islamic studies to compete epistemologically with other major textual studies, such as the Bible and Midrash. However, although this approach has demonstrated its academic significance globally, its application in the Indonesian context remains very limited and has not yet become an integral part of local manuscript research or curricula.

However, these three categories of research still leave gaps. First, there has been no systematic study evaluating the potential of the *Corpus Coranicum* as a working model in the Indonesian academic context. Second, few studies have linked the development of digital methods to the needs of teaching, academic training, and manuscript literacy in Indonesia. Third, there are very few publications in Indonesia that integrate digital orthographic studies of the Qur'an manuscript as a basis for philological and historical arguments. This gap is what this research aims to address.

Therefore, this study aims to explore how a digital philological approach, highlighting the *Corpus Coranicum* project, can be used as a methodological model for a more critical analysis of Qur'anic manuscripts, especially for Indonesian academics. This study also seeks to demonstrate how orthographic comparison practices and text variant tracking through digital tools can enrich Qur'anic historical studies at both regional and global levels.

The main argument of this article is that the integration of digital philological tools—particularly as developed in the *Corpus Coranicum*—not only enhances the technical precision and scope of Qur'anic manuscript studies, but also offers a structural response to the methodological stagnation often observed in Islamic studies in Indonesia. By enabling systematic access to high-resolution manuscript images, variant readings, and intertextual data, digital philology provides scholars with empirical resources to engage in critical textual analysis beyond normative, exegetical, or apologetic frameworks (Lit, 2020; Neuwirth et al., 2010). This shift reflects more than a technological upgrade—it marks a fundamental epistemological transformation that repositions the Qur'an not solely as a fixed theological object but as a historically transmitted and materially embodied text. As demonstrated by recent works in digital humanities, such as those by Déroche (2020) and Svensson (2016), digitization can function as a mode of "epistemic reorientation," where the production of knowledge becomes more inclusive, comparative, and verifiable. In the context of Indonesia, this model serves not only as a means of democratizing access to sacred texts but also as a strategy for reimagining Qur'anic Studies through globally integrated yet locally rooted academic practices.

RESEARCH METHOD

This study focuses on the analysis of Qur'anic manuscript variants and orthographic features as presented within the digital platform *Corpus Coranicum*. The main unit of analysis is the digital representation of Qur'anic manuscripts—specifically, high-resolution images, metadata, and transcriptions of early codices made available through the platform. These digital surrogates are not

treated merely as technical reproductions of physical texts but as structured scholarly objects that enable philological analysis and textual comparison. In this context, *Corpus Coranicum* itself functions as both a research object and a research tool: it is simultaneously a case of a digital philology project and a source for examining orthographic patterns, textual variants, and codicological data in early Qur'anic manuscripts.

This research adopts a qualitative, literature-based approach, grounded in the principles of digital philology and textual analysis (Kovalev, 2024; Lune & Berg, 2017). It draws upon interpretive frameworks from Qur'anic manuscript studies to examine orthographic features, textual variants, and their representation within a curated digital environment. A qualitative method is particularly appropriate given the historical, comparative, and non-numerical nature of the research questions. Rather than seeking statistical generalizations, this study aims to explore how specific textual forms—such as the omission or inclusion of *alif* or *tā' marbūṭah*—reflect broader developments in Qur'anic transmission (Wansbrough & Rippin, 1977). The use of case studies, including published scholarly analyses and selected manuscript samples, allows for a focused and in-depth examination of how digital tools like *Corpus Coranicum* can be employed to enrich the methodological landscape of Qur'anic Studies in Indonesia.

The primary data for this study were obtained from the Manuscripta Coranica and Text and Variant sections of the *Corpus Coranicum* project. These modules provide high-resolution images, transcriptions, and metadata for a wide range of early Qur'anic manuscripts, dated primarily between the 1st and 4th centuries AH. For analytical purposes, seven manuscript samples were selected based on their chronological relevance, regional diversity, and clarity of orthographic features. These include codices such as Qāf 47, Wetzstein II 1913, Saray 50385, HC.MS.03223, BnF Arabe 6430, MS Add.1113, and Is.1431. Each manuscript was evaluated for its writing of key terms such as *al-Kitāb, Muḥkamāt, Mutashābihāt, al-Rāsikhūn*, and *al-Albāb*, which serve as indicators of adherence to or deviation from the canonical Rasm 'Uthmānī. In addition to primary sources, the study engages with secondary literature—including academic studies by Marijn van Putten, Wildan Imaduddin Muhammad, and others—that exemplify the practical use of *Corpus Coranicum* in Qur'anic textual analysis.

Data were collected through a structured exploration of the *Corpus Coranicum* digital platform, particularly the Manuscripta Coranica and Text and Variant modules. The research process involved the systematic identification and extraction of relevant Qur'anic verses that contained key lexical items, followed by a visual and comparative examination of how these words were rendered across different manuscript witnesses. High-resolution manuscript images, accompanying metadata (e.g., script type, date, location), and documented variant readings were recorded manually using a data collection template designed for textual comparison. In parallel, secondary academic texts were identified through academic databases such as JSTOR, Brill Online, and Google Scholar using citation tracking and keyword searches related to digital philology, Qur'anic orthography, and manuscript studies.

The data were analysed using a comparative textual and orthographic analysis approach, informed by the methodologies of digital philology (Angelelli et al., 2021). The analysis began with the classification of the selected Qur'anic manuscripts by century and regional origin, followed by close examination of the orthographic forms of five key terms across the manuscripts. Particular attention was given to patterns in the use or omission of *alif*, *tā' marbūṭah*, and other consonantal forms. These visual comparisons were contextualized through engagement with philological literature, enabling a deeper understanding of scribal practices and orthographic evolution over time. No quantitative software tools were employed;

rather, analysis was carried out manually using the structured digital features of *Corpus Coranicum* and validated through secondary scholarship.

RESULTS AND DISCUSSION

The Digital Turn in Qur'anic Studies: Challenges and Opportunities

Over the past few decades, the study of the Qur'an as an academic discipline has experienced rapid development in various parts of the world. However, amid this progress, there are various challenges that still hinder the expansion and deepening of this field, especially when compared to the more established field of Biblical studies. Among these challenges are limited access to primary manuscripts, weak textual criticism tools, and the dominance of an apologetic approach that leaves little room for historical or interdisciplinary analysis.

Andrew Rippin (2004) critically describes Qur'anic studies as a field of study that is still searching for its own form and tools. He highlights that Biblical studies have benefited from hundreds of years of manuscript research, archaeology, and critical theory, while Qur'anic studies still rely heavily on traditional interpretive frameworks and canonical commentaries. One of Rippin's main criticisms is the lack of methodological experimentation and reliance on 19th-century philological paradigms, which has led to disciplinary rigidity and slowed the development of these studies in non-Western academic circles.

Fred M. Donner (2008) continued this critique by emphasizing the importance of the material and historical dimensions of the Qur'an, particularly through the study of manuscripts as the primary source of textual transmission and canonization. Significant discoveries such as the *Ṣan'ā* manuscript (1972), which contains numerous reading variants, have shaken assumptions about the absoluteness of the Qur'anic text (Sadeghi & Goudarzi, 2012). According to Donner, such studies require the use of tools from paleography, codicology, and historical linguistics—fields that have been neglected in the Islamic scholarly tradition. This is where digital technology plays an important role in opening access and expanding the scope of analysis.

Criticism and calls for methodological renewal also come from Indonesian academics such as Mun'im Sirry and Fadhli Lukman. Sirry (2019) distinguishes between Qur'anic Studies and Tafsir Studies, where the former encompasses the linguistic, historical, literary, and theological aspects of the Qur'an, while the latter is limited to human interpretations of the text. Sirry encourages modern Qur'anic studies to go beyond classical tafsir traditions and adopt a critical approach to the Qur'an as a historical and revelatory text.

Fadhli Lukman (2021) clarifies this distinction by emphasizing that Qur'anic Studies treats the text as a formal object with special attention to rasm, qirā'āt, writing styles, and the history of transmission, while Tafsir Studies emphasizes the intellectual dynamics in the interpretation of the text by Muslims throughout history. Lukman underscores that in many Islamic educational institutions, these two fields are often merged in the curriculum, leading to confusion regarding the orientation of academic research.

In addressing these challenges, the digitization of manuscripts has become a crucial entry point. According to Bunt (2021), digital technology enables access to rare and fragile texts, visual comparison of verse variants, tracking of orthographic conventions, and reconstruction of transmission networks through textual features.

Techniques such as high-resolution scanning and multispectral analysis reveal information invisible to the naked eye. Digital tools also enable collaborative annotation and global dissemination of

manuscripts previously hidden in closed archives. However, the implementation of this technology is still uneven. Many Islamic institutions in Indonesia have not integrated digital methods into their research agendas.

Manuscript studies remain descriptive and cataloguing, without reaching critical readings such as variant comparison or orthographic analysis. In fact, the lack of academic programs that teach dual skills in manuscript studies and digital technology widens the gap between classical studies and digital humanities (Patrik Svensson, 2016).

Other obstacles come from the ideological realm. Some academics and religious authorities still view textual criticism as a threat to belief in the authenticity and preservation of the Qur'an (Azami, 2003; Muhammad, 2024a). However, as Rippin and Donner have shown, scientific criticism does not necessarily undermine faith; rather, it can enrich understanding of the history and structure of sacred texts.

Digital philology offers a solution to these challenges. This approach enables transparent scientific study without compromising respect for the sanctity of the text. Projects such as *Corpus Coranicum* demonstrate that the Qur'an can be studied in depth, critically, and while still valuing its religious significance. This platform presents various reading variants, manuscripts, and intertextual relationships in a systematic manner, opening up opportunities for more inclusive research and education.

L.W.C. van Lit (2020) in his work *"Among Digitized Manuscripts"* introduces the concept of the dual existence of manuscripts: as physical objects and digital data. He emphasizes that digitization is not merely a technical change but an epistemological transformation in how texts are understood and used. High-resolution scanned manuscripts enable in-depth analysis of script, diacritics, ink, and layout. However, these digital representations are also influenced by editorial choices and interface design, which must be critically evaluated.

On the other hand, François Déroche (2020) emphasizes the importance of material evidence such as ink, parchment, and the writer's hand in reconstructing the history of the transmission of the Qur'an. He shows how traditional codicological approaches can be expanded through digital technology.

When manuscript features such as surah markers or the absence of diacritics are annotated and made searchable online, manuscripts become part of a living corpus that can be traced across time and space. In this context, digital philology does not merely preserve texts, but creates new modes of scholarly inquiry.

Metadata, visualization of variants, and manuscript networks enable more complex and open research. More importantly, this approach provides broader access to scholars in the Global South, such as Indonesia, who have been hampered by distance, cost, and technical limitations.

Thus, digital philology is not a replacement for traditional methods, but a complement that broadens the horizons of scholarship. Qur'anic Studies can be revitalized as a dynamic and relevant academic field in the digital age, provided there is institutional willingness to integrate technology and scientific criticism into curricula and research. This is the conceptual foundation for further analysis in this article, which will examine the *Corpus Coranicum* as a concrete example of the application of digital philology in Qur'anic studies.

Corpus Coranicum as a Model for Digital Philology

The *Corpus Coranicum* project, established in 2007 by the Berlin-Brandenburg Academy of Sciences and Humanities, stands as one of the most sophisticated initiatives at the intersection of Qur'anic Studies and digital philology (BBAW.de, n.d.). Developed under the leadership of scholars such as Angelika

Neuwirth and Michael Marx, the project embodies a critical, interdisciplinary, and accessible approach to the Qur'an as both a sacred scripture and a historical text (Corpus Coranicum.de, 2025). Drawing from centuries of European philological tradition while remaining sensitive to Islamic scholarly frameworks, *Corpus Coranicum* is an exemplary model for how digitized resources can facilitate and deepen the study of Qur'anic manuscripts (Leaman, 2013).

The project's central goal is to provide a scholarly edition of the Qur'an that is critically annotated, historically contextualized, and digitally accessible. Rather than presenting the Qur'anic text as a fixed and finalized product, *Corpus Coranicum* seeks to document its transmission and transformation over time by incorporating manuscript variants, canonical readings *(qirā'āt)*, and intertextual parallels with other *Late Antique* texts (Corpus Coranicum.de, 2025). This approach aligns with the methodological framework of digital philology, which emphasizes transparency, comparability, and the integration of material and textual evidence through digital means.

The *Corpus Coranicum* platform is organized around four key components, each of which contributes to a comprehensive analysis of the Qur'anic text (Akhtar, 2023; Fedeli, 2024). First, the *Manuscripta Coranica* section presents high-resolution images of early Qur'anic manuscripts along with essential metadata such as script type, date, region of origin, and physical dimensions. Many of these images are drawn from the photographic collections of Gotthelf Bergsträsser, Otto Pretzl, and Bernhard Moritz, whose early 20th-century documentation of Qur'anic manuscripts had long remained unpublished. By digitizing and annotating these materials, the project not only makes them widely accessible but also preserves valuable historical records that might otherwise have been lost.

Second, the *Text and Variant* module allows for comparative textual analysis. It enables users to examine the Cairo edition of the Qur'an alongside canonical and manuscript-based variants. Scholars can compare different readings of a verse, identify orthographic or grammatical divergences, and trace how particular textual forms appear across multiple manuscript witnesses. This feature is particularly useful for studying early textual fluidity and the processes through which the Qur'anic text was gradually standardized.

Third, the *Text and Context* feature situates the Qur'an within its Late Antique religious and intellectual environment. It highlights intertextual parallels between the Qur'an and earlier Jewish, Christian, and apocryphal texts, drawing attention to shared motifs, narrative structures, and theological concerns. Rather than reducing the Qur'an to its historical sources, this module invites users to appreciate the Qur'an's participation in broader discursive traditions while maintaining its distinctiveness.

Fourth, the *Lexicon* and related semantic tools provide linguistic analysis of key Qur'anic terms. By offering etymological insights, cross-linguistic comparisons, and historical usage, this component allows researchers to examine the Qur'an's vocabulary within the larger framework of Semitic philology. This is particularly relevant for understanding loanwords, lexical shifts, and the semantic richness of Qur'anic language.

Table 1. Core Features and Scholarly Functions of the *Corpus Coranicum* Digital Platform

No		Description	Main Functions
1	*Manuscripta Coranica*	Displaying high-resolution images of early manuscripts of the Qur'an along with metadata such as script type, date, origin, and physical dimensions.	Supporting paleography studies, manuscript documentation, and preservation of rare archives.
2	Text and Variant	Providing comparisons between the Cairo edition and textual variants of qirāʾāt and early manuscripts.	Analyzing differences in readings and the standardization process of the text of the Qur'an.
3	Text and Context	Comparing the Qur'an with Jewish, Christian, and apocryphal texts of the Late Antiquity.	Examining thematic and narrative connections in the context of interfaith intellectual history.
4	*Lexicon* and Semantic Tools	Providing lexical and etymological analysis of key vocabulary in the Qur'an.	Deepening understanding of the origins, meanings, and contexts of words within the framework of Semitic philology.

Together, these components make *Corpus Coranicum* more than a digital archive. It is a dynamic scholarly environment that supports complex, layered research. The project's integration of manuscript images, textual variants, linguistic data, and historical commentary exemplifies the potential of digital philology to enrich the field of Qur'anic Studies. Moreover, its user-friendly design and open-access policy underscore its commitment to democratizing scholarship.

The methodological contributions of *Corpus Coranicum* are far-reaching. It allows scholars to visualize the evolution of the Qur'anic text, reconstruct the genealogies of variant readings, and explore the relationships between script styles and textual forms. It also promotes collaborative research by making rare manuscripts accessible to scholars regardless of their geographic or institutional affiliation. In doing so, it challenges the traditional centralization of manuscript study and opens new possibilities for global academic participation.

For scholars in Indonesia, *Corpus Coranicum* is particularly relevant. While Indonesia possesses a rich tradition of Qur'anic manuscript production, especially in regions such as Aceh, West Sumatra, Java, and South Sulawesi, systematic studies of these materials remain limited. Access is often restricted to physical archives, and there is a general lack of training in paleographic and philological methods. By engaging with *Corpus Coranicum,* Indonesian researchers can familiarize themselves with the tools and techniques of digital philology and apply them to local materials.

Two recent case studies illustrate how *Corpus Coranicum* can be used in academic research. The first example is the work of Marijn van Putten (2019), *"The Grace of God' as Evidence for a Written Uthmanic Archetype,"* which analyzes shared orthographic peculiarities in geographically dispersed manuscripts. Van Putten argues that these shared features point to a centralized, written exemplar, likely an Uthmanic archetype, from which regional copies were produced. His use of *Corpus Coranicum* to compare orthographic patterns across manuscripts demonstrates the platform's value for historical reconstruction and textual criticism.

The second is Wildan Imaduddin Muhammad's (2024b) article, *"The Discourses of Rasm Uthmani and the Dynamics of Early Quran Manuscripts Prior to Abu Amr al-Dani (d. 444/1053),"* which draws upon early manuscript images from the *Corpus* to examine the evolution of orthographic conventions. By comparing early samples of Surah Āli 'Imrān, he argue that the rasm tradition was more diverse and context-dependent than often assumed, particularly before Abu Amr al-Dani's standardization efforts. This analysis would not have been possible without access to high-resolution manuscript images and metadata provided by *Corpus Coranicum*.

These examples show that *Corpus Coranicum* is not only a repository but also a methodological engine. It empowers scholars to develop new questions, test hypotheses, and engage with the Qur'anic text in more nuanced ways. For Indonesian academic institutions, incorporating this platform into Qur'anic Studies programs would foster greater methodological awareness and global scholarly participation. *Corpus Coranicum* demonstrates what digital philology can achieve when applied to the Qur'an. By integrating textual, visual, historical, and linguistic data into a coherent digital environment, it expands the boundaries of Qur'anic Studies and invites scholars from around the world to contribute.

Case Study of Implementation: Van Putten and Muhammad

The increasing availability of digital resources in Qur'anic Studies has opened new avenues for scholarship that transcend geographical boundaries. For Indonesian scholars, platforms such as *Corpus Coranicum* provide access to early Qur'anic manuscripts, variant readings, and historical data that were once difficult or impossible to consult without international travel or institutional affiliations. The tools of digital philology not only offer improved access but also enable more rigorous and methodologically sound analyses of the Qur'anic text, especially in relation to its manuscript tradition.

Rather than imagining an idealized or large-scale digital infrastructure, this section highlights more practical, research-based approaches to using digital philological tools. It focuses on two concrete examples: the author's own research on the discourse of Rasm Uthmani, and the work of Marijn van Putten on orthographic patterns in early Qur'anic manuscripts. Both studies illustrate how *Corpus Coranicum* can be used to explore textual variation, script development, and questions of standardization in the Qur'anic tradition.

In his groundbreaking article, *"The Grace of God' as Evidence for a Written Uthmanic Archetype: The Importance of Shared Orthographic Idiosyncrasies,"* Marijn van Putten (2019) demonstrates the power of

digital philology in advancing historical-critical studies of the Qur'an. By utilizing the *Corpus Coranicum* platform, he examines the orthography of the phrase *ni'matu Allāh* ("the grace of God") across numerous early Qur'anic manuscripts and identifies consistent patterns in how this phrase is written—specifically the rendering of the final *tā'*. His findings offer compelling evidence for a shared written source and challenge long-standing assumptions that early transmission of the Qur'an was purely orality-based.

Van Putten begins with the observation that the phrase *ni'matu Allāh* occurs repeatedly in the Qur'an and often appears in a consistent orthographic form across a wide array of manuscript witnesses. Rather than dismissing this consistency as coincidental, he interprets it as a sign of deliberate replication. Particularly, he notes how some early manuscripts render the final *tā'* of *ni'mat* as a plain *tā'* (ت) rather than a *tā' marbūṭah* (ة), a stylistic feature that deviates from the standardized spelling found in the modern *Cairo Edition*. The recurrence of this orthographic anomaly in multiple geographically dispersed manuscripts suggests that they may have been copied from a single, authoritative exemplar, presumably the Uthmanic codex.

Such a hypothesis depends on the ability to collate and compare multiple manuscripts side by side. This would have been logistically difficult or even impossible before the advent of digital archives. However, *Corpus Coranicum* resolves this limitation by offering a structured and searchable image archive of early Qur'anic manuscripts, including metadata, transcription layers, and tools for orthographic analysis. These digital affordances allow Van Putten to systematically examine the orthography of specific phrases across codices housed in collections around the world.

Van Putten specifically refers to a number of important manuscript collections available through the *Corpus Coranicum* platform. First, the manuscripts *Berlin, Staatsbibliothek Wetzstein II 1913 (Ahlwardt 305)* and *BnF Arabe 6087* are of particular interest because they date from the second half of the first century Hijri. These manuscripts are the oldest extant textual witnesses of the Qur'an, written in early Hijazi script with minimal vocal notation. This characteristic makes them important evidence in tracing textual evolution and the development of early forms of the mushaf. Second, the *Cambridge Mingana-Lewis Palimpsest* is a unique 7th-century manuscript containing layers of Qur'anic text overlaid with Christian text in Arabic. The Hijazi script used in the lower layer (undertext) has been digitally enhanced to make it clearly legible. This manuscript provides important insights into copying practices, palimpsest dynamics, and changes in orthographic conventions from the early Islamic period. Third, *Saray Medina 1a* from Istanbul shows transitional features between Hijazi and Kufi scripts. Estimated to date from the late first or early second century AH, this manuscript reflects visual and scriptural shifts in the copying of mushafs during the transition between early styles of writing and the more standardized Kufi form. Fourth, *Tübingen, Universitätsbibliothek Ma VI 165*, classified as Kufi B Ia, shows a more stylized and developed form of Kufi. As a typical representation of Qur'anic writing at the end of the first century Hijri, this manuscript represents an advanced stage in the aesthetics and visual codification of the mushaf, which would later become a model for further copying.

Through these collections, Van Putten compiles a comparative dataset of fourteen manuscript witnesses where the phrase *ni'mat Allāh* appears. He then charts the orthographic rendering of the word *ni'mat* in each occurrence, particularly whether it ends in a regular *tā'* or a *tā' marbūṭah*. The results are striking. In the overwhelming majority of cases, the spelling of *ni'mat* remains consistent within each manuscript, and this consistency is shared across several manuscripts—suggesting a high level of fidelity to a written model.

Van Putten contrasts these findings with the *Cairo Edition*, the standardized 1924 print edition of the Qur'an widely used in the Muslim world today. The Cairo edition consistently uses *tā' marbūṭah*, aligning with modern Arabic orthographic norms. However, the discrepancy between this standard and earlier manuscripts highlights how orthographic practices evolved over time—and suggests that earlier scribes may have copied text in a form more reflective of a prototype codex than later editorial norms.

Table 2. The distribution of two spellings of *Ni'mat Allah*

	C	Q	BL	CP	A3	CA1	M	T	SU	SM	S	W	K	B	Zid
Q 2:211	ه			ه								ه	ه		ه
Q 2:231	ت			ت							ت	ت	[ت]		ت
Q 3:103	ت	ت		ت					ت			ت	ت		ت
Q 5:7	ه	ه		ه					ه			ه	ه	ه	ه
Q 5:11	ت	ت	ت	ت								ت	ت	ت	ت
Q 5:20	ه	ه	ه	ه								ه	ه	ه	ه
Q 14:6	ه		ه	ه						ه		ه	ه		ه
Q 14:28	ت		ت	ت	ت	ت				ت		ت	ت		ت
Q 14:34	ت		ت	ت	ت	ت			ت	ت		ت	ت		ت
Q 16:18	ه		ه		ه		ه			ه	ه	ه	ه		ه
Q 16:71	ه		ه							ه		ه	ه		ه
Q 16:72	ت		ت							ت	ت	ت	ت		ت
Q 16:83	ت		ت				ت		ت	ت	ت	ت	ت		ت
Q 16:114	ت		ت		ت		ت		ت	**ه**	ت	ت	ت		ت
Q 29:67	ه		ه					ه		ه			ه		ه
Q 31:31	ت		ت					ت	ت	ت		ت			ت
Q 33:9	ه		ه					ه	ه	ه		ه	ه		ه
Q 35:3	ت		ت					ت	ت	ت		ت	ت		[ت]
Q 37:57	**ه**		ت							ت	ت	**ه**	ت		**ه**
Q 43:13	ه		ه	ه						ه		ه	ه		ه
Q 52:29	ت			ت	ت							ت	ت		ت
Q 68:2	ه									ه		ه	ه		ه
Q 93:11	ه									ه			ه		

The C code in the table above is the writing pattern on the Cairo edition of the Mushaf, or the printed edition of the Mushaf that has been spread in modern times. While the other code is the manuscript of the early mushaf which is scattered in various places. It appears in the table that the majority of the writing pattern of the letter *"ta"* is always consistent. There are only a few verses that are written differently.

According to Marijn Van Putten, the consistency of writing the letter *"ta"* on fourteen different copies of mushaf manuscripts proves at least two things. First, there is one text of the Qur'an which is the main reference for all copies of manuscripts in circulation. Second, the process of copying the mushaf of the Quran is carried out in writing, not through the process of dictation from oral to written. The conclusion of Marijn Van Putten's research indirectly strengthens the circulating narrations about the copying of the mushaf based on the codex of the Mushaf of Uthman.

Based on this orthographic evidence, Van Putten draws two significant conclusions. First, existence of a written archetype: The repeated and shared orthographic peculiarities across geographically and temporally distinct manuscripts support the hypothesis that these copies descend from a common written exemplar. This aligns with early Islamic historical reports about the standardization of the Qur'anic text under the Caliph Uthman ibn 'Affan, during whose reign an official codex was said to have been compiled and disseminated to various regions. Second, primacy of written transmission: Van Putten's findings challenge the often-assumed primacy of oral transmission in early Qur'anic history. While oral tradition undoubtedly played a central role, the consistency of orthographic features in early manuscripts suggests that scribes were primarily copying from written texts. The notion that the early Qur'an was transmitted exclusively through oral channels must therefore be reconsidered in light of this philological evidence.

Beyond its specific findings, Van Putten's research illustrates the transformative potential of digital tools in Qur'anic studies. Without *Corpus Coranicum*, this kind of comparative manuscript analysis would have required extensive travel, specialized permissions, and labor-intensive transcription. Now, researchers can access high-resolution images, detailed codicological metadata, and cross-referencing capabilities from a single digital interface. This technological shift democratizes access to source material and enables a more granular and data-driven approach to questions of textual history.

Moreover, his research serves as a model for how digital philology can bridge the gap between traditional Islamic textual scholarship and modern academic methods. While Islamic tradition emphasizes the preservation of the Qur'an through memorization and oral transmission, Van Putten's findings show how written practices and scribal habits also contributed significantly to that preservation. In doing so, his work invites a more integrated understanding of how oral and written modes of transmission coexisted and interacted in the early Islamic period.

Van Putten's study is a compelling example of how digital philology can enrich and complicate our understanding of Qur'anic textual history. His methodological approach—meticulous orthographic comparison across digitized manuscript witnesses—offers a replicable model for future research. It demonstrates that by engaging closely with the material evidence preserved in early manuscripts, and by leveraging the tools of digital scholarship, we can gain new insights into the processes of textual stabilization, transmission, and canonical formation in the Islamic tradition.

In the article *"The Discourses of Rasm ʿUthmānī and the Dynamics of Early Qurʾān Manuscripts Prior to Abū ʿAmr al-Dānī (d. 444/1053)"*, Wildan Imaduddin Muhammad (2024b) examines the orthographic diversity found in Qur'anic manuscripts dating from the first four centuries of Islam. Drawing upon the digitized resources and high-resolution manuscript images available through *Corpus Coranicum*, he undertakes a comparative analysis of selected folios—primarily from Sūrat Āli ʿImrān and other sūrahs—focusing on how the *rasm* (consonantal skeleton) evolved over time. These tools allow for close textual comparison between different manuscript witnesses and expose the nuanced spelling, diacritical markings, and structural variances that are often obscured in later standardized editions.

This approach challenges the widely held assumption that the *ʿUthmānic* codex, as transmitted through the canonical tradition, represented a fully fixed and universally accepted rasm from its inception. Rather, the evidence points toward a more fluid, context-dependent mode of textual transmission in the formative centuries of Islam.

To explore this hypothesis, Wildan Imaduddin Muhammad analyzed seven early Qur'anic manuscripts produced between the 7th and 10th centuries CE (1st–4th centuries AH). These manuscripts are: first, *Qāf* 47, second, *Wetzstein* II 1913, third, *Saray* 50385, fourth, HC.MS.03223, fifth, *Arabe* 6430, sixth, MS Add.1113 (Cambridge University Library), seventh, Is.1431 (Chester Beatty Library).

Each manuscript was compared against the orthographic principles articulated by Abū ʿAmr al-Dānī and Abū Dāwūd Sulaymān ibn Najāḥ, both of whom contributed to the formal codification of the Rasm ʿUthmānī in the 11th century. The study focused on five specific lexical items that appear in Sūrat Āli ʿImrān: *al-Kitāb, Muḥkamāt, Mutashābihāt, al-Rāsikhūn,* and *al-Albāb*. These words were chosen because their orthographic representation—in particular the presence or omission of *alif*—can serve as a diagnostic marker for whether a manuscript follows the *rasm* or the more phonetic *imlāʾī* tradition.

The manuscripts were categorized into two chronological groups. The first includes those produced in the 7th and 8th centuries (1st–2nd Hijrī), namely Qāf 47, Wetzein II 1913, Saray 50385, and HC.MS.03223. In all these manuscripts, the *alif* in the five selected words was consistently omitted,

adhering closely to the orthographic standards attributed to the *Rasm ʿUthmānī*. This correspondence supports the idea that these manuscripts were either influenced by or precursors to the rasm standard later formalized by al-Dānī and his contemporaries.
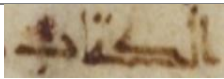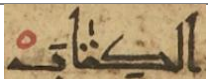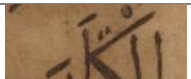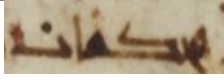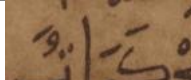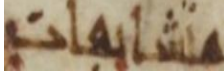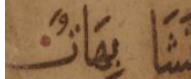
Table 3. Orthographic Comparison of Five Qur'anic Words in Early Manuscripts: Evidence of *Alif* Omission in Accordance with the *Rasm ʿUthmānī*

No	Example	Qaf 47	Ahlwardt 305	Sarayi 50385	HC MS 03223
1	al-Kitāb				
2	Muhkamāt				
3	Mutashābihāt				
4	al-Rāsikhūn				
5	al-Albāb				

In the table above it appears that all the *alif* in the sample words *al-Kitāb, Muhkamāt, Mutashābihāt, al-Rāsikhūn,* and *al-Albāb* was not written. The *alif* discarded in these words is in accordance with the narration of Abu Amr al-Dani and Abu Dawud Sulayman ibn Najah that the alif listed should be discarded as in the Rasm Uthmani.

The second group comprises manuscripts produced in the 9th and 10th centuries (3rd–4th Hijrī), including MS Add.1113, Arabe 6430, and Is.1431. In contrast to the earlier examples, these manuscripts consistently include the *alif* in the same lexical items. This orthographic practice aligns with the *Rasm Imlāʾī*, a phonetic style of writing that conforms more closely to the grammatical and pronunciation norms of Arabic, rather than the earlier consonantal conventions of the rasm.

Table 4. Orthographic Inclusion of *Alif* in Selected Qur'anic Words: Evidence of *Rasm Imlāʾī* in 9th–10th Century Manuscripts

No	Example	MS add.1113	Arabe 6430	IS.1431
1	*al-Kitāb*			
2	*Muhkamāt*			
3	*Mutashābihāt*			

| 4 | *al-Rāsikhūn* | | | |
| 5 | *al-Albāb* | | | |

The chronological shift from a rasm-based to an *imlāʾī*-based orthography suggests that Qur'anic manuscripts produced closer to the time of Abū ʿAmr al-Dānī were, paradoxically, less rigid in adhering to what would later become the canonical rasm. This invites a reconsideration of assumptions about the linearity and fixity of the Qur'anic text's early transmission and instead encourages viewing it as a dynamic process shaped by linguistic, regional, and scribal practices.

These conclusions resonate with the findings of scholars like Marijn van Putten, who has argued that the early transmission of the Qur'anic text was far more diverse than traditionally assumed. Through his analysis of early manuscripts and orthographic patterns, van Putten suggests that while the consonantal skeleton was relatively stable, the finer details of writing—such as vowel placement, diacritics, and orthographic conventions—were subject to considerable variation. He also emphasizes that these early manuscripts often reflect local scribal traditions and practical considerations more than a strict adherence to a unified orthographic doctrine.

Building on van Putten's observations, Wildan Imaduddin Muhammad's research contributes to the growing scholarly consensus that the process of Qur'anic standardization was gradual and context-sensitive. The very existence of divergent practices in the writing of foundational words, such as *al-Kitāb* and *Muḥkamāt*, demonstrates that the boundaries of the rasm were not rigidly enforced in the earliest centuries. Instead, a spectrum of scribal behaviors is evident: some manuscripts exhibit fidelity to early conventions resembling what would become the canonical rasm, while others embrace a more intuitive, reader-friendly phonetic style.

The implications of this study are significant for understanding the Qur'an's material history. The assumption that the *ʿUthmānic* codex was perfectly uniform from its inception is not supported by the manuscript evidence. Rather, the Rasm ʿUthmānī should be understood as a product of sustained scholarly effort over several centuries to retroactively impose a consistent system upon a corpus that was, in practice, far more fluid.

Moreover, this manuscript diversity should not be viewed as a threat to the Qur'an's integrity, but rather as a testament to its vibrant and living transmission. The early Muslim community's engagement with the Qur'an included a range of interpretive, recitational, and orthographic strategies, reflecting a deep commitment to preserving the message while navigating the limitations of early Arabic writing systems.

The comparative manuscript evidence presented by Wildan Imaduddin Muhammad underscores the importance of treating early Qur'anic orthography as a historically situated phenomenon. Tools such as those provided by *Corpus Coranicum* are indispensable for uncovering these layers of textual development. Without them, the rich diversity of the early transmission history risks being flattened into a monolithic narrative that does not align with the material record.

Both studies point to a broader lesson: digital philology empowers researchers to conduct high-level textual analysis without requiring physical access to rare manuscripts. For Indonesian scholars and students, this opens up a space for deeper participation in global academic discourse on the Qur'an. It also

provides a model for incorporating digital methods into thesis writing, classroom assignments, and institutional research programs. Rather than imagining large-scale digitization projects from the outset, it may be more effective to start by equipping students and scholars with the skills and tools to engage with already-available resources such as *Corpus Coranicum*.

Workshops, academic training, and curriculum enhancements can support this goal. Introducing students to the basic features of *Corpus Coranicum,* how to navigate the Manuscripta Coranica section, how to explore variant readings, and how to analyze orthographic patterns, would mark an important shift in the methodological orientation of Qur'anic Studies in Indonesia. Over time, these small but practical steps may encourage greater institutional commitment to digital research and help foster a generation of scholars who are both rooted in Islamic intellectual traditions and fluent in global scholarly methods.

In this light, the value of *Corpus Coranicum* is not only in its vast database but in its potential to serve as a pedagogical and methodological guide for researchers. The Indonesian scholarly community, with its rich Islamic heritage and growing academic networks, stands to benefit from a more systematic and critical engagement with such tools. By learning from existing examples and applying them creatively in their own work, Indonesian scholars can contribute meaningfully to the evolving landscape of Qur'anic Studies.

Discussion

This study identifies three main contributions of digital philology to the study of the Qur'an, reflected in three main sub-findings. First, the digitization of Qur'anic studies opens up new methodological opportunities to overcome the limitations of manuscript access and the stagnation of traditional approaches. The development of digital philology enables critical engagement with manuscripts from historical and philological perspectives, as demonstrated by the emergence of new approaches to rasm, qirā'āt, and the history of textual transmission. Second, the *Corpus Coranicum* project has emerged as an ideal model of digital philological practice, with a modular infrastructure that supports comparative analysis of manuscripts, documentation of reading variants, and tracking of historical context and intertextuality. This platform confirms that digital approaches not only archive but also open up new possibilities in philological studies. Third, the practical application of *Corpus Coranicum* in case studies by Marijn van Putten and Wildan Imaduddin Muhammad shows that these digital tools can be used practically by researchers, including those from Indonesia, to trace orthographic patterns, hypotheses about the Uthmanic archetype, and the diversity of rasm before standardization.

These findings can be linked to several interrelated factors. The consistency of orthographic features, such as the uniform spelling of *niʿmat Allāh* in fourteen manuscripts, supports the hypothesis of a common written archetype—possibly related to the Uthmanic codex. This suggests that the transmission of the Qur'an was initially not only oral but also involved reference to written examples. Conversely, variations in the spelling of words such as *al-Kitāb* and *al-Rāsikhūn* between early and late manuscripts indicate a gradual standardization process influenced by regional scribal practices and evolving Arabic orthographic conventions. These patterns would not have been identifiable without the ability to visually compare manuscripts in a controlled digital environment. The shift in method—from relying on printed editions or oral narratives to the use of paleographic evidence—is a direct result of the tools offered by the *Corpus Coranicum*.

When compared to previous research, this study aligns with global trends in the use of digital philology for Qur'anic studies, while expanding its scope in the Indonesian context. First, Van Putten's

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(2019) work has demonstrated that digital approaches enable precise cross-manuscript orthographic analysis, ultimately supporting the existence of written archetypes of the Uthmanic Mushaf. This study confirms these findings through a case study of *ni'mat Allāh*, which shows orthographic consistency in fourteen manuscripts from various regions and periods. Second, as demonstrated by Neuwirth et al. (2010) through the *Corpus Coranicum* project, interactive databases enable the systematic tracking of reading and orthographic variants. This is also reflected in Wildan Imaduddin Muhammad's (2024b) analysis of variations in *rasm* in Surah Āli 'Imrān, which demonstrates the flexibility of written forms prior to the standardization of Abu Amr al-Dani. This study expands on this approach by showing how the *Text & Variant* feature in *Corpus Coranicum* can be practically used for comparative research by Indonesian scholars.

Third, the findings in this article confirm the importance of intertextual and historical models such as those developed in the *Corpus Coranicum* project (Patrik Svensson, 2016), which combines the study of manuscripts, early exegesis, and Late Antique religious texts. By demonstrating how this platform can be used to reconstruct the history of transmission and variation of the Qur'anic text, this study echoes Lit's (2020) view that digital philology enables Islamic studies to compete methodologically with other major textual traditions such as the Bible and Midrash. However, a new dimension offered by this study is the emphasis on the relevance of the *Corpus Coranicum* as a digital methodological model that can be adapted to local needs in the Global South, particularly in Indonesia. Thus, in addition to strengthening previous research findings, this article also provides a new direction for the development of digital technology-based Qur'an manuscript studies in the Indonesian context, which has so far not fully utilized it.

Theoretically, the results of this research reinforce the view that sacred texts are not static artifacts, but dynamic traditions shaped by historical processes of transmission, standardization, and the role of copyists. The Qur'an, although preserved and revered as a unified text, shows clear evidence of historical variation when studied at the manuscript level. Several studies have proven this. Van Putten (2019) uncovered consistent orthographic anomalies across early manuscripts as evidence of the existence of a written Ottoman archetype, which cannot be explained solely through oral transmission. Gözeler's research (2017, 2018) on Qur'an manuscripts in the Vatican Library also reveals extensive physical and content variations, including writing styles, ornamentation, and presentation formats, reflecting the evolution of manuscript form and function across different social contexts. Radiocarbon evidence (Aghaei et al., 2023) and the discovery of early manuscripts such as Sana'a 27.1 (Hilali, 2010) further strengthen the claim that the history of the writing and canonization of the Qur'an is complex and non-uniform.

In this context, digital philology offers an important set of tools for interpreting this complexity. Projects such as the *Corpus Coranicum* enable visual and systematic analysis of textual variants, opening up the possibility of directly comparing readings, orthography, and verse structure across manuscripts from different regions and periods (Neuwirth & Hartwig, 2021). Thus, digital philology not only reveals textual evidence but also uncovers the historical logic behind the standardization and development of manuscripts. As exemplified by Déroche (2021), digital-based paleographic approaches also aid in the reconstruction of the visual history of the mushaf, including in understanding the social and liturgical functions of manuscripts.

Socially, this development marks a shift in how Islamic intellectual heritage can be accessed and studied. No longer entirely dependent on physical archives or traditional teacher-student relationships, Qur'anic studies are now critically mediated through digital platforms that enable collaboration and comparison across institutions and countries. Studies on this topic indicate that digital platforms such as

the online portal of the Prophet's Mosque and cloud-based Qur'an applications have enhanced access, flexibility, and cross-cultural participation in Qur'anic learning (Zohdi et al., 2024). Moreover, social media and digital strategies have been employed to disseminate Qur'anic exegesis to a broader and more linguistically and geographically diverse audience (Lukman, 2022, 2024).

Ideologically, this approach reflects a transformation in Islamic scholarly authority: from a previously centralized and exclusive form toward a more democratic and participatory one. By providing open access to manuscripts and critical analysis methods, digital philology such as *Corpus Coranicum* disrupts traditional epistemic exclusivity and opens up opportunities for academics from the Global South, including Indonesia, to participate in the global production of scholarly discourse on the Qur'an. This change marks a shift in authority in Qur'anic studies from traditional hierarchical institutions toward a more open, inclusive, and digitally collaborative model of knowledge (Azaiez & Arfa-Mensia, 2023).

In Indonesia, this shift is evident in the emergence of thematic and contextual interpretations involving academics from non-religious backgrounds, as well as in the positive response to scientific and critical methods that were previously considered foreign (Lilik Ummi Kaltsum & Amin, 2024; Zubaidi, 2019). A similar trend is observed in Iran, where contemporary Qur'anic studies have begun to incorporate foreign languages and Western methodological frameworks into traditional discourse (Karimi-Nia, 2012). Despite ongoing resistance, Islamic universities in Indonesia demonstrate openness to Western approaches, though they must navigate complex curriculum politics (Rahman & Nurtawab, 2024).

The role of digital technology in accelerating this shift is also increasingly prominent. Bibliometric analysis shows a sharp increase in publications and international collaboration in Qur'anic studies from countries such as Indonesia, Malaysia, and Turkey, as a result of the integration of contemporary technology (Nirwana AN et al., 2024). Digital platforms not only enhance access to primary sources but also promote diversification of methods, data visualization, and pedagogical innovation. Despite challenges such as scientific literacy and public skepticism (Abdullah et al., 2025), the direction of this shift indicates that future Qur'anic studies will increasingly be influenced by transnational, interdisciplinary, and digital approaches.

Despite its advantages, the use of digital philology is not without limitations. While the *Corpus Coranicum* improves access to early witnesses of the Qur'an, its Western institutional basis may influence how data is framed, annotated, and interpreted. The platform's design reflects European academic epistemological and methodological priorities, which are not entirely aligned with Islamic epistemology or pedagogical needs in Indonesia. This is in line with critiques of digital humanities in general, which point to epistemological biases in the selection and development of digital tools, as in the study by Lassen et al. (2024), which found algorithmic injustice in the performance of Named Entity Recognition in Denmark, potentially excluding certain groups from knowledge production. Furthermore, scholars such as Chavanayarn (2024) and Nichols (2013, 2020) point to tensions between quantitative and aesthetic-critical approaches in digital humanities, where technical approaches often dominate and undermine the reflective exploration characteristic of the humanities. In the context of *Corpus Coranicum*, this can be seen in the way text variants are visualized or manuscript structures are annotated, which prioritizes technical readability over more contextual cultural or spiritual interpretations in the Islamic scholarly tradition.

Criticism has also been raised regarding how the data collection process in digital humanities is not merely an initial technical stage, but rather part of the epistemic process itself (Ehrlicher & Lehmann, 2021). Digital representations of manuscripts, such as in the *Corpus Coranicum*, are the result of a series of editorial decisions, interface designs, and curatorial priorities that are not epistemologically neutral

(Martino, 2020; Štokov, 2025). Reliance on a single platform also poses the risk of homogenizing methods. However, as Svensson (2013) and Belyak (2021) remind us, digital humanities must maintain diversity of approaches and open space for contextual local development. In the case of Indonesia, these challenges are exacerbated by uneven digital infrastructure and technical literacy that is not yet standard in Islamic educational institutions. Therefore, the use of platforms such as *Corpus Coranicum* must be done with contextual awareness, critical reflection, and the involvement of local epistemology so that it does not merely become a technological transplant, but rather a sustainable and equitable transformation of knowledge.

To overcome these challenges and ensure that the adoption of digital philology is not merely a transplant of technology from the center to the periphery, but rather part of an equitable epistemological transformation, context-based strategic steps are needed. Indonesian universities and Islamic higher education institutions need to integrate digital philology training into the Qur'anic Studies curriculum, including skills in manuscript analysis, paleographic reading, and critical digital methodologies. This integration is not merely a matter of technical transfer, but an effort to build digital literacy that is in line with Islamic epistemology and Indonesian pedagogical needs.

In addition, collaboration between institutions—such as Islamic universities, Islamic boarding schools, and manuscript study centers—needs to be facilitated to form a research ecosystem that can adaptively and selectively utilize platforms such as *Corpus Coranicum*. In the future, this model can be developed into an independently curated regional digital platform with a more contextual approach and annotation. In this regard, support from the Ministry of Religion is crucial, both in terms of funding for research and translation of guidelines, as well as the development of digital literacy infrastructure for Islamic scholars. These efforts will position Indonesia not only as a user but also as a producer of digital knowledge in global Qur'anic studies—with local sensitivity and a strong epistemological awareness.

CONCLUSION

This article has demonstrated the methodological potential of digital philology for advancing Qur'anic manuscript studies, particularly through the case of *Corpus Coranicum*. By analyzing both the platform's technical features and two practical case studies—Marijn van Putten's research on *ni'mat Allāh* and Wildan Imaduddin Muhammad's comparative study of *rasm* variation in Surah Āli 'Imrān—it becomes clear that digital tools can offer a structured, replicable, and accessible approach to textual criticism. These tools not only enhance manuscript-based research but also provide new models for Islamic scholarship in regions where access to physical manuscripts has historically been limited.

The findings confirm that digital philology enables scholars to trace orthographic patterns, identify textual variants, and test historical hypotheses with greater empirical clarity. Moreover, by situating these tools within the context of Qur'anic Studies in Indonesia, the article highlights how global digital infrastructure can support localized academic development. Platforms like *Corpus Coranicum* can serve as methodological bridges—connecting Indonesian scholars to global discourses while encouraging critical engagement with their own manuscript heritage.

However, this study also has several limitations. First, the analysis was limited to two case studies and did not include Qur'anic manuscripts from Indonesia. As a result, the findings cannot speak directly to the textual features or transmission history of Southeast Asian Qur'anic codices. Second, the research focused solely on textual analysis and platform functionality; it did not involve fieldwork, interviews, or user-based evaluation of how Indonesian scholars currently engage with digital philological tools. Third,

the study did not assess or compare other emerging platforms—either international or local—that may offer similar functionalities.

Future research could address these gaps by conducting field studies in digital pesantren or Islamic universities to examine how Qur'anic manuscript studies are taught, and whether tools like *Corpus Coranicum* are known, accessible, or applicable in those settings. Scholars might also explore collaborative training programs that build digital literacy and promote the adaptation of global resources to local epistemologies. Ultimately, the integration of digital philology into Qur'anic Studies in Indonesia will require not only access to tools, but also pedagogical innovation, institutional support, and sustained research engagement.

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