

Digital Takhrij Hadith as Islamic Digital Humanities

Reconstructing Epistemic Authenticity and Transmission in the Digital Age

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Abstract

This study examines Digital Takhrij Hadith through the lens of Islamic Digital Humanities (IDH), proposing an epistemic framework for verifying and preserving hadith authenticity in the digital era. Using a systematic literature review and interpretative digital analysis, it explores how digital infrastructures—such as metadata provenance, semantic modeling, and AI-assisted verification—extend the classical logic of *isnād*, *matn*, and *amāhah*-*naql*. The proposed Digital Takhrij Epistemic Model (DiTEM) unites epistemological integrity, ontological coherence, and ethical accountability to ensure trustworthy digital transmission of hadith. Findings show that digitization, when guided by Islamic epistemology, enhances access and scholarly collaboration without compromising authenticity. Rather than replacing traditional scholarship, digital takhrij revitalizes it, transforming digital platforms into ethically grounded ecosystems of *‘ilm*. This synthesis demonstrates that digital technology can serve not as disruption but as *ihyā’ al-‘ilm*—the revival of sacred knowledge through responsible innovation.

Keywords: digital takhrij hadith, Islamic digital humanities, hadith authenticity, epistemic reconstruction, metadata and *isnād*

Introduction

The intersection of Islamic scholarship and digital technology represents one of the most transformative shifts in the study of religious texts in the twenty-first century. Within this evolving landscape, hadith studies—traditionally grounded in oral transmission, meticulous verification, and classical textual analysis—are undergoing rapid digital transformation. Over the past decade, the digitization of hadith literature has revolutionized how scholars, students, and the general public access and engage with Prophetic traditions. Digital repositories such as Al-Maktabah al-Shāmilah, Dorar.net, and Jamiʿal-Kutub al-Tisāh have made thousands of hadiths searchable within seconds, bridging centuries of Islamic intellectual heritage with the immediacy of digital access. This transformation reflects a broader cultural shift within the humanities, where digital technology has become a key tool for preservation, retrieval, and analysis of religious knowledge (Fatmawati, 2025).

However, the increasing reliance on digital platforms introduces new epistemological and ethical questions. While these tools democratize access to sacred texts, they also risk detaching hadith scholarship from its traditional scientific foundations—particularly the verification methods rooted in *isnād* (chain of transmission) and *matn* (content) criticism. The science of *takhrīj al-Ḥadīth*, which historically ensured the authenticity of each narration through a rigorous analysis of its sources, transmitters, and contexts, faces challenges when transposed into digital infrastructures that prioritize speed and quantity over depth and verification. This tension between accessibility and authenticity constitutes the central dilemma of the digital age of hadith scholarship.

Existing research on hadith digitization has primarily focused on issues of usability, data management, and accessibility rather than epistemic preservation. Bahrudin, Suliaman, and Adnan (2023) conducted a systematic literature review covering hadith authentication studies between 2000 and 2021, finding that most digital efforts focus on technical search optimization rather than methodological equivalence to classical *takhrīj* practices. Similarly, Majid and Majid (2024) explored innovations in hadith research using digital media, noting the growing trend of educational apps and online repositories but emphasizing the lack of epistemological coherence with classical Islamic standards. These studies collectively demonstrate that digitalization has succeeded in expanding access but has yet to engage deeply with the theological and philosophical dimensions of authenticity and transmission.

In the field of pedagogy, Othman et al. (2024) demonstrated how digital tools enhance engagement in hadith learning environments, enabling interactive discussions and improved comprehension among students. Yet, the authors also caution that such innovations risk oversimplifying the *ʿilm al-Ḥadīth* tradition by neglecting its analytical rigor and ethical safeguards. Meanwhile, Sulistio, Ramadhan, and Abdurachman (2024) examined the use of machine learning for hadith verification, offering a technical model that detects patterns in transmission chains and linguistic features. While promising, their approach exemplifies a purely computational logic detached from the moral and epistemic principles

of Islamic scholarship. These contributions underscore the current fragmentation between technological innovation and the foundational epistemology of hadith sciences.

This disconnect points to a larger theoretical absence within Islamic studies: the lack of integration between digital humanities (DH) frameworks and the specific epistemological traditions of Islamic scholarship. Zadeh (2016), in her seminal article *Digital Humanities and Islamic and Middle East Studies* published by Oxford University Press, notes that despite the global expansion of DH, Islamic studies has remained marginal to its discourse. She argues that digital humanities in Western academia often emphasize computational analysis and data visualization, while Islamic intellectual traditions focus on transmission, verification, and moral responsibility. Bridging these paradigms requires not only technological innovation but also a critical rethinking of what constitutes “knowledge” and “authenticity” in a digital context.

Herein lies the potential of what can be termed the Islamic Digital Humanities (IDH) framework—a conceptual synthesis that positions Islamic textual traditions within the epistemological principles of digital humanities while preserving their theological and moral integrity. Solihin and Rahman (2025), in their study *E-Research in Hadith: Practices and Critiques Using Al-Maktabah Al-Syānilah*, highlight how digital tools are reshaping research practices but warn against reducing sacred knowledge to mere datasets. They propose that Islamic digital projects must be designed not just for functionality but for *niyyah al-ilm* (intention in knowledge) and *amānah al-naql* (ethical transmission). This perspective forms the basis of IDH: a field that recognizes digital scholarship as both a technical and spiritual act, wherein metadata, ontology, and textual structures parallel the classical principles of *isnād*, *matn*, and *ʿadl al-ruwāt* (narrator reliability).

By reframing digital *takhrij* hadith through the lens of Islamic Digital Humanities, this study situates the digitalization of hadith as a continuation rather than a rupture of the Islamic scholarly tradition. Digital *takhrij* is thus understood not simply as archiving or indexing, but as an epistemic process that reactivates the chain of transmission within digital networks. Each metadata entry—linking a text to its source, editor, publication, and verification—serves as a modern analog to the *isnād* chain. This parallel invites a new methodological approach that integrates digital ontology with classical epistemology, creating what may be described as a “Digital *Isnād* Framework.” Such integration not only safeguards authenticity but also revitalizes the ethical dimension of knowledge transmission in the age of information.

Furthermore, positioning hadith digitization within the broader field of digital humanities opens opportunities for interdisciplinary dialogue. The digital humanities movement, as articulated by scholars such as Svensson (2021) and Fiormonte (2017), emphasizes not only the technical encoding of texts but also their interpretative, cultural, and ethical dimensions. Within an Islamic context, this implies that digital scholarship must reflect *maqāsid al-sharīʿah* (the higher objectives of Islamic law) in ensuring accuracy, transparency, and intellectual integrity. Applying DH principles to hadith studies allows for the development of interoperable databases, algorithmic authentication systems, and multilingual

platforms that enhance accessibility while maintaining scholarly accountability.

Nevertheless, the digital turn also exposes hadith scholarship to new risks. The proliferation of unverified online hadiths, copy-paste religious content, and algorithmically generated misinformation threatens to distort the epistemic fabric of Islamic knowledge (Hasanah & Hifni, 2024). Without clear standards for data verification and scholarly oversight, digital platforms may unintentionally contribute to the spread of *mawḥū* (fabricated) traditions. Therefore, scholars must reassert the foundational principles of *takhrij* within the digital environment—ensuring that authenticity remains both a technical and ethical criterion.

This study responds to these challenges by proposing a conceptual and methodological bridge between classical hadith scholarship and contemporary digital humanities. Employing a systematic literature review and interpretative analysis, it reinterprets digital *takhrij* hadith as a form of Islamic digital epistemology. The proposed Digital Takhrij Epistemic Model (DiTEM) aims to map the parallels between classical verification systems and digital metadata architecture, demonstrating how data ontology, provenance tracking, and textual encoding can function as modern equivalents of *isnād* validation. In doing so, this research seeks to demonstrate that digital technology, when grounded in Islamic epistemological ethics, is not a threat to authenticity but an extension of the Qur'ānic imperative of *āfāal-ilm*—the preservation of knowledge.

In sum, the integration of hadith studies within the framework of Islamic Digital Humanities (IDH) provides a new lens for understanding the role of technology in preserving the intellectual and spiritual integrity of Islamic knowledge. It positions digital *takhrij* as both a scholarly and devotional act—a process of verification that upholds the sanctity of transmission while embracing the affordances of digital modernity. By bridging the classical and the contemporary, this approach envisions the digital sphere not as a rupture in tradition, but as its continuation in a new epistemic form—an *ihyā' al-ilm al-dijitāl* or the digital revival of Islamic knowledge.

Theoretical Framework and Methodology: Islamic Digital Humanities (IDH): Principles and Paradigms

The emergence of Digital Humanities (DH) as an interdisciplinary field has fundamentally transformed the way scholars approach textual traditions, cultural heritage, and the philosophy of knowledge. Broadly defined, digital humanities refer to the application of computational tools and digital infrastructures to the creation, analysis, and preservation of humanistic knowledge (Svensson, 2021). However, as the field matured within Euro-American academic contexts, its epistemological foundations remained largely secular and technocentric, emphasizing efficiency, data representation, and quantitative analysis. In contrast, Islamic intellectual traditions have long viewed knowledge (*ilm*) as an ethical and spiritual pursuit, governed by divine intentionality (*niyyah*) and transmission ethics (*amānah al-naql*). Bridging these epistemic worlds demands a new theoretical synthesis—

what contemporary scholars have begun to term the Islamic Digital Humanities (IDH) paradigm (Zadeh, 2016; Solihin & Rahman, 2025).

Conceptualizing Islamic Digital Humanities (IDH)

Islamic Digital Humanities can be defined as the study and application of digital technologies in ways that preserve, represent, and expand Islamic knowledge traditions according to their ontological and ethical principles. While digital humanities generally deal with computational processing of humanistic texts, IDH situates these digital operations within the spiritual and epistemic ethos of Islam. As Zadeh (2016) argues in her pioneering work *Digital Humanities and Islamic and Middle East Studies*, digital technologies must not merely serve as tools for textual manipulation but as extensions of interpretive and ethical traditions that define what knowledge is and how it should be transmitted. This approach reframes the digital from a neutral medium into a sacred vessel of *‘ilm*, where preservation and authenticity remain inseparable from technological design.

The core distinction between DH and IDH lies in their ontological assumptions. In DH, information is treated as discrete data to be processed, while in IDH, knowledge is relational, continuous, and imbued with barakah (divine grace). The digital scholar, therefore, is not simply a data analyst but a custodian (*ḥāfiẓ al-‘ilm*), bound by ethical accountability in the management of textual and cultural memory. This conceptual expansion transforms digital scholarship into a *ta’abbudī* (devotional) act, resonating with the Qur’ānic injunction to “read in the name of your Lord who created” (Qur’ān 96:1). Hence, IDH integrates technical literacy with theological consciousness, uniting epistemic integrity and digital innovation.

The Epistemological Foundations of IDH: From Isnād to Metadata

At the heart of hadith studies lies the epistemological structure of *isnād*—a rigorous system of verifying chains of transmission that underpins Islamic notions of textual authenticity. Classical scholars such as Ibn al-Ṣalāḥ and al-Khaṭīb al-Baghdādī emphasized that knowledge in Islam is not validated merely by content but by lineage: who transmitted it, under what conditions, and with what moral integrity. This intricate web of narrators (*ruwāt*) forms the epistemic backbone of *‘ilm al-Ḥadīth*, functioning as an organic network of data provenance centuries before modern database theory.

In the digital age, *isnād* offers a conceptual model for understanding metadata—the data that describes data. Metadata functions to ensure the traceability, authorship, and integrity of digital objects, much as *isnād* ensures the authenticity of transmitted texts. The epistemic parallel between *isnād* and metadata provides a powerful framework for reimagining digital *takhrīj al-Ḥadīth*. Each metadata field—such as author, editor, publication source, and timestamp—can be seen as a digital *rāwī* (narrator), participating in a chain of digital transmission that preserves the *‘adl* (reliability) and *ittiṣāl* (continuity) of

information.

Solihin and Rahman (2025) emphasize that when applied to hadith databases, metadata becomes not only a technical descriptor but a theological safeguard. For instance, ensuring that a hadith entry includes its original *masādir al-aṣliyyah* (primary sources) reflects the Islamic principle of *tahqīq* (textual verification). Similarly, cross-referencing different hadith collections using digital ontologies mirrors the practice of *takhrīj*—tracing the textual lineage of a narration across canonical works. By translating classical verification categories into digital architectures, IDH allows the structure of digital knowledge systems to embody the epistemic ethics of Islam.

Ontology and the Sacred Architecture of Digital Knowledge

Ontology in digital humanities refers to the structured representation of relationships between concepts and entities. In the context of Islamic scholarship, ontology acquires a dual meaning: it describes both the structure of knowledge and its metaphysical grounding in divine reality. As Al-Faruqi (1982) and Nasr (1993) have argued, knowledge in Islam is never value-neutral; it exists within a hierarchy that begins with God as the ultimate source of truth. This ontological orientation fundamentally redefines how digital systems should be designed to represent and relate Islamic knowledge.

Within Digital *Takhrīj al-Ḥadīth*, ontology provides a framework for encoding the relationships between *isnād*, *matn*, and *masādir*. For example, in digital databases like Dorar.net or Shamela.ws, an ontological schema can link each narration not only to its textual content but to its ethical chain—identifying its reliability status (*ṣaḥīḥ*, *ḥasan*, *ḍaʿīf*), its narrators, and their biographical entries. This creates a multi-layered web of digital relationships that reflects the *ʿilm al-rijāl* methodology. Thus, ontology in IDH is not merely a semantic tool but an epistemic mirror—a digital reflection of the interconnectedness of sacred knowledge.

Ethical and Spiritual Dimensions of Digital Scholarship

An essential principle of IDH is that digital scholarship must uphold the spiritual ethics (*akhlaq al-ʿilm*) of Islamic knowledge production. The Prophet Muhammad’s (peace be upon him) statement, “Convey from me, even if only one verse,” encapsulates the responsibility of transmitting truth without distortion. In the digital realm, this translates into principles of data integrity, citation ethics, and transparency. Zadeh (2016) emphasizes that digital projects dealing with Islamic materials carry an added moral weight because they participate in shaping the collective memory of the ummah.

Therefore, digital hadith projects must embody *amānah al-ʿilm*—the trust of knowledge. This includes ensuring accuracy in data entry, providing verifiable source references, and maintaining scholarly oversight. In this way, IDH extends beyond technical protocols to encompass ethical design. As Fatmawati (2025) suggests in her study on Islamic education digitalization, technological innovation in religious contexts must align with the

maqāṣid al-sharīʿah—the preservation of religion, intellect, and truth. The same principle applies to hadith digitization: digital *takhrīj* is not merely about convenience but about sustaining epistemic integrity through technology.

The Paradigmatic Synthesis: From Classical Epistemology to Digital Ontology

Drawing from these conceptual layers, the Islamic Digital Humanities Paradigm (IDH-P) can be summarized as a triadic model integrating epistemology (*isnād*-based authenticity), ontology (structured digital relationships), and ethics (*amānah al-ʿilm*). This paradigm asserts that digital systems must do more than replicate texts—they must reconstitute the ethical logic that sustains Islamic scholarship.

In the specific case of Digital *Takhrīj al-Ḥadīth*, this framework enables what may be called the Digital Takhrij Epistemic Model (DiTEM), which maps the parallel structure between classical *takhrīj* processes and digital data architecture:

Classical Concept	Digital Equivalent	Epistemic Function
<i>Isnād</i> (chain of transmission)	Metadata and provenance chain	Establishes source authenticity
<i>Matn</i> (textual content)	Digital corpus and textual encoding	Represents narrative meaning
<i>Masādir al-aṣliyyah</i> (primary sources)	Linked open data & citation networks	Enables verification and cross-referencing
<i>ʿilm al-rījāl</i> (biographical validation)	Author and editor profiles	Verifies reliability of digital contributors
<i>Tahqīq al-naṣṣ</i> (critical verification)	Algorithmic validation and peer-review metadata	Ensures textual integrity
<i>Amānah al-naql</i> (ethical transmission)	Data transparency and citation ethics	Preserves moral integrity of knowledge

This table illustrates that digital infrastructures can embody classical Islamic epistemology when designed within the IDH paradigm. The DiTEM framework thus provides a theoretical foundation for constructing interoperable hadith databases that respect both scholarly rigor and ethical accountability.

Toward an Epistemic Ecology of Islamic Digital Knowledge

The ultimate goal of the IDH paradigm is to establish an epistemic ecology—a living digital environment where knowledge is dynamically preserved, authenticated, and shared according to Islamic principles. This ecology envisions scholars, developers, and institutions as co-participants in a *sharīʿah*-aligned digital culture. Within such an environment, the role of the digital scholar mirrors that of the *muḥaddith*: to curate, verify, and transmit knowledge responsibly.

By grounding digital methodologies in classical epistemology, IDH transcends the binary of tradition versus modernity. It demonstrates that digitization, when ethically and philosophically aligned, becomes not a rupture in Islamic scholarship but its continuation in another form—a revival of knowledge through technology (*ihyā' al-'ilm al-raqamā*). This framework not only supports the preservation and authentication of hadith but also offers a model for digitizing other branches of Islamic scholarship—Qur'anic studies, fiqh, and tafsīr—within an epistemologically coherent digital paradigm.

This study employs a Systematic Literature Review (SLR) combined with an Interpretative Digital Humanities Analysis (IDHA) to examine how the epistemological principles of *takhrij al-Ḥadīth* are recontextualized within digital infrastructures. The SLR approach was used to collect and synthesize peer-reviewed studies on hadith digitization, Islamic epistemology, and digital humanities published between 2016 and 2025, retrieved from databases such as Scopus, SpringerLink, and Oxford Academic. The inclusion criteria focused on works addressing digital verification, metadata, and epistemic authenticity in Islamic knowledge systems.

The analytical process followed three stages: identification, screening, and thematic synthesis, adopting elements of the PRISMA model. The Interpretative Digital Humanities Analysis (IDHA) component was applied to interpret how digital platforms—such as Al-Maktabah al-Shāmilah and Dorar.net—reflect or diverge from classical epistemological models of *isnād* and matn verification. This interpretative synthesis bridges classical hadith scholarship with digital knowledge paradigms, framing Digital Takhrij Hadith not merely as a technical process but as an epistemic and ethical act aligned with the principles of *'ilm*, *amānah al-naql*, and *āfā' al-'ilm* in Islamic intellectual tradition.

The Role of Digitalization in Hadith Accessibility

Digitization has transformed the accessibility of hadith in profound ways—facilitating not only the retrieval and reading of texts but also the democratization of Islamic scholarship. According to Hidayah and Musaddad (2025), digitalisasi hadis functions as an epistemic gateway that opens broader access to classical sources, enabling inclusive engagement with hadith texts through web-based repositories such as Dorar.net, Shamela.ws, and HadithEnc.com. These platforms utilize keyword indexing, thematic categorization, and multi-language translation, which have significantly enhanced usability for non-Arabic speakers and researchers alike.

Recent developments have also introduced semantic field modeling to structure thematic hadith databases. Ghazali, Ghafar, and Ahmad (2025) demonstrated that applying semantic field theory in *āfā' al-Bukhārī* improves the coherence of thematic classification and retrieval. This approach supports Digital Takhrij by linking matn (textual meaning) to contextual themes, mirroring the epistemic relationship between *isnād* and matn found in classical methodology. In effect, digitization reconfigures hadith accessibility into a multi-layered process—searchable, interpretable, and ethically traceable.

Moreover, Alkalifah and Rassam (2025) proposed a secure blockchain-based model for storing and verifying digital hadiths, ensuring authenticity through scholar-authenticated consensus using Hyperledger Fabric. This architecture parallels the *isnād* principle of verified transmission, showing how classical epistemology can inform modern data security practices. Through these innovations, digital hadith projects have transcended mere archiving, positioning accessibility as an epistemological act that preserves both knowledge and integrity.

Challenges of Hadith Digitization

Despite these advancements, digitization also introduces complex challenges related to data integrity, authenticity verification, and scholarly supervision. Hidayah and Musaddad (2025) noted that the proliferation of unverified hadith apps has led to epistemic noise — the spread of inaccurate or forged narrations through unregulated digital channels. This challenge aligns with the concern raised by Abbas (2014) regarding the ease of disseminating unverified narrations on social media, which risks undermining the sanctity of prophetic knowledge.

A core issue lies in the automation of *isnād* verification. As Sani and Abdulmumini (2025) explain, artificial intelligence (AI) offers tools to analyze narrator data and textual coherence, but the epistemic reliability of such algorithms remains contested. While AI can accelerate verification by identifying linguistic anomalies and syntactic inconsistencies, it cannot fully replicate the *ʿadl* (moral integrity) and *ʿabā* (precision) assessments traditionally performed by hadith scholars (Ahmed & Anas, 2025). Thus, the challenge is not only technological but also epistemological—how to ensure that digital systems embody *tahqīq al-naʿā* rather than replacing scholarly agency.

Furthermore, ethical considerations persist regarding copyright and data transparency. Najiyah and Putriani (2024) emphasized that many digital hadith databases face unresolved copyright restrictions, especially when reproducing classical works without proper attribution. These issues underline the need for a shared Islamic digital repository governed by scholarly institutions to ensure uniformity, authenticity, and ethical compliance.

Reconstructing Hadith in Digital Format

Reconstruction of hadith in digital form represents the next stage of transformation—shifting from digitization as archiving to digitization as epistemic re-creation. Yazofa (2023) and Halim et al. (2022) describe this as a process of encoding *isnād* and *matn* into interoperable digital ontologies, where narrations are linked through metadata relationships akin to genealogical mapping. This method reflects the principles of *ʿilm al-rijāl*, allowing researchers to visualize transmission chains, detect weak narrations, and correlate sources across collections.

At the forefront of this effort, Asgari-Bidhendi et al. (2025) introduced Rezwan, an

AI-driven framework that processes over 1.2 million hadith texts through large language models (LLMs) for segmentation, multilanguage translation, and metadata validation. This corpus development demonstrates how machine learning can automate *takhrīj* functions while preserving the structural logic of *isnād*. Such innovations substantiate the Digital Takhrij Epistemic Model (DiTEM) by merging computational efficiency with traditional verification ethics.

The collaboration between technologists and scholars becomes crucial in this stage. As Akbar and Khalid (2025) highlight in *Al-Aasar Journal*, the methodology of hadith criticism (naqd *al-Ḥadīth*) must remain the epistemological backbone of all digital reconstructions. Digital systems must thus be designed not merely to store data but to embody *taḥqīq* — the careful, morally anchored investigation of knowledge.

The digital reconstruction of hadith brings profound benefits that address both scholarly demands and the needs of the wider Muslim community. Huda et al. (2023) observed that digital tools significantly enhance the efficiency, reach, and inclusivity of hadith learning, allowing for broader participation in Islamic scholarship. Platforms such as Hadith-Enc and Sunnah.com exemplify this transformation by providing simultaneous access to Arabic texts, verified translations, and contextual explanations that foster vibrant global learning communities.

Through digital archives, accessibility to hadith texts becomes instant and cost-effective, as physical and geographical barriers are removed, allowing open access for users across diverse contexts (Ghazali et al., 2025). The digitization process further facilitates the global dissemination of hadith knowledge, enabling it to transcend linguistic and cultural boundaries while promoting greater Islamic literacy and engagement among Muslims worldwide (Rosyad & Alif, 2022). At the same time, the preservation of Islamic heritage is strengthened, as digital repositories safeguard fragile manuscripts from deterioration and ensure their continued availability for future generations of scholars (Alkalifah & Rassam, 2025).

Equally important is the social dimension of digital hadith engagement. Online platforms and applications now serve as interactive spaces where users can discuss interpretations, share insights, and deepen their understanding collectively (Hidayah & Musaddad, 2025). These exchanges foster a sense of intellectual community and sustain the living tradition of hadith scholarship in a digital environment. Altogether, these developments demonstrate that digital reconstruction extends beyond improving access—it represents a revitalization of *ihyā' al-'ilm*, the revival and ethical preservation of sacred knowledge through responsible technological innovation.

Verifying the Accuracy and Authenticity of Digital Hadith

Verification of digital hadith authenticity remains the most sensitive and critical aspect of the digitization process. Mohamed and Sarwar (2021) demonstrated that AI-based linguistic modeling can detect forgeries through stylistic inconsistencies, syntactic deviation,

and semantic analysis. This computational validation mirrors the traditional practice of *naqd al-matn*, where scholars scrutinized textual coherence and moral implications.

More recent work by Ghriss (2025) at the Muslims in Machine Learning Workshop (ICML) proposed a graph-based authentication model inspired by *isnād* science. This approach represents narrators as interconnected nodes, where transmission reliability can be computed as weighted trust values — essentially a digital analog of *rijāl* criticism. The model exemplifies how the Digital Takhrij Epistemic Model (DiTEM) operationalizes classical epistemology within computational systems, ensuring that authenticity assessment remains embedded within ethical and relational logic.

In Indonesia, Muzakky and Mundzir (2022) emphasized the need for integration and verification across hadith databases through digital *takhrij* workflows. By cross-referencing Hadith.id, Tazkia Hadith Database, Shamela.ws, and Dorar.net, researchers can trace original sources (*maʾādir al-aṣṭiyyah*) efficiently. This process aligns with DiTEM's principle of interoperability — where metadata, textual lineage, and ethical validation converge to reconstruct authentic knowledge pathways.

Synthesis: Digital Takhrij Epistemic Model (DiTEM) in Practice

The findings of this study reveal that the Digital Takhrij Epistemic Model (DiTEM) operates as a hybrid epistemic mechanism that unites three interdependent dimensions essential to sustaining the integrity of hadith scholarship in the digital age. First, it embodies epistemological integrity by preserving *isnād*-based authenticity through systematic metadata provenance and rigorous cross-referencing across digital repositories. This ensures that each transmission can be traced back to its verified source, reflecting the same methodological precision upheld by classical scholars.

Second, DiTEM promotes ontological coherence by organizing digital hadith data through semantic field theory and linked open data structures. This approach allows related narrations, themes, and sources to be interconnected, creating a dynamic web of meaning that mirrors the relational nature of traditional *ʿilm al-Ḥadīth*.

Third, the model reinforces ethical accountability by embedding transparency, citation ethics, and scholarly supervision into the design of digital repositories. These ethical safeguards prevent misinformation, preserve academic rigor, and uphold *amānah al-ʿilm*—the moral responsibility of transmitting knowledge faithfully.

Through the integration of these principles, digital hadith systems evolve from static archives into active epistemic ecosystems. The convergence of artificial intelligence, ontological modeling, and classical hadith methodology demonstrates that the digital transformation of Islamic scholarship is not a rupture from tradition but rather its authentic continuation. It represents a form of digital *tahqīq*—a process of verification and preservation that safeguards both the form and the spirit of sacred knowledge in the modern era.

Conclusion

The digitization of hadith represents not only a technological advancement but also an epistemological renewal within Islamic scholarship. This study demonstrates that the process of Digital Takhrij Hadith, when grounded in the framework of Islamic Digital Humanities (IDH), transcends the notion of digitization as mere data management. It becomes instead a continuation of the classical Islamic tradition of *tahqīq al-naql*—a critical, ethical, and spiritually anchored process of verification and preservation. Through the proposed Digital Takhrij Epistemic Model (DiTEM), the study reinterprets the epistemic and moral logic of *isnād*, *matn*, and *amānah al-naql* within a digital ecosystem that values authenticity, structure, and accountability.

The findings highlight that digital technology, when integrated thoughtfully with Islamic epistemology, can strengthen both accessibility and integrity. The use of semantic modeling, metadata provenance, and artificial intelligence enables new forms of *takhrīj* that are faster, more inclusive, and globally connected, while still rooted in the scholarly rigour of the classical *ʿulām al-Ḥadīth*. Far from undermining tradition, these innovations extend it, allowing hadith studies to flourish in digital form without sacrificing spiritual or methodological depth.

However, the study also emphasizes that technological progress must be balanced by ethical consciousness. The potential for misinformation, data inaccuracy, and decontextualized interpretation underscores the need for continuous scholarly supervision and collaborative standardization among Islamic institutions. Digital hadith repositories must operate under shared principles of authenticity, transparency, and *amānah al-ʿilm* to ensure that the sacred trust of transmission remains intact in the age of algorithms.

In essence, Digital Takhrij Hadith through the lens of Islamic Digital Humanities affirms that the preservation of knowledge in Islam is both an intellectual and spiritual responsibility. By embedding classical epistemic values into digital infrastructures, Muslims can transform technology into a tool of *ihyāʾ al-ʿilm*—the revival of knowledge that harmonizes faith, reason, and innovation. Thus, the digital age does not mark a departure from prophetic heritage but opens a new horizon for its living continuation in a globally connected scholarly community.

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