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Artificial Intelligence in Arabic and Islamic Learning: A Scoping Map of Sociocultural, Religious, and Ethical Concerns

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ABSTRACT

Studies of artificial intelligence (AI) in Arabic and Islamic education are multiplying, and it is not yet clear how sociocultural and religious settings shape its use. This scoping map has three aims: to describe the profile of the recent literature, to identify the concerns it raises, and to relate those concerns to the learning functions AI serves. Following the scoping approach of Arksey and O'Malley, the authors searched Google Scholar (four queries, 2020–2026, 628 unique records), screened the records that mention AI by keyword, and kept 42 studies. One coder charted each study by focus, visible design, concern, and learning function, from titles and search extracts only. Thirty-seven studies date from 2025–2026. Concerns about culture (20 studies), authority and sanad (17), ethics (17), and structure (12) recur. Recitation, memorisation, and verification come with authority concerns, while translation and tutoring are treated as routine. These are hypotheses for field testing.

Keyword artificial intelligence; Arabic language learning; Islamic education; sociocultural factors; religious authority; scoping review

مستخلص البحث

يدخل الذكاء الاصطناعي صفوف تعليم اللغة العربية والتربية الإسلامية أسرع مما تستطيع البحوث أن تفسّر به أثر السياقات الاجتماعية الثقافية والدينية في استخدامه. تهدف هذه الخريطة الاستكشافية إلى ثلاثة أمور: وصف ملامح الدراسات الحديثة، والكشف عن القضايا التي تظهر فيها، وربطها بوظائف التعلّم التي يؤدّيها الذكاء الاصطناعي. واتُّبع منهج المراجعة الاستكشافية عند أركسي وأومالي، فجرى البحث في Google Scholar (أربعة استعلامات، 2020–2026، 628 سجلًّا فريدًا)، ثم رُشِّحت السجلات التي تذكر الذكاء الاصطناعي بالكلمات المفتاحية، فبقيت اثنتان وأربعون دراسة. وصنّف باحث واحد كل دراسة بحسب المحور والتصميم الظاهر والقضية ووظيفة التعلّم، اعتمادًا على العناوين ومقتطفات البحث وحدها. ظهرت سبع وثلاثون دراسة في 2025–2026. وتتكرر قضايا الثقافة (20 دراسة) والمرجعية والسند (17) والأخلاق (17) والبنية (12). وتقترن التلاوة والحفظ والتحقق بقضايا المرجعية، بخلاف الترجمة والتدريس الخصوصي. وهذه فرضيات تحتاج إلى اختبار ميداني.

كلمات أساسية
الذكاء الاصطناعي؛ تعليم اللغة العربية؛ التربية الإسلامية؛ العوامل الاجتماعية الثقافية؛ المرجعية الدينية؛ السند؛ مراجعة استكشافية

Introduction (المقدمة)

Artificial intelligence (AI) now reaches Arabic classrooms through tools that translate, summarise, tutor, and generate text. Studies of how it is adopted have started to appear in Islamic schools and universities, most of them in 2025 and 2026 (Table 2). Many ask whether teachers accept the tools or feel ready to use them, often through technology acceptance models and readiness scales (Anwar, 2026; Pahrudin et al., 2025; Raharjo et al., 2026). The question is reasonable, but it assumes a classroom with no cultural setting of its own. Earlier work on technology in Arabic teaching has also dealt mainly with tools and training: a mobile digital quiz for morphology exercises (Fauzi & Anindiati, 2019), a learning management system and student motivation (Fauzi & Anindiati, 2021), and training in teaching-quality documentation for school accreditation (Fauzi et al., 2022).

Arabic, however, is not a neutral subject in many Muslim settings. It is the language of revelation and of the classical texts (*turats*). It is often taught within a teacher–student relationship that has its own rules of conduct (*adab*) and, for Qur'anic and religious texts, a chain of transmission (*sanad*). Diffusion theory has some room for this in the idea of compatibility with users' values (Rogers, 2003), and acceptance models include social influence and facilitating conditions (Venkatesh et al., 2003). Research on religious communities adds that they negotiate new media instead of simply accepting or refusing them (Campbell, 2010). What remains unclear is how the recent AI literature in Arabic and Islamic education treats these matters, and where its concerns sit among the different things AI is asked to do.

This article maps that literature. It is a scoping map, which means it records what a documented search found and how the studies describe themselves; it does not judge their quality. The search pool was first assembled for a companion critical review of sociocultural and religious factors in technology adoption, and the AI studies were taken from it. Three research questions guide the map.

RQ1. What is the profile of the AI studies in this pool: their focus, years, and visible designs?

RQ2. Which sociocultural, religious, and ethical concerns are visible in these studies, and how are they distributed between Arabic-language and Islamic-education studies?

RQ3. How do the concerns relate to the learning functions for which AI is used, and what does this suggest for innovation design?

Accordingly, the study has three objectives, one for each question:

Objective 1. To describe the profile of the AI studies in the pool: their focus, years, and visible designs.

Objective 2. To identify the sociocultural, religious, and ethical concerns visible in these studies and how they are distributed between Arabic-language and Islamic-education studies.

Objective 3. To examine how these concerns relate to the learning functions for which AI is used, and to draw out what this suggests for innovation design.

The results are a map for later field work. They say nothing about how common any concern is.

Methods (منهجية البحث)

Research design

This is a scoping map built on the framework of Arksey and O'Malley (2005): set a question, locate studies, select, chart, and summarise. The PRISMA extension for scoping reviews (Tricco et al., 2018) was kept in view but not followed item by item. No protocol was registered. One person, the first author, screened and coded the records.

Source pool and filter

The pool comes from the Google Scholar search that was run through Publish or Perish on 11 November 2026 for the companion critical review. The settings were the keywords field, years 2020–2026, and at most 200 results per query. Table 1 lists the four queries. None contains an AI term, so AI studies entered the pool only when they also matched words about religion, culture, *adab*,

sanad, or authenticity. This affects everything below and is taken up under Limitations.

Table 1. Google Scholar queries (11 November 2026).

Query	Text	Results
K1	"Arabic" teachers technology adoption religious cultural pesantren OR madrasah OR "Islamic school"	200
K2	"bahasa Arab" teknologi pembelajaran hambatan budaya religius pesantren guru	200
K3	"Arabic language" "technology acceptance" OR UTAUT teachers Islamic values adab	46
K4	talaqqi OR sanad "online learning" Arabic OR Quran digital authenticity	200

The queries returned 646 rows, 628 of them unique. For the companion review, one reviewer screened titles and Scholar extracts and kept 362 records: 173 on Arabic and 189 on Islamic education, pesantren, or the Qur'an. Those criteria asked about contextual factors, not about AI. For the present article, a keyword filter was run over the titles and abstracts of all 628 records. The terms were *AI*, *artificial intelligence*, *chatbot*, *ChatGPT*, *generative*, *GPT*, *LLM*, *large language*, *conversational*, and the Indonesian and Arabic equivalents of artificial intelligence. The filter found 63 records; 43 had passed the earlier screen, and 20 had not. Only the 43 were kept, which means the earlier screen decides what is in the map. One of them was then dropped because it concerns Indonesian-language learning. That left **42 studies**.

Charting

Each study was charted on five variables. (1) Focus: Arabic language learning or Islamic education (including pesantren and Qur'anic learning), as assigned at the earlier screen. (2) Year of publication. (3) Visible design: *empirical* when the title or extract names participants, data, or sites; *review, conceptual, or model* when it says so; otherwise *not determinable*. (4) Visible concerns, in four groups: *authority* (religious authority, the teacher's role, *sanad*, *talaqqi*, authenticity of knowledge), *ethics* (values, *adab*, ethical frameworks), *culture* (culture, tradition, institutional setting), and *structure* (readiness, competence, policy, infrastructure). (5) The learning function for which AI is used, where it is named.

Coding rests on titles and on the Scholar extract, a fragment of about 190 characters that Google picks because it matches the query words. The abstracts of two studies, Nugraha and Syafe'i (2025) and Raharjo et al. (2026), were also read. No full text was read. A concern is counted when it is *visible* in this thin material, which is not the same as showing that a study addresses it.

Results & Discussion (نتائج البحث ومناقشاتها)

Profile of the corpus

The corpus is recent and leans towards Islamic education. Of the 42 studies, 37 appeared in 2025 or 2026 (Table 2). Ten focus on Arabic language learning and 32 on Islamic education, pesantren, or the Qur'an. In 17, the title or extract points to an empirical design; six are reviews, conceptual papers, or models; one combines document analysis with a pilot (Nugraha & Syafe'i, 2025), and 18 cannot be classified from what was available. Some records are books or chapters and not journal articles (for example, Elihami, 2025; Akanni, 2025). The full chart is in the Appendix.

Answer to RQ1 (Objective 1). The pool is small, recent, and weighted towards Islamic education: 42 studies, 37 of them from 2025–2026, with 10 on Arabic and 32 on Islamic education. Seventeen show an empirical design, and 18 cannot be classified.

Table 2. Profile of the 42 studies.

Characteristic	Category	Studies
Focus	Arabic language learning	10
	Islamic education, pesantren, Qur'an	32
Year	2023	2
	2024	3
	2025	18
	2026 (to November)	19
Visible design	Empirical	17
	Review, conceptual, or model	6
	Document analysis with pilot	1
	Not determinable	18

Concerns visible in the corpus

Four groups of concern recur (Table 3). A study can show more than one, and only three of the 42 show none in the material coded.

Table 3. Studies in which each concern is visible in the title or extract.

Concern group	Arabic-focused (n = 10)	Islamic education (n = 32)	All (n = 42)
Culture, tradition, institutional setting	5	15	20
Authority, *sanad*, authenticity	0	17	17
Ethics, values, *adab*	6	11	17
Structure: readiness, competence, policy, infrastructure	5	7	12

Culture and institutional setting. Robbaniyah (2026) reports, in the extract, that pesantren limit access to devices according to institutional culture, and this bears on listening and dictation practice. Julaeha et al. (2025) quote teachers who want AI output to fit the *kitab*, the pesantren culture, and the students' level. Qulyubi et al. (2026) place AI in a setting of traditional teachers and Islamic cultural values.

Authority, sanad, and authenticity. Qulyubi et al. (2026) name religious authority in their title. Istiqomah et al. (2024) link AI-assisted recitation to the authenticity of the recitation and the chain of transmission. Shobri and Alfurqan (2026) study how Islamic religious education teachers verify AI-generated content; their extract describes verification practices that range from the classical *sanad* to personal networks.

Ethics and values. Aziz (2026) builds an ethical framework on *maqasid al-shari'ah* and *adab*. Syaefulloh et al. (2026) ground AI use in academic writing in *amanah* and *tabayyun*. Nugraha and Syafe'i (2025) describe AI tools aligned with value-based education rooted in Qur'anic ethics.

Structure. Raharjo et al. (2026), a library study of Arabic teachers' readiness for large language models, report that readiness is early and uneven, that technological knowledge lags behind pedagogical and content knowledge, and that anxiety, low self-efficacy, and infrastructure gaps constrain adoption.

The authority row needs a note of caution. None of the 10 Arabic-focused studies shows an authority concern, against 17 of the 32 in Islamic education. Yet 12 of those 17 came from query K4, which asked for *talaqqi*, *sanad*, and Qur'anic material, and none of the Arabic-focused studies came from K4. The pattern is at least partly produced by the search, so it should be read as a lead, not as a result.

Answer to RQ2 (Objective 2). Four concerns are visible: culture and institutional setting (20 studies), authority and *sanad* (17), ethics and values (17), and structure (12). Culture, ethics, and structure appear in both focus groups. Authority appears only in the Islamic-education group, and the queries partly explain that.

Concerns and learning functions

Where the extracts say what AI is used for, five functions appear (Table 4). The studies do not compare functions, so the table only groups what they mention.

Table 4. Learning functions named in the extracts and the concerns visible beside them.

Learning function	Studies naming it	Concern visible alongside
Translating, summarising, processing Arabic text	Anwar (2026); Qulyubi et al. (2026); Hermawan et al. (2025); Rusdiana & Cahyadi (2026)	Traditional teachers and cultural values; the *talaqqi* tradition; ethical regulation
Tutoring and curriculum support	Hasan et al. (2023); Nugraha & Syafe'i (2025)	Alignment with Qur'anic ethics
Reading classical texts, grammar, listening and dictation	Salam et al. (2026); Santoso et al. (2026); Robbaniyah (2026)	Teachers' focus on higher-order comprehension and *adab*; institutional limits on devices
Qur'anic recitation and memorisation	Istiqomah et al. (2024); Akanni (2025); Firdaus (2026)	Authenticity and *sanad*; AI framed as not substituting the teacher–student relationship
Verifying AI output, academic writing	Shobri & Alfurqan (2026); Syaefulloh et al. (2026); Nordin et al. (2025)	*Sanad* checking, *amanah*, *tabayyun*; students' limited ability to assess authenticity

Text processing and tutoring appear as everyday uses, with value alignment as the main caution. Recitation, memorisation, and verification appear together with authority and authenticity. This grouping reflects what the extracts happen to say. It is not a measured difference.

Answer to RQ3 (Objective 3). The concerns seem to attach to learning functions. Text processing and tutoring appear as routine uses, while recitation, memorisation, and verification appear with authority and authenticity. This is a

hypothesis for field testing, and its implication for innovation design is taken up in the Discussion.

What the evidence allows

Few studies report outcomes that can be compared. In their abstract, Nugraha and Syafe'i (2025) report a 77% rise in engagement and a 67% rise in long-term retention in a pilot, but the abstract does not say how these were measured. Salam et al. (2026) frame their study as one of effectiveness on *qira'ah* of *turats*, yet the extract shows no result. The rest of the evidence is perceptions, readiness, and frameworks. No study was appraised for quality here.

Discussion

One reading of the map seems worth testing in the field: sociocultural and religious concerns appear to attach to what AI is asked to do, more than to AI as a whole. In the extracts, translation, summarising, and tutoring are ordinary conveniences whose main caution is value alignment. Recitation, memorisation, and checking content come up together with authenticity, *sanad*, and the place of the teacher. If this holds, it resembles the selective adoption by function that the companion review identifies for earlier technologies. The authors present it as a hypothesis because the extracts were chosen by search queries, not by reading the studies.

For innovation in Arabic teaching, this points to a design question. An innovation that gives AI the peripheral functions, such as drafting vocabulary lists, simplifying a passage, or offering extra practice, and leaves the core functions with the teacher may meet less resistance than one that tries to take over correction, certification, or transmission. Nugraha and Syafe'i (2025) move in this direction by placing AI tools inside a value-based framework, and Julaeha et al. (2025) report teachers asking that AI output fit the *kitab* and the pesantren setting. Neither study tests the design question directly.

The structural findings sit alongside the sociocultural ones. Raharjo et al. (2026) show that Arabic teachers' readiness is uneven and that technological knowledge lags. Culture and structure appear together in several records (Robbaniyah, 2026, for example, where institutional culture governs device

access). Training that ignores institutional norms may therefore address only part of the problem.

The clearest gap concerns Arabic itself. Authority and *sanad* are visible almost only in studies of Islamic education and the Qur'an, and the authors cannot say whether this reflects the literature or the search queries. Still, Arabic is taught in many of these same settings as the language of the *kitab*, while the Arabic-focused studies in the corpus mostly deal with skills, readiness, or models. Studies asking how teachers and students of Arabic regard AI as an authority on grammar, meaning, or the reading of classical texts would be a useful next step.

Limitations

This map rests on titles and search extracts, and its limits are considerable. First, the evidence is shallow. Only two abstracts were read in full (Nugraha & Syafe'i, 2025; Raharjo et al., 2026); the rest were coded from the title and the short extract that Google Scholar returns, which is chosen by the query and shows a fragment. Counts show what is visible, not how common a concern is. Second, the queries shaped the pool. None contained an AI term, so AI studies entered only through words for religion, culture, *adab*, *sanad*, or authenticity. That favours studies that mention such concerns and may overstate them. Query K4 supplied 12 of the 17 authority studies, so the contrast between the two focus groups is partly an artefact. Third, the records came from a screen built for the companion review, and 20 AI-mentioning records removed at that stage never reached this paper. Fourth, one author searched, screened, and coded, with no second coder, no registered protocol, and no quality appraisal. Fifth, only Google Scholar was searched, on 11 November 2026, for 2020–2026. The corpus includes grey literature, books, and chapters and is concentrated in Indonesian venues, so the conclusions do not extend to other regions. Finally, the link between concerns and learning functions is an interpretation of thin evidence and needs testing through interviews, observation, or comparison of functions within one setting.

Conclusions (الخاتمة)

This map of 42 studies shows that research on AI in Arabic and Islamic education is new and mostly small in scale: 37 of the studies appeared in 2025–2026, and only 10 focus on Arabic rather than on Islamic education. Within this young literature, four concerns recur: culture (20 studies), authority and *sanad* (17), ethics (17), and structure (12). Authority is visible only in the Islamic-education studies, a pattern the search queries partly explain. These concerns appear to attach to particular learning functions. Text processing and tutoring are treated as routine, whereas recitation, memorisation, and verification are discussed together with authenticity and the teacher's role. For innovation in Arabic teaching, this suggests giving AI the peripheral functions and leaving the core transmissive functions with the teacher, a hypothesis that still needs testing. Because studies of Arabic teaching that ask about authority are scarce, and because the map rests on titles and extracts, future work should read the full texts and test the function-based hypothesis with teachers and students of Arabic.

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Appendix. Coding of the 42 studies

Coded from the title and Scholar extract only, except Nugraha and Syafe'i (2025) and Raharjo et al. (2026), whose abstracts were read. A dash means nothing was visible.

Table A1. Coding of the 42 studies.

ID	Study	Focus	Visible design	Concerns	Learning function
192	Abidin & Fadlullah (2025)	Islamic ed.	Not determinable	Authority, Culture	–
462	Akanni (2025)	Islamic ed.	Not determinable	Authority	Qur'an memorisation apps
417	Almajdoub et al. (2026)	Islamic ed.	Empirical	Ethics	Qur'anic education
25	Anwar (2026)	Islamic ed.	Empirical	Ethics, Structure	Arabic-language processing
404	Aziz (2026)	Islamic ed.	Review or conceptual	Ethics	–
92	Bustomi et al. (2025)	Islamic ed.	Not determinable	Authority, Culture	–
64	Choirotullaili et al. (2026)	Islamic ed.	Empirical	Culture, Structure	–
54	Darmawaty et al. (2026)	Arabic	Empirical	Culture, Ethics	AI-mediated Arabic learning
568	Elihami (2025)	Islamic ed.	Not determinable	Authority	–
102	Farhan et al. (2026)	Islamic ed.	Review or conceptual	Ethics, Culture	–
67	Fatahillah & Hafidhoh (2026)	Arabic	Empirical	Culture, Ethics, Structure	–
402	Firdaus (2026)	Islamic ed.	Not determinable	Authority, Ethics	Qur'an memorisation; Arabic acquisition
70	Habib (2025)	Arabic	Not determinable	–	–
172	Haris et al. (2025)	Islamic ed.	Empirical	Culture, Structure	–
585	Hasan et al. (2023)	Islamic ed.	Empirical	–	AI tutor in Arabic learning
444	Hayat et al. (2026)	Islamic ed.	Review or conceptual	Authority	–
80	Hermawan et al. (2025)	Islamic ed.	Empirical	Culture, Structure	summarising texts; translating Arabic sources
280	Ikhwan & Aan (2025)	Arabic	Not determinable	Structure	–
501	Islam & Ravida (2025)	Islamic ed.	Not determinable	Authority, Culture	knowledge transmission

ID	Study	Focus	Visible design	Concerns	Learning function
445	Istiqomah et al. (2024)	Islamic ed.	Not determinable	Authority	Qur'an recitation
66	Julaeha et al. (2025)	Islamic ed.	Empirical	Culture	Arabic instruction
41	Kadir (2026)	Arabic	Model or conceptual	Ethics, Culture	–
131	Mohideen (2025)	Islamic ed.	Empirical	Culture	Arabic instruction for religious purposes
86	Muhammad (2025)	Islamic ed.	Review or conceptual	–	–
530	Nasikhin et al. (2025)	Islamic ed.	Empirical	Authority	hadith study; sanad and matan
560	Nordin et al. (2025)	Islamic ed.	Empirical	Ethics, Authority	–
88	Nugraha & Syafe'i (2025)	Arabic	Document analysis with pilot	Ethics, Culture	curriculum; intelligent tutoring
162	Pahrudin et al. (2025)	Islamic ed.	Empirical	Culture, Structure	–
34	Qoriah et al. (2024)	Islamic ed.	Empirical	Ethics, Culture	–
31	Qulyubi et al. (2026)	Islamic ed.	Not determinable	Authority, Culture	translating Arabic texts; clarifying religious terms
82	Raharjo et al. (2026)	Arabic	Review or conceptual	Ethics, Structure	–
334	Rahmat et al. (2025)	Arabic	Not determinable	Structure	–
59	Robbaniyah (2026)	Arabic	Empirical	Culture, Structure	listening (istima) and dictation (imla)
537	Rusdiana & Cahyadi (2026)	Islamic ed.	Not determinable	Authority, Ethics	translating Arabic texts
77	Salam et al. (2026)	Arabic	Empirical	Ethics	reading of classical texts (qira'ah of turats)
120	Santoso et al. (2026)	Islamic ed.	Not determinable	Authority, Culture	Arabic grammar; memorising religious texts
137	Setiaji & Sudirja (2026)	Islamic ed.	Not determinable	Ethics, Structure	generating Arabic text (risk of fabrication)
558	Shobri & Alfurqan (2026)	Islamic ed.	Empirical	Authority	verifying generative-AI content
158	Suncaka (2024)	Islamic ed.	Not determinable	Ethics, Culture	–
552	Syaefulloh et al. (2026)	Islamic ed.	Not determinable	Ethics, Authority, Structure	verifying Arabic text and translation in academic writing
71	Yono & Helmi (2025)	Islamic ed.	Not determinable	Authority, Culture	–
507	Yulianto & Haya (2023)	Islamic ed.	Not determinable	Authority	Qur'an and hadith learning