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INTRODUCING ARTIFICIAL INTELLIGENCE FOR QUR'ANIC AND ARABIC LEARNING: A WORKSHOP AT MA'HAD 'ALIY DARUL FATTAH

[1.] Heriansah, [2.] Hamdal, [3.] Ihdal Umam, [4.]Muhammad Umar Aziz Noor
[1,2,3.] Institut Agama Islam Darul Fattah Lampung, Indonesia, [4.]Ez-Zitouna University, Tunisia
[1.] abutaqiya22@gmail.com, [2.] hamdallampung@gmail.com, [3.] ihdal02@gmail.com,
[4.]aziznoor715@gmail.com

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ABSTRACT

Artificial intelligence (AI) tools are increasingly available for language learning and Qur'anic study, yet learners need guided opportunities to understand their functions, use them appropriately, and evaluate their outputs critically. This community-engagement programme introduced AI applications to 43 students of Ma'had 'Aliy Darul Fattah Lampung through a two-day workshop held on 12–13 October 2024. The sessions combined presentations, demonstrations, guided practice, and question-and-answer activities. The applications introduced and practised were ChatGPT, Qolam AI, DeepL Translator, Qara'a, and Ngaji.ai. Arabic-learning activities focused on grammar, translation, vocabulary, and conversational learning, while Qur'anic-learning activities introduced the use of digital tools to support tahsin, tajwid awareness, and feedback on recitation. Participants' understanding was assessed using a pre-test and post-test, each consisting of five multiple-choice items and two open-ended questions. Descriptive analysis of the 43 paired scores showed that the mean score increased from 27.60 to 85.00, a gain of 57.40 points. Scores increased for 41 participants and remained unchanged for two; none decreased. These results indicate a descriptive improvement in participants' understanding of the workshop material. They do not, however, establish long-term skill development or a statistically significant effect. The workshop did not require participants to produce teaching materials; its outcome was introductory knowledge and initial hands-on experience. AI-generated feedback on Qur'anic recitation was presented as supplementary and must be verified by qualified teachers. The short duration and absence of follow-up assessment are important limitations.

Keywords: *Artificial intelligence; Arabic language learning; Qur'anic learning; tahsin; tajwid; community engagement*

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INTRODUCTION

Artificial intelligence (AI) has become increasingly visible in educational settings through systems that generate text, translate languages, provide conversational interaction, and process speech. In language education, generative AI can support learners by offering explanations, examples, translation assistance, and opportunities for self-directed practice. A systematic review of research published during the first year of ChatGPT-related language education studies found that the technology had been used for self-directed learning, content generation, and teacher workflows, while also identifying continuing questions about feedback quality, research design, and ethical use (Li et al., 2024). A scoping review of generative AI in language teaching and learning similarly mapped emerging pedagogical applications and research gaps (Law, 2024).

These opportunities do not mean that AI can replace teachers or authoritative learning resources. Generative systems may produce inaccurate, incomplete, or contextually inappropriate responses. Learners therefore need the ability to formulate clear prompts, compare outputs with reliable references, identify possible errors, and use AI transparently. (Lo et al., 2024) in a systematic review of empirical studies on ChatGPT in English language education, describe a range of classroom uses while emphasizing the need to examine pedagogical value and associated challenges. Such findings support an introductory workshop that combines demonstrations with guided practice rather than treating AI as an independent source of knowledge. These concerns are also discussed in studies of AI use in higher education and religious education, which emphasize the need for ethical, critical, and context-sensitive use (Kuncara et al., 2024); (Marlin et al., 2023).

The relevance of AI to Arabic language learning is particularly important because students often encounter challenges in vocabulary, morphology, syntax, translation, and oral communication. ChatGPT may function as a conversational or explanatory aid, while dedicated Arabic applications may provide functions such as vocalisation, translation, and sentence correction. However, the usefulness of these tools depends on the accuracy of their outputs and the learner's ability to verify them. (Robbani et al., 2023), in their study of Arabic language and literature students, report that ChatGPT can assist with translation, idea generation, and academic tasks,

but also identify risks of overdependence and the need to validate information. This suggests that students should be introduced not only to application features but also to critical and ethical use. Related work in Arabic language education has also explored AI-supported grammatical learning, translation, and conversational practice (Lutfiyatun et al., 2023; (Nasaruddin, 2024); (Robbani et al., 2023).

AI also has potential applications in Qur'anic learning, particularly as a supplementary aid for recitation practice, pronunciation feedback, and awareness of tajwid. Recent thematic work on AI and Qur'anic qira'at identifies potential educational uses alongside concerns about authenticity, over-reliance, sanad, and the central role of talaqqi (Abdelgelil et al., 2025). A systematic review of AI in Qur'anic education also identifies applications in recitation, memorisation, pronunciation, and pedagogical support, while noting concerns about authenticity and contextual appropriateness (Ahmad et al., 2025). These considerations are especially important because correctness in Qur'anic recitation is not reducible to automated feedback alone. Guidance from a qualified teacher remains essential. Research on digital Qur'anic learning and speech-recognition applications likewise highlights the potential of technology to support recitation practice, while leaving pedagogical verification essential (Kartaputra et al., 2024); (Ahmad et al., 2025).

The partner institution for this programme was Ma'had 'Aliy Darul Fattah Lampung. The initial orientation and communication with the institution's leadership indicated a need to introduce students to the practical uses of AI in Arabic and Qur'anic learning. The programme was therefore designed for students—not lecturers or prospective students—and focused on familiarisation and guided initial use of selected applications. The available programme records do not provide a quantified baseline of how many students had previously used each application, nor a systematic inventory of device or internet constraints. Accordingly, this article does not make numerical claims about prior AI familiarity or infrastructure conditions. Earlier community-engagement studies in Arabic learning and digital literacy provide a relevant local and institutional context for this kind of introductory programme (Khoiri et al., 2023; Mahardini et al., 2023; Suanto, 2024)

The workshop addressed two connected learning domains. In Arabic learning, demonstrations concerned grammatical explanation, translation, vocabulary, and conversational practice. In Qur'anic learning, students were introduced to

applications for supporting tahsin and tajwid practice and for reviewing aspects of their recitation. Five applications were used: ChatGPT, Qolam AI, DeepL Translator, Qara'a, and Ngaji.ai. The programme was introductory; it did not include the development or assessment of completed teaching products.

The programme had two objectives: (1) to improve students' immediate understanding of the AI applications and their potential uses in Arabic and Qur'anic learning, as measured through pre-test and post-test scores; and (2) to provide initial guided experience in using selected applications for language-learning tasks and Qur'anic recitation practice. The article reports the activities actually conducted, analyses the available test scores descriptively, and discusses the pedagogical opportunities and limitations of introductory AI use.

1. Pedagogical alignment and human mediation

The educational value of AI depends on the relationship between the tool, the learning objective, the task, and the teacher's role. A translation tool may help a learner obtain an initial rendering of a sentence, but it does not automatically teach the learner how case endings, word order, idiomatic meaning, or discourse context shape that translation. Similarly, a conversational chatbot may generate a dialogue, but students still need opportunities to speak, listen, negotiate meaning, and receive feedback from a teacher or peer. In this sense, AI is most useful when it functions as an additional source of examples and practice that is embedded in a broader instructional sequence. The teacher remains responsible for selecting suitable tasks, correcting misconceptions, and connecting generated content to the curriculum.

2. Specific considerations in Arabic learning

Arabic presents linguistic characteristics that make verification especially important. Its writing system includes connected letter forms and short-vowel marks that may be omitted in ordinary writing. Grammatical interpretation may depend on inflectional endings, syntactic position, derivational patterns, and agreement. A small change in vocalisation or morphological analysis can alter the meaning or grammatical function of a word. Translation also requires attention to context, polysemy, idiomatic expressions, and differences between Arabic and Indonesian sentence structures. Consequently, students should not treat an automatically vocalised or translated sentence as authoritative. They should compare it with a trusted dictionary, textbook, grammatical reference, or teacher explanation.

3. Specific considerations in Qur'anic learning

The use of AI in Qur'anic learning requires an additional level of caution. Recitation involves accurate articulation points (makharij al-huruf), letter characteristics (sifat al-huruf), rules of tajwid, continuity of recitation, and established modes of transmission. Some aspects of recitation may be amenable to acoustic analysis or speech-recognition feedback, but automated systems can be affected by microphone quality, background noise, accent, speaking pace, the model's training data, and the particular recitation style. A system may identify a sound pattern without fully explaining the pedagogical reason for a correction. It may also fail to capture aspects that a qualified teacher can hear in a direct lesson. For this reason, the workshop positioned AI-supported recitation applications as practice companions rather than authorities that certify correctness.

4. d. Rationale and contribution of the programme

Previous research has discussed the use of ChatGPT in Arabic language education and the potential of AI in Qur'anic education, but the local institutional context still requires practical familiarisation.(Robbani et al., 2023) describe both opportunities and risks in Arabic students' use of ChatGPT, while (Nasaruddin, 2024)discusses how carefully directed prompts can help teachers obtain Arabic learning materials suited to particular instructional needs. (Sulaeman et al., 2023) also examine ChatGPT as an emerging technology in Arabic education. In Qur'anic education, (Ahmad et al., 2025) map applications involving text analysis, recitation, memorisation, pronunciation, and pedagogy, while (Abdelgelil et al., 2025) emphasize the challenges posed to qira'at, sanad, and talaqqi. The present programme does not claim to test the effectiveness of any individual application. Its contribution is a practice-oriented account of how an introductory workshop can expose students in an Islamic higher-education setting to a range of tools for two related learning domains, while explicitly maintaining human verification. Community-based AI literacy initiatives and workshops have similarly been reported as ways to introduce learners and educators to emerging digital tools (Alkhairi et al., 2024; Gs et al., 2024)

METHOD

1. Programme design and participants

This activity was designed as a community-engagement workshop using an introductory training format. It was conducted at Ma'had 'Aliy Darul Fattah Lampung on 22 and 23 October 2025. The participants were 43 students of the institution. The workshop was intended to provide introductory knowledge and guided exposure to AI applications relevant to their learning context. The available documentation identifies the participant group and total number but does not specify their semester distribution or a more detailed demographic profile.

2. Workshop procedures

The programme consisted of preparation, delivery, and immediate evaluation. During preparation, the team coordinated with the institution's leadership, identified the general learning needs to be addressed, prepared introductory material, and arranged the workshop. The delivery phase used short presentations, application demonstrations, guided practice, and interactive question-and-answer sessions. The two-day format allowed the participants to encounter the applications and try selected functions with facilitator guidance.

Table 1. Main Activity Schedule

Day	Main activity	Focus
Day 1 –12 October 2024	Opening, introduction to AI, pre-test, presentation and demonstrations	Basic concepts of AI and examples of its use in learning
Day 2 – 13 October 2024	Review, guided application practice, post-test, discussion and closing	Practical familiarisation with AI tools for Arabic and Qur'anic learning

The original activity schedule contained overlapping time entries for the pre-test, practice sessions, break, and post-test. Because the precise corrected times could not be confirmed from the information available, this article reports the verified dates and sequence of activities without reproducing potentially inaccurate time slots. The workshop was conducted over two days; the article does not claim that a monthly

mentoring programme or sustained post-workshop monitoring had already taken place.

3. Applications and learning tasks

The workshop introduced five artificial intelligence applications selected according to their potential relevance to students' learning needs in Arabic language and Qur'anic studies. The selection covered two main learning domains: Arabic language learning and Qur'anic learning. In the Arabic language component, the applications were introduced to support grammatical understanding, vocabulary development, translation, and conversational practice. In the Qur'anic learning component, the focus was on introducing digital tools that could assist students in practising Qur'anic recitation, developing awareness of tahsin and tajwid, and receiving preliminary feedback on their reading. Each application was presented through demonstrations and introductory guided activities to help participants understand its main functions and possible educational uses. Table 2 summarises the applications introduced during the workshop, their respective functions, and the learning domains they addressed.

Table 2. AI Application

Application	Workshop use	Learning domain
ChatGPT	Demonstration of prompt-based explanations, examples, and conversational practice	Arabic grammar, vocabulary, translation support, and dialogue
Qolam AI	Introduction to Arabic-oriented functions, including translation and text/harakat assistance where available	Arabic language learning
DeepL Translator	Demonstration of machine translation and comparison of translated meaning	Arabic–Indonesian translation
Qara'a	Guided introduction to recitation practice and application feedback	Qur'anic recitation, tahsin, and tajwid awareness
Ngaji.ai	Guided introduction to AI-supported Qur'anic reading practice and feedback features	Qur'anic recitation and review

The descriptions above identify the applications used in the workshop and the learning purposes for which they were introduced. They should not be interpreted as a formal comparative evaluation of the applications. Features may vary by application version, subscription, device, and internet access. The workshop did not measure the technical accuracy of each application.

a. Prompt formulation as a guided learning routine

During the demonstrations, prompt formulation was treated as a way of making a learning request explicit. A useful prompt generally identifies the role or perspective expected from the system, the learning topic, the learner's level, the required output, and any constraints on the response. For example, a student asking for an explanation of jumlah ismiyyah can specify that the explanation is intended for a beginner, request vocalised examples, ask for Indonesian translations, and require a short exercise. This structure can make the generated response more relevant than a vague instruction such as "explain Arabic grammar." However, a well-written prompt does not guarantee an accurate answer. The output must still be checked for grammatical correctness, appropriate vocalisation, and alignment with the lesson being studied.

b. Verification routine for AI-generated responses

A simple verification routine can be used across the applications introduced in the workshop. First, students identify the purpose of the task and select the application that appears suitable. Second, they enter a clear instruction or provide the text to be processed. Third, they read or listen to the output and identify statements that require checking. Fourth, they compare the output with a trusted source, such as a course text, dictionary, mushaf, tajwid reference, or teacher explanation. Finally, they revise their understanding or repeat the practice after receiving guidance. This sequence emphasizes that AI output is provisional information for learning rather than a final answer. It also gives students a practical way to avoid uncritical dependence on automated systems.

4. Assessment instrument and data analysis

Participants completed a pre-test before the instructional sessions and a post-test after the workshop. Each test consisted of seven items: five multiple-choice questions and two open-ended questions. The tests were intended to assess participants' understanding of the material introduced during the workshop. The

participant scores were recorded on a 0–100 scale in the original score table. The available documentation does not specify the item-level scoring weights or provide the test questions and marking rubric; therefore, this article reports the recorded total scores and does not infer an unreported scoring scheme.

The quantitative data were analysed descriptively. The mean pre-test and post-test scores were calculated from the 43 paired records, and individual score changes were classified as increased, unchanged, or decreased. No inferential statistical test was reported; consequently, the term "statistically significant" is not used. The qualitative component is limited to the documented orientation, workshop observations, and interaction during the sessions. Since a structured interview transcript, respondent count, and formal qualitative coding record were not available, no thematic or frequency claims are made from qualitative data.

5. Ethical and pedagogical safeguards

Participants were introduced to AI as a supplementary learning resource. They were encouraged to compare generated language explanations and translations with course materials and teacher guidance. For Qur'anic recitation, automated feedback was treated as an initial aid rather than a final authority. Accuracy of makharij, sifat al-huruf, tajwid, and recitation should be checked by a qualified Qur'an teacher through direct listening and correction. Personal data and voice recordings should only be uploaded when users understand the application's privacy conditions and have an appropriate basis to do so.

RESULTS AND DISCUSSION

1. Implementation of the workshop

The two-day workshop was attended by 43 students of Ma'had 'Aliy Darul Fattah Lampung. The programme began with an introduction to AI and its relevance to education, followed by demonstrations of selected applications. Participants then engaged in guided practice and discussion. The delivery format combined explanation, demonstration, hands-on exposure, and question-and-answer activities. This sequence was intended to move participants from general awareness of AI toward an initial understanding of how particular applications could support learning tasks.

The workshop remained an introductory programme. Participants were not required to produce a lesson plan, digital module, or other teaching product. Therefore, the programme outcome should be understood as exposure to application functions and initial practice, rather than demonstrated mastery of AI-supported instructional design. This distinction is important because the quality of a teaching product or the transfer of skills to independent learning was not evaluated.

2. Introduction to AI for Arabic language learning

In the Arabic-learning component, ChatGPT was introduced as a prompt-based conversational tool that can generate explanations, examples, and practice questions. Qolam AI was introduced for Arabic-oriented text support, while DeepL Translator was demonstrated as a translation tool. These applications offered examples of how students could obtain an initial explanation of grammatical structures, explore vocabulary, compare translations, and practise short dialogues.

For example, a participant could ask ChatGPT to explain the difference between *jumlah ismiyyah* and *jumlah fi'liyyah*, provide vocalised examples, and generate short exercises. Qolam AI could be used to examine an Arabic sentence and explore available text-support functions. DeepL Translator could be used to compare a translation with the original Arabic text. Such uses can support learning when students treat the output as a draft or learning aid and verify it against trusted references.

This approach is consistent with (Robbani et al., 2023) who found that Arabic language and literature students use ChatGPT for translation, idea generation, and academic tasks, while also highlighting the importance of validating AI-generated information. Reviews of generative AI in language education similarly describe roles such as learning support, content generation, and conversational practice, but call for attention to feedback quality and pedagogical design (Law, 2024; Li et al., 2024; Lo et al., 2024). The workshop's introductory format provided an opportunity for students to recognise these functions without assuming that AI output is always correct.

3. Introduction to AI for Qur'anic learning

The Qur'anic-learning component introduced Qara'a and Ngaji.ai as applications that students could explore in relation to recitation practice, *tahsin, tajwid* awareness, and feedback on reading. Students were guided to select a passage, listen to or review the available reference material, practise reading, and observe the

feedback features offered by the application. The pedagogical value of this activity lies in familiarising students with the possibility of using digital tools to support repeated practice and to identify aspects of recitation that may require further attention.

The workshop did not conduct a controlled test of the applications' accuracy, nor did it establish that automated feedback could independently diagnose all tajwid or pronunciation errors. It is therefore more appropriate to describe these tools as supplementary aids. The teacher's direct listening, correction, and explanation remain indispensable, particularly for *makharij al-huruf, sifat al-huruf*, rules that depend on recitation context, and the transmission of correct Qur'anic reading. This cautious position is consistent with recent discussion of AI and Qur'anic qira'at, which recognises pedagogical possibilities while emphasizing the limits of automation and the importance of talaqqi and authoritative transmission (Abdelgelil et al., 2025).

4. Prompts and learning outputs

To make the workshop's practical orientation clearer, the following examples present prompts and sample outputs that can be used to illustrate the kinds of learning tasks demonstrated. These are reconstructed pedagogical examples for the revised article, not verbatim transcripts or screenshots collected during the workshop. They should be labelled as examples rather than empirical records of individual participants' screen activity.

Example 1. ChatGPT prompt for Arabic grammar

Prompt:
"Act as an Arabic language instructor. Explain the difference between jumlah ismiyyah and jumlah fi'liyyah for beginner students. Provide the definition, sentence pattern, five vocalised examples, Indonesian translations, and a short identification exercise with an answer key. Use clear and systematic explanations."

Output:

Jumlah ismiyyah is a nominal sentence that typically begins with an ism, for example:

الطَّالِبُ مُجْتَهِدٌ *(The student is diligent).*

Jumlah fi'liyyah is a verbal sentence that begins with a verb, for example:

يَقْرَأُ الطَّالِبُ الْكِتَابَ *(The student reads the book).*

Example 2. Qolam AI prompt for Arabic sentence review
Prompt:

"Review the Arabic sentence الطَّالِبُ يَذْهَبُ إِلَى الْمَدْرَسَةِ. Provide its Indonesian meaning, identify the grammatical function of each word, and explain the use of the preposition إِلَى and the genitive form الْمَدْرَسَةِ. Indicate any uncertainty rather than inventing a rule."

output:

The sentence means 'The student goes to school.' الطَّالِبُ is the subject/topic, يَذْهَبُ is the present-tense verb, إِلَى is a preposition, and is a genitive noun following the preposition. The analysis should be checked against the intended grammatical framework.

Example 3. DeepL Translator for Arabic–Indonesian translation
Source text:

طَلَبُ الْعِلْمِ وَاجِبٌ عَلَى كُلِّ مُسْلِمٍ وَمُسْلِمَةٍ

Translation:
"Menuntut ilmu merupakan kewajiban bagi setiap muslim laki-laki dan perempuan."

Students can compare the machine translation with a literal translation and discuss how context influences the choice of Indonesian wording.

Example 4. Guided recitation practice using Qara'a and Ngaji.AI

A practical activity may ask students to select a short surah, listen to an available recitation model, read the passage, and review the feedback displayed by the application. Students then repeat the reading and identify the points that need further attention. The article does not attribute any specific score or detected error to the applications because no individual application output or accuracy record was supplied for analysis.

Workshop documentation



Figure 1 training activities

5. Pre-test and post-test results

The pre-test and post-test each contained five multiple-choice items and two open-ended questions. The recorded total scores for 43 participants were recalculated from the individual data in the original table. The mean pre-test score was 27.60, while the mean post-test score was 85.00. The mean descriptive gain was therefore 57.40 points. Forty-one participants recorded higher post-test scores, two recorded the same score, and none recorded a lower score.

Table 3. Pre Test and Post Test

Indicator	Pre-test	Post-test
Number of participants	43	43
Mean score	27.60	85.00
Minimum score	5	50
Maximum score	85	100

The average increase of 57.40 points represents a descriptive difference between the two test occasions. Because no inferential test was conducted and no item-level results or scoring rubric were available, the result should not be described as statistically significant or as proof of improved practical recitation or language proficiency. The test scores support a narrower conclusion: participants' measured understanding of the workshop material was higher after the two-day programme.

The distribution of scores provides additional context for the mean difference. The pre-test scores ranged from 5 to 85, whereas the post-test scores ranged from 50

to 100. The lower end of the post-test distribution was therefore higher than the lower end of the pre-test distribution, and the upper end reached the maximum recorded score. This pattern is consistent with the participant-level classification: 41 students had a higher post-test score, two students had an unchanged score, and no student had a lower score. The descriptive pattern suggests that the learning material was accessible to most participants during the workshop. It does not, by itself, show which particular application or instructional activity contributed most to the change.

6. Interpretation of the findings

The increase in the mean test score may be associated with the close alignment between the workshop content and the post-test material, as well as the combination of explanation, demonstration, guided practice, and discussion. The initial presentation provided a conceptual overview, while demonstrations made the functions of the applications more concrete. Guided practice then allowed students to connect the applications with familiar tasks in Arabic and Qur'anic learning. The post-test captured immediate understanding after this learning sequence.

Nevertheless, the result should be interpreted with caution. A pre-test/post-test comparison without a control group cannot isolate the effect of the workshop from other influences, such as prior knowledge, repeated exposure to similar questions, or assistance during practice. In addition, the tests measured understanding through five multiple-choice and two open-ended questions; they did not directly assess independent prompt-writing skill, translation accuracy, Arabic speaking proficiency, tajwid performance, or the ability to evaluate AI outputs. The result therefore indicates immediate learning gains on the test, not comprehensive AI literacy.

The findings are consistent with the broader literature suggesting that generative AI can provide accessible support for language learning, including explanation, translation, and conversational practice (Lo et al., 2024; Robbani et al., 2023). At the same time, the literature warns against uncritical reliance on AI. The workshop's emphasis on teacher verification is particularly important in Qur'anic learning, where the authenticity and precision of recitation require authoritative human guidance (Abdelgelil et al., 2025).

a. Implications for Arabic language learning

The Arabic component suggests several possible directions for subsequent instruction. For qawa'id, a chatbot can be asked to generate examples at different levels of complexity, explain a grammatical pattern in Indonesian, or provide exercises that require learners to identify mubtada', khabar, fi'l, fa'il, and maf'ul bih. For tarjamah, a machine translation system can offer a first draft that students compare with a word-by-word gloss and a context-sensitive translation. For muhadatsah, a chatbot can generate a role-play scenario, provide useful expressions, or simulate a short exchange that students later perform with a partner. These tasks are consistent with the possibilities discussed by (Nasaruddin, 2024) and (Sulaeman et al., 2023), who identify prompt-directed content generation and Arabic learning support as potential applications of ChatGPT.

b. AI as scaffold rather than substitute

These examples are most educationally productive when they are used as scaffolds. A scaffold is temporary support that helps learners perform a task that may initially be difficult, while the longer-term goal remains independent performance. In Arabic learning, an AI explanation can help a student understand a grammatical pattern before the student analyses a new sentence without assistance. A translation can provide an initial point of comparison before the student justifies a translation choice. A generated dialogue can offer a model before students engage in spontaneous communication. If the learner simply copies the output, the activity may reduce rather than deepen engagement. Teachers can therefore ask students to explain why an AI answer is correct, identify an error in a generated response, or compare two alternative outputs. These follow-up tasks shift attention from obtaining an answer to developing linguistic judgement.

c. Implications for Qur'anic recitation practice

For Qur'anic learning, digital recitation applications may encourage repetition and provide immediate feedback that students can use between teacher-led sessions. This can be helpful when learners need additional opportunities to listen, rehearse, and notice differences in pronunciation. Research on speech recognition in digital

Qur'an applications has reported the potential of recognition-based systems to support pronunciation practice (Kartaputra et al., 2024). At the same time, the systematic review by (Ahmad et al., 2025) shows that AI applications in Qur'anic education span text analysis, recitation, memorisation, and pedagogy, while also identifying concerns about authenticity and contextual appropriateness. The thematic review by (Abdelgelil et al., 2025) further emphasizes that automated tools cannot replace the epistemic and pedagogical functions of sanad and talaqqi. These findings support a blended model in which students use applications for repeated practice but receive authoritative correction from a competent teacher.

d. Institutional implications and sustainability

An introductory workshop can serve as a first step, but sustainable integration requires more than a one-off event. Institutions may consider developing a short AI-use guide for students, identifying approved or recommended applications, providing access to devices and stable connectivity where possible, and training lecturers to design tasks that require critical engagement with AI outputs. A small number of discipline-specific examples can be more useful than a long list of tools: Arabic grammar prompts, translation comparison tasks, dialogue simulations, and supervised recitation practice are directly connected to the participants' learning context. Future activities could also include a follow-up session in which students bring examples of AI outputs, discuss errors or limitations, and reflect on how they verified the information. Such a design would provide stronger evidence of transfer from introductory awareness to actual learning practice.

7. Programme limitations and recommendations

Several limitations need to be considered when interpreting the outcomes of this workshop. Since the programme was conducted over only two days, it provided initial exposure to AI applications rather than comprehensive or continuous training. Furthermore, the absence of follow-up assessments makes it impossible to determine whether participants retained their knowledge or applied it independently after the programme. The available data also lacked practical assessment instruments for evaluating prompt construction, translation accuracy, and improvements in Qur'anic recitation. No learning products were developed or assessed, while information

regarding participants' prior AI experience and technological constraints remained limited. In addition, the absence of structured interviews and systematic qualitative records restricted the possibility of conducting thematic analysis.

Future initiatives should incorporate extended practice sessions, follow-up evaluations, and performance-based assessment rubrics. These instruments could examine students' ability to formulate effective prompts, analyse Arabic grammatical structures, evaluate translations, and recognise inaccurate AI-generated responses. In Qur'anic learning, automated feedback should remain supplementary and be validated by qualified instructors, with assessment focusing primarily on actual recitation performance. Institutional challenges, including infrastructure, funding, and access to expertise, should also be investigated through systematic needs assessments rather than assumed as established findings. Such improvements would strengthen the methodological rigour and educational relevance of subsequent programmes.

CONCLUSION

The AI familiarisation workshop was conducted for 43 students of Ma'had 'Aliy Darul Fattah Lampung on 22–23 October 2025. Through presentations, demonstrations, guided practice, and discussion, participants were introduced to ChatGPT, Qolam AI, DeepL Translator, Qara'a, and Ngaji.ai for selected tasks in Arabic and Qur'anic learning. The Arabic component addressed grammar, translation, vocabulary, and conversational practice, while the Qur'anic component introduced AI-supported practice related to tahsin, tajwid awareness, and recitation feedback.

Descriptive analysis of the 43 paired test records showed an increase in the mean score from 27.60 before the workshop to 85.00 after it, representing a gain of 57.40 points. Scores increased for 41 participants and remained unchanged for two. These results indicate improved immediate understanding of the workshop material, but they do not establish statistical significance, long-term retention, or mastery of practical language and recitation skills. The programme did not produce teaching materials; its outcome was introductory knowledge and initial hands-on exposure to selected applications.

Future activities should extend the duration of guided practice, include follow-up assessment and practical performance rubrics, and maintain teacher verification

of AI feedback—especially for Qur'anic recitation. AI should be positioned as a supplementary learning aid, not a replacement for qualified Arabic instructors or Qur'an teachers.

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