

IMPROVING AL-QUR'AN HADITH LEARNING OUTCOMES THROUGH THE APPLICATION OF AI-BASED MEDIA AT MTSN 1 BIREUEN

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ABSTRACT

This study aims to improve students' learning outcomes in the Al-Qur'an Hadith subject through the application of Artificial Intelligence (AI)-based learning media in class VII of MTsN 1 Bireuen. The study used the Classroom Action Research (CAR) method carried out in two cycles, with each cycle consisting of the stages of planning, action implementation, observation, and reflection. The research subjects were seventh-grade students of MTsN 1 Bireuen. Data were collected through learning outcome tests and observation of student activity during the learning process. The results showed an improvement in learning outcomes after the application of AI-based media. In Cycle I, the students' average score reached 70 with a learning mastery percentage of 65%. After improvements were made in Cycle II, the average score increased to 85 with a mastery percentage reaching 90%. In addition to the improvement in learning outcomes, the use of AI-based media also increased students' motivation, activeness, and engagement in the learning process. AI media provided a more interactive learning experience through practice, evaluation, and immediate feedback. Thus, the application of Artificial Intelligence (AI)-based learning media can serve as an innovative and effective alternative for improving students' Al-Qur'an Hadith learning outcomes at MTsN 1 Bireuen.

Keywords: Artificial Intelligence, Al-Qur'an Hadith, learning outcomes, learning media, Classroom Action Research.

INTRODUCTION

Learning Al-Qur'an Hadith is one of the core subjects in Islamic Religious Education, occupying a strategic position in shaping the religious character of students at the madrasah level. This subject is not merely intended to convey theoretical knowledge, but is aimed at enabling students to read, understand, memorize, and practice the content of the Al-Qur'an and Hadith in their daily lives. Through this subject, students are expected to grow into individuals who possess strong religious knowledge while also embodying the values contained within the Al-Qur'an and Hadith in their attitudes and behavior. For this reason, Al-Qur'an Hadith learning emphasizes not only cognitive ability such as the capacity to memorize verses or recall the meaning of Hadith but also affective and psychomotor aspects, including proper recitation technique, moral character, and the consistent practice of Islamic teachings in everyday conduct. Given these multiple dimensions of competence that must be achieved simultaneously, appropriate, engaging, and effective learning methods and media that are suited to students' needs and developmental stage are essential to support the success of this subject. (Shofiyullahul & Vita, 2022)

Based on preliminary observations of Al-Qur'an Hadith learning at MTsN 1 Bireuen, several problems were still found in the learning process that hindered the achievement of optimal outcomes. Some students had difficulty reading the Al-Qur'an with correct tajwid, a skill that requires repeated practice and immediate correction to avoid the reinforcement of reading errors. Students also faced challenges in memorizing Hadith texts accurately, as well as in understanding the meaning and deeper content of the material being taught, rather than merely memorizing it verbatim. In addition to these academic difficulties, student motivation and activeness in participating in learning

remained relatively low. Classroom observations revealed that many students appeared passive, rarely asked questions, and showed limited enthusiasm during the lesson. (Salsabila et al., 2026)

This condition was compounded by a learning approach that still relied heavily on lecturing and rote memorization without variation in media or teaching strategy. Such a monotonous approach made a considerable number of students less interested in the subject matter and more prone to boredom, particularly during long sessions of recitation drills or memorization exercises. Over time, this combination of low motivation, limited engagement, and conventional teaching methods contributed to student learning outcomes that had not yet reached an optimal or satisfactory level, as reflected in the relatively low scores obtained on formative assessments prior to this study. (Syuhudi & Zen, 2024)

The development of digital technology today provides broad opportunities for teachers to create learning experiences that are more engaging, interactive, and responsive to the needs of individual students. Among the various technologies that can be utilized in the classroom, Artificial Intelligence (AI) has emerged as one of the most promising tools for transforming conventional teaching practices. AI-based learning media can help deliver instructional material in an interactive format, provide structured practice exercises, generate rapid and personalized feedback, and support students in learning according to their own pace and level of ability. Unlike static, one-size-fits-all instructional materials, AI-based systems can adapt to the specific strengths and weaknesses of each learner, offering targeted reinforcement where it is most needed. In the specific context of Al-Qur'an Hadith learning, AI-based media can be utilized in a variety of ways: to help students understand abstract or unfamiliar concepts, to provide guided practice in Qur'anic reading and recitation, to facilitate repeated review of memorized material through spaced or adaptive repetition, and to support students in completing evaluation questions with immediate, corrective feedback. (Kusumo & Mariana, 2025) Beyond these academic functions, the use of AI-based media also creates space for students to learn and practice more independently, outside the constraints of a fixed classroom schedule, while the teacher continues to play an essential role as a guide and facilitator who directs, monitors, and supports students throughout the entire learning process. In this sense, AI is not intended to replace the teacher, but rather to complement and extend the reach of teacher-led instruction. (Mujiburrahman, 2025)

The application of AI-based media is expected to increase students' motivation, activeness, and conceptual understanding, which in turn is anticipated to have a direct and positive impact on their overall learning outcomes. Learning media that is more interactive, visually engaging, and responsive to student input can also help create a classroom atmosphere that feels markedly different from the conventional, lecture-dominated approach previously used. With this shift, students are expected to become more interested and willing to participate actively in the learning process, and to have greater opportunities to practice repeatedly, receive timely feedback, and correct their own mistakes before those errors become habitual. This is particularly important in a subject such as Al-Qur'an Hadith, where accuracy in recitation and depth of understanding both depend heavily on sustained, guided practice rather than one-time exposure to the material. (Gea, 2025)

Based on the problems outlined above, concrete and systematic action is needed to improve the process of Al-Qur'an Hadith learning at MTsN 1 Bireuen. Classroom Action Research (CAR) was

chosen as the research method for this study because it offers a structured yet flexible framework that can be used to address real classroom problems directly, through iterative cycles of planning, action, observation, and reflection. This iterative design allows the researcher and teacher to identify weaknesses in the initial intervention and to make evidence-based adjustments in subsequent cycles, rather than relying on a single, unmodified treatment. (Ramadan & Castrawijaya, 2026)

This study therefore applies Artificial Intelligence-based learning media as the primary action intended to improve student learning outcomes. Specifically, this study aims to determine the extent of improvement in student learning outcomes achieved through the application of AI-based learning media in the Al-Qur'an Hadith subject at MTsN 1 Bireuen. In addition, this study also aims to observe accompanying changes in student motivation and activeness throughout the intervention, and to identify the concrete benefits of using AI media in helping students understand, read, and memorize Al-Qur'an Hadith material more effectively. (Harahap et al., 2026)

Thus, this study is expected to provide a practical and replicable solution to the persistent problems of Al-Qur'an Hadith learning encountered in the classroom. Beyond its immediate contribution to the students involved, the research results are also expected to serve as a reference and alternative for other teachers seeking to utilize AI technology to create learning experiences that are more engaging, interactive, and pedagogically effective, ultimately contributing to broader improvements in student learning outcomes in Islamic religious education. (Ananta et al., 2026)

RESEARCH METHOD

This study used Classroom Action Research (CAR) aimed at improving student learning outcomes in the Al-Qur'an Hadith subject through the application of *Artificial Intelligence* (AI)-based learning media. The research was conducted at MTsN 1 Bireuen among seventh-grade students, in two cycles. Each cycle consisted of four stages: planning, action implementation, observation, and reflection.

Table 1. Research Stages

Stage	Activity
Planning	Preparing materials, learning tools, AI media, observation sheets, and test questions.
Implementation	Carrying out Al-Qur'an Hadith learning using AI-based media.
Observation	Observing student activity, activeness, and engagement during learning.
Reflection	Evaluating the learning process and determining improvements for the next cycle.

In the planning stage, the researcher prepared learning tools, Al-Qur'an Hadith material, AI-based media, and research instruments. In the implementation stage, the teacher used AI media to deliver material, practice, and evaluate learning. Next, in the observation stage, the researcher observed student activity and engagement during the learning process. The reflection stage was carried out to

identify the strengths and weaknesses of the actions taken. The results of the Cycle I reflection were used as the basis for improvement in Cycle II. Research data were collected through observation and tests: observation was used to determine student activity and activeness during learning, while tests were used to measure student learning outcomes.

Data	Collection Technique	Instrument
Student activity	Observation	Observation sheet
Learning outcomes	Test	Evaluation questions

Data were analyzed using descriptive quantitative analysis by calculating the average score and the percentage of student learning mastery. The results of the analysis in each cycle were used to determine changes in learning outcomes after the application of AI-based learning media.

RESEARCH RESULTS

This Classroom Action Research (CAR) was carried out in two cycles, aimed at improving student learning outcomes in the Al-Qur'an Hadith subject through the use of *Artificial Intelligence* (AI)-based learning media. Each cycle consisted of four stages: planning, action implementation, observation, and reflection. The results of Cycle I were used as the basis for making improvements in Cycle II.

Cycle I Results

In Cycle I, Al-Qur'an Hadith learning was carried out using AI-based learning media. The media was used to help students understand the material, practice reading, repeat memorization, and work on comprehension questions. At the beginning of using the AI media, some students still appeared to need time to adjust. The teacher provided explanations and guidance so that students could use the media well. After the learning process was completed, students were given a test to determine their learning outcomes. Based on the Cycle I test results, the following were obtained: 1) Class average score: 70. 2) Learning mastery percentage: 65%. These results show that there was already an improvement in the learning process, but the outcome had not yet reached the set success indicator, namely a minimum classical mastery of 85%. Based on observation results, some students began to show interest in using the AI media. Students appeared more interested when the material was delivered interactively. However, some students were still not active and still required guidance from the teacher.

Several obstacles found in Cycle I included; a) Students were not yet accustomed to using AI-based media. b) Some students were still passive during learning. c) Some students still had difficulty understanding the material. d) The teacher still needed to provide direct guidance. e) Learning time had not been used optimally. Based on the reflection results, learning in Cycle I needed to be improved. The teacher then planned several improvements for Cycle II so that the use of AI media could run better and student learning outcomes could increase.

Cycle II Results

In Cycle II, learning was carried out taking into account the results of the Cycle I reflection. The teacher made several improvements in the use of AI-based media to make it easier for students to follow the lesson. The teacher provided simpler explanations of how to use the AI media. In addition, students were given more opportunities to practice and review the material. The teacher also provided guidance to students who were still experiencing difficulties. Several improvements made in Cycle II included; a) Providing more intensive guidance to students. b) Explaining the use of AI media more simply. c) Providing more adequate time for practice. d) Providing motivation to students to be more active. e) Giving students the opportunity to ask questions and discuss. f) Giving recognition or appreciation to active students. After the learning process was completed, students were given a test to determine their learning outcomes in Cycle II. The test results showed a fairly good improvement, namely; Class average score: 85 & Learning mastery percentage: 90%. These results show that student learning outcomes improved compared to Cycle I. The learning mastery percentage increased from 65% to 90%. Thus, the set success indicator of a minimum classical mastery of 85% was achieved. In addition to the test results, changes were also visible in student activity during learning. Students became more active in using the media, more courageous in asking questions, and more enthusiastic in participating in learning activities. Students also appeared more confident in doing practice exercises and answering questions.

Comparison of Cycle I and Cycle II Results

The change in student learning outcomes from Cycle I to Cycle II can be seen in the following table.

No.	Indicator	Cycle I	Cycle II	Improvement
1	Average score	70	85	15
2	Learning mastery	65%	90%	25%

Based on the table above, it can be seen that there was an improvement in learning outcomes after the learning was improved in Cycle II. Students' average score increased by 15 points, while learning mastery increased by 25%. This improvement shows that the use of AI-based learning media had a positive impact on the Al-Qur'an Hadith learning process. Students became more active, more interested, and had the opportunity to practice repeatedly. The research results show that the use of Artificial Intelligence (AI)-based learning media can improve student learning outcomes in the Al-Qur'an Hadith subject at MTsN 1 Bireuen. This improvement is not merely reflected in a single measurement, but is evident from the progression of student learning outcomes observed across Cycle I and Cycle II, which together illustrate a clear and consistent upward trajectory as the intervention was refined. This pattern of gradual improvement is characteristic of Classroom Action Research, in which the initial cycle typically serves as an exploratory phase that reveals both the potential and the limitations of a new intervention, while the subsequent cycle is used to address those limitations directly. (Naamy, 2023).

In Cycle I, students were still in the stage of adjusting to the use of AI media. This adjustment period was, in many respects, an expected outcome given that the technology represented a substantial departure from the conventional lecture-based approach that students had previously

experienced. Some students were not yet accustomed to using technology in learning, having had limited prior exposure to digital or AI-based instructional tools in their regular classroom routines. As a result, they still required close guidance from the teacher, both in operating the media itself and in understanding how to make effective use of the features it offered, such as practice exercises and feedback mechanisms. Beyond the purely technical adjustment, some students were also still passive and did not fully understand how to use the available media to support their own learning, meaning that the barrier was not only technological familiarity but also a lack of confidence and initiative in engaging independently with a new mode of instruction. This combination of technical unfamiliarity and low initiative created a condition in which learning outcomes had not yet reached the target that had been set for the intervention. (Ramawardhani et al., 2025)

This is reflected quantitatively in the data: the students' average score in Cycle I was 70, while the learning mastery percentage reached 65%. Although modest, these results should not be read as a failure of the intervention, but rather as evidence that learning had already begun to develop in a positive direction, even during this initial period of adaptation. Nevertheless, the results had not yet reached the success indicator established for this study, namely a minimum classical mastery of 85%, indicating that further refinement of the approach was necessary before the intervention could be considered fully effective. Based on the reflection conducted at the end of Cycle I, several targeted improvements were made in preparation for Cycle II. The teacher provided simpler and more accessible explanations regarding the use of AI media, recognizing that some of the initial difficulty stemmed not from the technology's inherent complexity but from how it had been introduced. The teacher also provided closer, more individualized guidance to students who were experiencing difficulties, increased the amount of time allocated for hands-on practice, and provided additional motivation and encouragement so that students would feel more confident participating actively in the learning process. (Syukri, 2025)

These adjustments proved effective in Cycle II. Students began to get used to using AI media, and the initial hesitation that had characterized Cycle I largely gave way to a greater sense of familiarity and comfort with the tool. Students appeared more active in following the lesson, more enthusiastic in doing practice exercises, and more courageous in asking questions, changes that suggest the intervention had succeeded not only in improving technical competence but also in building students' confidence and willingness to engage. The use of AI media also gave students the opportunity to review the material repeatedly and receive immediate feedback, a feature that appears to have played a particularly important role in reinforcing correct understanding and in helping students identify and correct their own mistakes without having to wait for the teacher's individual attention. The Cycle II test results showed that the average score increased to 85, while the learning mastery percentage increased to 90%, figures that comfortably exceeded the success indicator set at the outset of the study. Thus, there was an increase in the average score of 15 points and an increase in learning mastery of 25% between the two cycles, a substantial gain that underscores the effectiveness of the refinements introduced following the Cycle I reflection. (Suciadewi et al., 2026)

Taken together, the findings of this study point to several concrete benefits associated with the use of AI media in learning. First, AI media contributed to increasing students' motivation and interest in learning, likely because it offered a form of engagement that felt more dynamic and

responsive than traditional instructional approaches. Second, it made learning more engaging and interactive, shifting the classroom experience away from passive listening toward active participation. Third, it helped students understand the material more easily, particularly through its capacity to present content in varied and adaptable formats. Fourth, it gave students the opportunity to practice independently, extending learning beyond the boundaries of scheduled class time. Fifth, it provided faster feedback than would typically be possible through manual, teacher-led correction alone. Sixth, and from the teacher's perspective, it helped in providing practice and evaluation more efficiently, reducing the burden of preparing and grading exercises manually (Innayati, 2026).

In addition to the improvement in learning outcomes, changes were also clearly visible in student activity throughout the intervention. In Cycle II, students were more active and confident in participating in learning, a shift that was evident not only in test scores but in the qualitative character of classroom interaction itself. Students no longer confined themselves to listening to the teacher's explanations, but were also directly involved in practice exercises and evaluation activities, taking a more active role in constructing their own understanding. Thus, the improvement in learning outcomes from 70 to 85 and learning mastery from 65% to 90% provides strong evidence that the application of Artificial Intelligence (AI)-based learning media can be an effective alternative for improving the Al-Qur'an Hadith learning outcomes of seventh-grade students at MTsN 1 Bireuen, while also fostering broader gains in motivation, engagement, and learner autonomy that extend beyond what test scores alone can capture. (Arsela & Castrawijaya, 2025)

Table of Overall Research Results

No.	Learning Outcome Indicator	Cycle I	Cycle II	Improvement
1	Students' average score	70	85	15 points
2	Learning mastery percentage	65%	90%	25%
3	Percentage of students not yet mastering	35%	10%	Decreased 25%
4	Student activeness	Fair	Good	Improved
5	Learning motivation	Fair	Good	Improved
6	Engagement in learning	Fair	Good	Improved
7	Ability to use AI media	Fair	Good	Improved

Table of Learning Outcome Comparisons

Stage	Average Score	Mastery	Remarks
Cycle I	70	65%	Target not yet reached

Stage	Average Score	Mastery	Remarks
Cycle II	85	90%	Target reached
Improvement	15 points	25%	Successful

Based on the table above, it can be seen that the application of AI-based learning media resulted in an improvement in learning outcomes. The average score increased by 15 points, from 70 to 85, while learning mastery increased by 25%, from 65% to 90%. The Cycle II results have exceeded the success indicator of 85%.

CONCLUSION

Based on the results of the Classroom Action Research (CAR) carried out over two cycles, it can be concluded that the application of *Artificial Intelligence* (AI)-based learning media proved effective in improving student learning outcomes in the Al-Qur'an Hadith subject at MTsN 1 Bireuen. This is demonstrated by the increase in students' average score from 70 in Cycle I to 85 in Cycle II, as well as the increase in the learning mastery percentage from 65% to 90%. In addition, the use of AI-based media also had a positive impact on students' motivation, activeness, and engagement in the learning process. AI-based media helped students understand the material, improve their reading, enhance memorization, and receive immediate feedback. For teachers, the use of AI made it easier to monitor student progress and conduct learning evaluations more effectively and efficiently. Thus, the application of *Artificial Intelligence* (AI)-based learning media can serve as an innovative solution for improving the quality of Al-Qur'an learning.

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