
Integrating ChatGPT in Islamic Higher Education: Enhancing Students' Understanding of the Sustainable Development Goals

*Shubhi Mahmashony Harimurti¹, Muhammad Sulaiman², Irfan Hilmi³,
Dwi Santosa Pambudi⁴*

¹Department of Pharmacy, Universitas Islam Indonesia, Yogyakarta, Indonesia

²Department of Islamic Education, Universitas Terbuka, Tangerang, Indonesia

³Department of Islamic Education, Universitas Islam Negeri Sunan Kalijaga, Yogyakarta, Indonesia

⁴Department of Islamic Studies, Universiti Islam Selangor, Selangor, Malaysia

¹shubhi.mahmashony@uii.ac.id, ²sulaiman@ut.ac.id, ³23204091018@student.uin-suka.ac.id, ⁴pambudi@uis.ac.my

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Abstract

Objective: This study aims to analyze the optimality of learning by utilizing Chat GPT in Islamic Studies for Scholars courses to help students achieve the Sustainable Development Goals (SDGs). Specifically, Goals 4 (Quality Education), 5 (Gender Equality), 6 (Clean Water and Sanitation), 7 (Affordable and Clean Energy), 9 (Industry, Innovation, and Infrastructure), 11 (Sustainable Cities and Communities), 15 (Life on Land), 16 (Peace, Justice, and Strong Institutions), and 17 (Partnerships for the Goals). Pharmacy students are considered less responsive to Islamic history. This research is important to help students understand the SDGs, which are rarely understood by them. Islamic education for scholars, which mostly focuses on Islamic history, becomes too monotonous if it is only delivered in the classroom. **Theoretical framework:** Quran Surat al-Jumu'ah verse 10 serves as the theoretical framework for this research. Starting from a theoretical concept, it is then studied in a more practical context or put into practice. **Literature review:** A review of relevant literature reveals that lectures with practitioners can meet students' needs in understanding SDGs directly from experts. **Method:** Classroom Action Research is the method used in this study. Specifically, it is experimental and participatory. Innovations include involving practitioners in planning, teaching, and evaluating. **Results:** Students' lack of responsiveness was addressed by formulating problem-based learning or case studies to improve students' ability to solve problems and group-based projects. Field lectures with assignments to recreate historical sites using Chat GPT were found to increase student enthusiasm. An important finding of the study is that students were made aware of the SDGs by incorporating sustainable messages into the course content. **Implications:** Students' understanding of SDGs in the "Islam for Scholars" course is enhanced by combining theory and practice, using innovative technology, and encouraging active participation in the course. **Novelty:** The novelty of this research lies in the integration of learning content on the History of Islamic Civilization with SDGs. This is still rare in Indonesia and even globally.

Keywords: chatgpt, classroom action research, field trip, islam for scholars, sdgs.

INTRODUCTION

The “Islam for Scholars” course was selected due to its direct relevance to the History of Islamic Thought and Civilization, as well as the foundational figures of Universitas Islam Indonesia (UII), the pioneer of Indonesian higher education. Indoctrinating students about UII through these figures is deemed essential. Currently, the course content is primarily limited to material presented in existing textbooks. Coincidentally, the author (proposer) has developed two textbooks on “Islam Ulil Albab.” However, these resources are in Indonesian, which limits their utility for International Program (IP) classes where English is the common medium. Consequently, current lectures heavily rely on these Indonesian textbooks, even for designing Student-Centered Learning approaches. This reliance inadvertently restricts students' engagement to merely comprehending the material, missing opportunities for experiential learning through visits to relevant historical sites or museums housing pertinent artifacts [\[1\]](#).

Another general observation about this course is that it has not yet implemented group project learning. Case study learning was attempted, but the results seemed to be limited to discussions with friends who had similar ways of thinking. It was as if the problem-solving process and conflict management were not yet apparent. It is hoped that solving problems based on case studies and the experiences of practitioners will motivate students to study the material more enthusiastically. The problem encountered when this course was held by the Directorate of Academic Services was that most Pharmacy students lacked understanding and were not very active in class. When regular classes and IP were managed again by the Pharmacy Study Program, this was seen as an opportunity for development to improve student activity and understanding. The sample used in this research was class A of the UII International Program Pharmacy Study Program [\[2\]](#).

Another problem that occurred in previous learning was that lecturers still used traditional methods, as did students. Lecturers gave assignments to students based on printed books. The weaknesses of printed books today are that they are unattractive in appearance, not interactive, impractical to carry around, and prone to loss if not stored properly in a designated place. The next reason is to accommodate the existence of Artificial Intelligence (AI), which intersects with many areas, including education. Students often utilize AI to facilitate their academic journey. However, they tend to simply copy and paste from AI, including ChatGPT. While ChatGPT can enhance personalized learning, risks such as plagiarism, overdependence, and lack of accountability remain major concerns. There is no natural role for human reason and thought, as the name of this course suggests, “Islam for Scholars.” Another reason why this research is important is that the application of AI in Islamic studies opens significant opportunities for personalized learning, though it remains challenging in terms of ethics and contextualizing values [\[3\]](#).

In addition, another problem is that students still do not fully understand the SDGs. In fact, many everyday topics touch on this major global agenda for 2030. It seems that students are only willing to study topics closely related to their academic discipline, without considering other areas of knowledge [\[4\]](#). It is important to note that while ChatGPT demonstrates a good level of literacy regarding the SDGs, research indicates there are still gaps in its comprehensive cross-competency intelligence related to the SDGs [\[5\]](#). The innovation implemented is teaching practitioners as an effort to improve students' understanding of the history of Islamic civilization and culture in Indonesia, which leads to the SDGs. This research can provide students with a second opinion on the discussion. Not only from lecturers who may not have the same experience as these practitioners [\[6\]](#).

The application of innovation can overcome the obstacles faced. One way is by providing assignment sheets containing problems that must be solved by students after attending lectures from practitioners and conducting field trips. For example, for CPMK 3, whose objective is “Students can explain the history of the development of Islamic thought and

relate it to developments in their field of study,” the assignment sheet includes problems related to the history of Islam's arrival in Indonesia, particularly Yogyakarta, through artifacts and sites that have been visited and studied. Students are asked to discuss with their peers, and in the future, they can describe the remains of ancient Islamic sites with the help of ChatGPT.

There are several points of connection between the orientation and theme and the innovation being implemented. First, this learning process emphasizes case studies, as explained in the previous paragraph. Before the discussion, students attend lectures by practitioners who have also visited historical sites related to the subject matter, and everything is explained in the assignment sheet. Students are required to address these issues through independent activities, such as thoroughly researching available references before class discussions. This learning process is also project-based, as all discussion outcomes are documented in written form and compiled into a book. It is hoped that this book will serve as a reference for Islamic scholars and will be written in English. This is because English-language textbooks are currently unavailable, with existing materials still being in Indonesian.

The teaching methods in the “Islam for Scholars” course also need to be developed. This research also aims to add content to “Islam for Scholars” that is in line with the scientific knowledge of Pharmacy students. Integration and interconnection of knowledge is expected here [7]. Another challenge faced in teaching this course is that the content of “Islam for Scholars”, which primarily focuses on general history, is not particularly appealing to Pharmacy students, whose schedules are already filled with lectures, assignments, laboratory work, and report submissions. Moreover, most students come from high school, so their religious knowledge is quite limited. A well-developed and engaging method is needed to make the learning process more enjoyable [8]. With the proposed method changes in this research, it is hoped that students will change their attitudes after taking the “Islam for Scholars” course. Not to mention that the students enrolled in this course are first-year students. Therefore, it is necessary to reinforce their understanding of UUI, which is the subject matter of this course. In addition, the content emphasized in this course is the History of Islamic Civilization and Culture in Indonesia, not the world, let alone the Middle East. This is because the class proposed in this proposal is also attended by some students from the region where Islam originated. The experience from previous cohorts, which also included students from Arab countries, shows that they tend to overlook this course because it is considered too easy for those who come from the very region where the Prophet Muhammad (peace be upon him) spread this religion of mercy for all creation. The course content is focused on the objectives outlined in the SDGs. The aim of this research is to analyze the effectiveness of learning using Chat GPT in the “Islam for Scholars” course to enhance students' understanding of the SDGs, particularly Goals 4, 5, 6, 7, 9, 11, 15, 16, and 17.

The learning concept developed has a fundamental principle based on projects and invites practitioners to give lectures. Lectures with practitioners teaching are considered to provide understanding that is relevant to students' needs and a thorough mastery of the material presented [9]. Case study and group project learning models can meet Key Performance Indicators 4 and 7, namely teaching practitioners and collaborative and participatory classes.

LITERATURE REVIEW

Some literature can be reviewed and related to this research. One of the relevant literatures for this study is Musyaffi's research, which states that the developed learning concept has fundamental principles based on projects and involves practitioners in teaching. Lectures taught by practitioners are considered to provide understanding that is relevant to students' needs and demonstrate a high level of mastery of the material presented. In reference, it is explained that the issues discussed in the course are always evolving in line

with current dynamics. Those who are most knowledgeable are the practitioners because they are directly involved in the field and deal with the issues that are always discussed in class. Lecturers do understand, but on average, their understanding is limited to information obtained from secondary data, not primary data.

The research gap lies in the existence of SDG content that has not been explicitly discussed in previous studies. In this study, there are nine SDG goals that can be addressed simultaneously in one course. This is what makes the course that has been studied unique. Usually, only one goal is addressed, but this course addresses more than half of the SDGs simultaneously. This is a gap that has not yet been addressed. The learning concept broadly draws from Quranic verse 10 of Surah al-Jumu'ah.

فَإِذَا قُضِيَتِ الصَّلَاةُ فَانْتَشِرُوا فِي الْأَرْضِ وَابْتَغُوا مِنْ فَضْلِ اللَّهِ

Meaning: “So when the prayer has been established, spread out across the earth and seek the bounty of Allah.”

Completing prayers in accordance with the activities of practitioners. This is because both prayers and participating in practitioners' teaching activities are activities regulated by specific regulations, and certain policies must be followed; if not adhered to, they become invalid [10]. Without intending to equate them, Allah SWT and practitioners share a similarity: both possess detailed knowledge. “Scattered across the earth” is a phrase that fits well with fieldwork. Thus, after attending the practitioner's teaching session, the next step is to visit the objects discussed in class. It can also be expressed in another way: something read or recited during prayer is then practiced in the process of spreading across the earth [11]. The phrase وَابْتَغُوا مِنْ فَضْلِ اللَّهِ also indicates that after participating in field lectures, the use of Chat GPT is the embodiment of the command, meaning “seek it by yourselves.” The Chat GPT application is a manifestation of seeking or exploring further using the available prompts. The “favor of Allah” referred to in the phrase is, of course, the SDGs, which are the culmination of learning activities. Muslims are urged to obey Allah's commands for the sustainability of harmonious life [12].

From Q.S. al-Jumu'ah verse 10 written above, we can also learn that rituals must be performed. The opposite is also true. There should be no discrepancy between words and deeds. Words and actions must be in harmony [13]. This is also part of character education, which is undoubtedly beneficial in helping students understand the SDGs, as mentioned earlier. The verse also emphasizes that all of this is part of seeking the excellence of Allah SWT. The concept presented in this learning process is akin to an exact science course accompanied by practical training. During the current semester, students learn in the classroom through regular lectures. Typically, in the same semester or six months later, students undergo practical training to apply everything they have previously learned. However, this is rarely found in the “Islam for Scholars” course.

Adjustments to the reviewed concept are certainly necessary. The group project learning concept used as a reference is based on offline learning. Up to this point, the discussion remains the same. The distinguishing factor, of course, is the course being proposed. Islamic studies courses require better classroom management to ensure students do not view them merely to fulfill obligations. At the field study location, students are asked to create illustrations of sites using Chat GPT and write papers about those locations. What is more important than solving problems is for students to understand the problems presented. Guiding students' reflective attitudes to foster personal awareness is also emphasized [14].

It is hoped that the valuable lesson from Quranic verse 10 of Surah al-Jumu'ah, as mentioned earlier, is applied by students so that the mission of spreading across the earth to study the wealth of Allah's knowledge after learning in the classroom can be achieved. At the end of the course, students are asked to provide reflections, both qualitative and quantitative. Interconnection and integration among learning content and methods on

Islamic History and Civilization with SDGs optimized by Chat GPT is the novelty of this research. Scholars in Indonesia and worldwide rarely reveal it. It can be a new perspective for students to understand SDGs in another way by the students. Mostly, SDGs are covered by this learning.

METHODOLOGY

This research uses the classroom action research method. More specifically, it is participatory and experimental. Participatory means that the researcher is fully involved in the learning process, from planning, implementation, measurement, to reporting [15]. The experimental type focuses more on applying several learning strategies and techniques to determine the most effective way to achieve the course objectives [16].

The participatory approach means that the researcher does not merely act as an observer but actively engages in the entire learning cycle, encompassing the stages of planning, implementation, assessment, and reporting of results. This allows for a deep contextual understanding of classroom dynamics firsthand. Meanwhile, the experimental approach in this study emphasizes the application and testing of various learning strategies and techniques, such as project-based learning, collaborative methods, and digital media integration, to empirically evaluate the effectiveness of each method in enhancing students' comprehension and achievement of course learning outcomes. The significance of this method lies in its ability to generate adaptive evidence-based practices tailored to student needs while providing relevant, immediate feedback for continuous improvement in teaching quality.

The learning model implemented is the optimization of the role of practitioners in teaching and field lectures as reinforcements for the material learned in class [17]. It must be acknowledged that the “Islam for Scholars” course has almost no learning methods that direct students to visit the locations discussed in the classroom. Unlike other courses where such visits may be commonplace, field lectures with a strong historical focus can strengthen students' character education [18]. This, of course, reinforces one of the Graduate Learning Outcomes (GLO), which states, “Ability to demonstrate reverence toward the One and Only God by adhering to His teachings in daily life while upholding Islamic ethics and moral values.”

Group project learning is a student-centered method that has three principles. These three principles are that learning is specific to the context, students are actively involved in the learning process, and they achieve their course objectives through social interaction, knowledge sharing, and understanding. These three principles are applied in this research. The case studies provided are relevant to current situations and contexts, student engagement is key to learning, and collaboration with peers is essential [19].

The application of this concept in the “Islam for Scholars” course involves students being given case studies to complete independently first. They are asked to search for and study available reference sources to broaden their knowledge. After that, the students discuss with their group members who share the same topic to unify and align their perspectives on the specific issue raised in the case study. Following this, they attend lectures led by practitioners. Students are supervised throughout the field lectures. Some of the planned field lecture locations include the Kedaton Plered Site, the Plered Mosque Site, the Plered Square Site, and the Kerta Site. The reason for selecting Plered as the field lecture location is that nearly all existing sites are ruined and can be reconstructed using ChatGPT. Additionally, Plered's inland location facilitates access. This contrasts with historical sites in coastal areas, which are quite distant and have few ruins.

The material required for this course is the ChatGPT Premium application, which can be used by all students, even if there is only one account. The use of Chat GPT remains under the supervision of the lecturer so that students do not engage in inappropriate behavior. For example, completely relying on Chat GPT to complete assignments.

Table 1. Summary of Research Methodology

Aspect	Description
Research Design	Classroom Action Research with participatory and experimental approaches
Research Approach	Participatory (researcher actively involved in planning, implementation, assessment, and reporting) and experimental (testing multiple learning strategies)
Research Focus	Evaluating the effectiveness of learning strategies in achieving course learning outcomes
Learning Model	Optimization of practitioner-led teaching and field lectures as reinforcement of classroom material
Learning Strategies	Project-based learning, collaborative learning, digital media integration, and practitioner lectures
Student Role	Active participation through independent study, group discussion, collaboration, and field-based learning
Learning Activities	Case study analysis, group discussions, practitioner lectures, supervised field lectures
Field Lecture Locations	Kedaton Plered Site, Plered Mosque Site, Plered Square Site, and Kerta Site
Rationale for Site Selection	Inland location, accessibility, extensive ruins suitable for reconstruction using ChatGPT
Use of Technology	ChatGPT Premium application under lecturer supervision
Ethical Control	Lecturer supervision to prevent over-reliance on ChatGPT and inappropriate academic behavior
Learning Outcomes Alignment	Graduate Learning Outcome emphasizing Islamic ethics, moral values, and reverence toward God
Educational Value	Strengthening character education, contextual understanding, collaboration, and critical thinking

RESULTS AND DISCUSSION

The learning medium used in this course is ChatGPT. Students are permitted to subscribe to a premium account to assist in reconstructing historical sites based on fieldwork conducted and explanations from practitioners. This reconstruction is solely for informational purposes. Nothing more. This is because students are from the Pharmacy Program, who likely have limited knowledge of history [20]. Students understand that students must strictly adhere to ethical guidelines when using Chat GPT, not merely copy and paste [21].

The assessment tool used is an assignment sheet. Additionally, the CPMK measurement method involves evaluating the reconstructed images included in the paper and the Mid-Term Exam (MTE). The assessment process also observes students' activities, from group discussions, performance during field lectures, to the outcomes of discussions. Based on the learning instruments used to measure the achievement of CPMK, the following can be reported. A total of 61% of students were able to explain the characteristics of "ulil albab" very well in accordance with the Qur'an. 11% of students were able to explain this well. The percentage of students with good ability was 5.6%. The same percentage applied to students with poor ability. The rest were those who were unable to explain the characteristics as described above.

Exactly half of the students were able to reflect very well on the role and example set by the founders of UII, particularly in terms of work ethics and setting an example for addressing contemporary issues in their field of study. 39% demonstrated good ability in reflecting on this aspect. Additionally, the students could not meet these standards. Overall, students were able to explain very well the history of the development of Islamic thought and relate it to developments in their respective fields of study. None of the students' evaluation results fell outside this assessment range. The weighting for this CPMK is 60%.

Therefore, even though in the previous two CPMKs there were some students who did not meet the requirements, this achievement can compensate for that.

56% of students were able to formulate their contributions to the field of study they are pursuing for the advancement of Islamic civilization in the present and future very well. 5.6% of students demonstrated good ability in formulating such contributions. 16.7% of students showed insufficient ability. The remainder were unable to formulate their contributions. When calculating the overall average score, it can be concluded that all students can demonstrate Islamic behavior; possess skills in leadership, management, human literacy, and self-development; are solution-oriented; and can think integratively. Thus, the four quadrants of graduate outcomes, which include attitude, knowledge, general skills, and specialized skills, have been fulfilled.

The reconstruction of the site using Chat GPT is not intended to burden the students, so the reconstruction of historical buildings is not aimed at absolute reconstruction. Rather, it is merely to understand the situation and the lifestyle of the community during the Islamic Mataram period. The students are particularly interested because there has been no previous learning experience of this kind. The lecturer ensures that the students' work has gone through the process as planned. Feedback is also provided when there are inappropriate word choices or writing errors. It is also recommended that the images presented are not only recreated using Chat GPT, but also photos taken during field trips. This is to compare the current real conditions with those of the past.

In previous years, students only attended field trips to the Sonobudoyo Museum, which has an overwhelming collection. This did not focus on the core topics covered in this course. Additionally, at that time, there were no assignments requiring illustration using ChatGPT. There was also no group division for discussions on different topics. The Course Learning Outcomes (CPMK) are aligned with the Graduate Learning Outcomes (CPL). This is because the CPL places greater emphasis on the spirit of innovation in solving problems. Students have made efforts to innovate in solving the problems given in group projects. Improvements to the CPMK are not yet considered necessary.

Assignments and exams are aligned with the CPMK being measured. This is because assignments are based on the CPMK, not the other way around. No improvements have been made yet because the CPMK formulation is still applicable. Since it is the main topic of learning, the CPMK related to the project is given a weight of 60% so that students are truly focused on the learning scenario. CPMK measurement for history-oriented courses does not necessarily have to be done through written exams. Assignments can be used. This is because mid-term and final exams are merely time-bound events. It does not mean that measurement must be conducted at those two specific times. Assignments and exams are authentic. This is because the scenarios and problems given are tailored to real-world conditions in the field. Additionally, before the field trip, students receive material about the sites they will visit from practitioners during classroom instruction. Thus, students already have an idea of what to expect when they visit. The visit to Plered is conducted once, as is the visit to the UII Museum. The field study at Plered is counted as two sessions because, according to the Regulation of the Minister of Education, Culture, Research, and Technology of the Republic of Indonesia (RI) No. 53 of 2023, 1 Credit Hour (SKS) is equivalent to 45 hours [22].

The duration of the field study aligns with this new regulation. The learning activities developed have been varied and successful in engaging students to actively learn through learning by doing, thinking, and reflecting. This is evident during practitioner lectures, field trips, and project completion. A supporting factor for student-centered learning is the relatively small number of course participants, allowing for smaller group sizes and facilitating Student-Centered Learning (SCL). Additionally, students are from the International Program class, where the composition of students tends to remain unchanged from the beginning until graduation. This differs from regular classes, where there is a

possibility of changes in student personnel. Thus, student cohesion is already strongly established. There are currently no plans to improve the activities.

Interaction and collaboration among students, as well as their interaction with lecturers, have developed. A supporting factor is that the previous course in the previous semester was also taught by the same lecturer. This is beneficial, especially since both lecturers and students already know each other's characters. It is not yet possible to improve the interaction scenario. The learning process has developed higher-order thinking skills (HOTS). This is because students have undergone a critical thinking process, such as illustrating practitioners' explanations and observations during field lectures in site reconstructions with the help of ChatGPT. They are also able to analyze the results of the illustrations and incorporate them into narrative scripts.

The learning approach/method/strategy used aligns with the CPMK. This is because one of the key elements of the CPMK is innovative problem-solving, which is reflected in the learning method that emphasizes this aspect. Students can also gain additional knowledge as it is not solely sourced from the instructor. The study materials were adequate, suitable for CPMK development, and interesting for students. This was evident in the students' enthusiasm to learn about the historical sites they visited. This was because all these cultural heritage sites were almost destroyed, leaving only ruins. Students did not come to the field study just to listen to practitioners' explanations about intact historical sites.

The CPMK framework, along with learning activities and materials, has been integrated into the context and application of real-life problems. For example, when students solve problems involving reconstruction based on observations during field lectures and information from practitioners, they can apply this in their daily lives. This demonstrates that to uncover the truth about something, direct confirmation at the location and facts from those who understand are necessary.

Students have received adequate feedback on their assignments and assessments to improve their learning. This is evidenced by monitoring the students' process from practitioner lectures, field trips, and group discussions. Especially in group discussions, students receive input from both the lecturer and practitioners. Appreciation is also given to groups that complete their assignments perfectly. Each student has been encouraged to reflect on the learning process and outcomes. This is because each topic is recommended to be applied in daily life. For example, the historical sites visited include a mosque, Kedaton Plered, a town square, and Kedaton Kerta. Students also frequently improvise in the creation of their papers. One example is critiquing the actual function of the town square as an open space for the public, rather than its current state.

A “WOW” moment occurred when the instructor realized there was an issue they hadn't considered, but the students were able to help resolve it. While the instructor was focused on explaining to the students how to give commands to Chat GPT to reconstruct the ruins of the historical site, the students were able to present engaging visuals, including comparisons with current photos, allowing readers to easily imagine the past. Student engagement when using Chat GPT becomes stronger because the learning process is more engaging, especially during discussions with peers [23]. The key to success in developing students' understanding and skills is the provision of feedback from both parties, the instructor and practitioners, ensuring a second opinion [24].

Things that need to be maintained are the number of students, which should not be too large, as this greatly supports the learning scenario. Things that need to be improved are student activity levels. This is still considered reasonable because students do not have a background in history. However, because this course is compulsory, students are required to know and understand the subject matter. Things that need to be avoided are allowing students to use laptops when they are not actually needed in the learning process. The tendency is for students to work on assignments for other courses instead. Ideas that emerged during the learning process include asking students presenting group discussion

results to pose questions to their peers who are reluctant to contribute to the discussion. This is done to keep the learning process student-centered. After such prompts, it was observed that students from other groups began asking questions.

Things that other instructors in other courses can utilize include the presence of Chat GPT, which is useful in assisting the learning process. It should not be the primary source from which students simply copy and paste [25]. Field trips that guide students to analyze the results of their visits can also be considered as a learning option. It should not merely involve visiting a location just to observe the situation and conditions [26]. The planned changes to be included in the upcoming Semester Learning Plan (SLP) are related to field trips. The location does not need to be far away. It can be at the UII Museum, which is still within the scope of this course. It can also be at other locations if students are not burdened and do not feel that the location is too far away. Appreciation can be given in the form of lectures being counted as more than one meeting. This includes adjustments to the SLP.

There are no significant changes to the learning plan. This can be demonstrated by the limited changes to the course content and teaching methods. Only five sessions differ between the plan and the implementation. This means there are still nine face-to-face sessions that remain the same as the previous plan. In other words, 64% of the learning aligns with the plan. The changes are more related to teaching methods and study materials. Regarding teaching methods, as previously explained, field lectures in Pleret, Bantul, are counted as two sessions due to the significant distance students must travel. Additionally, the teaching method for the final session was changed because, a few days before the class meeting, news spread that a film related to the topic of the final session would be screened in theaters. The change in the lecture theme was more about adjusting the schedule to accommodate the increased frequency of field lectures.

Efforts to change were made so that the learning topics could still be conveyed. This was certainly done to meet the CPMK. The learning method was more of a variation in lectures. This was so that students would not think that learning history was boring [27]. Watching movies at the cinema was believed to provide students with a different perspective on the history of the Islamic movement in Indonesia. The result of the changes made is that students feel more “valued” because the time spent traveling to the field study location is also counted as part of the lecture duration. Additionally, the study materials have become more enriched and ensure compliance with the CPMK. The change in methods has also successfully made it easier for students to understand and analyze the learning topics. On the other hand, it can shift their perception of Islamic history, which may seem outdated, into something interesting to study [28].

This program has helped improve the quality of learning in lectures. One proof of this is the increase in student attendance rates compared to the previous year. In the second semester of 2022/2023, the student attendance rate was 90.35%. This increased in the second semester of 2023/2024 when the program was implemented, reaching 93.66%. It is believed that the reason for the increase in attendance rates is due to the variety of learning methods, which make it easier for students to understand the subject matter [29].

The CPMK achievement level has not been met. One of the indicators is the decline in the average final score. This is because two students did not take the final exam, so their CPMK could not be measured. Ultimately, one student was able to take the remedial exam and still met the CPMK requirements. However, the other student was unable to register for the remedial exam because their attendance rate did not meet the minimum requirements. The minimum attendance requirement of 75% is a regulation set by the Directorate General of Higher Education, Ministry of Education, Science, and Technology of the Republic of Indonesia. The limiting factor is that some students did not meet the attendance requirement, not only in this course but also in other classes. This indicates that these students tend to be reluctant to attend classes regularly. Despite this, the attendance rate of students has increased compared to the previous year.

The plan for the continuation of the program is to maintain discussion topics, although it may no longer use the same teaching methods. This is because it requires significant funding. Field lectures can still be implemented, but the travel distance should not be too far. It is recommended that the study program continue to hold practitioner lectures that are fully supported by the budget. Lecturers teaching the same course are also allowed to duplicate this learning program. It is recommended that lecturers teaching other courses pay close attention to student attendance to minimize failure in the final exams.

Based on the evaluation sheets provided, the following lessons learned can be conveyed. The classes taken by the students focused on in-depth learning about the history and development of Islam, especially in the context of Yogyakarta. They also gained a deep understanding of the history of Islamic civilization, including the contributions of Muslim figures to science and the development of Islam in Indonesia, especially through the influence of institutions such as UII. There was an interesting finding during the evaluation, particularly among international students. They expressed interest in the field study sites. This is because all historical sites are well-maintained, even though only ruins remain. Such a sight is not easily found in some countries, especially in the Middle East, due to differing ideological views on the preservation of historical heritage. The main reason is veneration. A key strategy to attract international students is to instill the understanding that Islam in Indonesia is unique, especially the process of its arrival as a religion bearing the mission of “*Rahmatan lil 'Alamin*” (Mercy to All Creation) [30].

Fundamental information that students can gain from this learning experience is that they can appreciate the past. Everything that exists today is the result of efforts made in the past. Additionally, the sites visited guide students to understand that a place can be considered an Islamic city if it meets four criteria or is outlined in the Catur Gatra. These include a mosque, a palace, a square, and a market. The four represent religious, political, social, and economic aspects. Human life cannot be separated from these four areas.

Students also explored the interaction between Islam and local culture in Yogyakarta, studied the history of the kingdoms in Yogyakarta, and examined the significant roles played by Islamic figures in establishing educational institutions and spreading Islamic teachings. They gained insights into historical sites such as the Kerta Palace, Plered Palace, and the Ancient Plered Royal Mosque, which provided practical and in-depth context for their learning. Overall, this class offers a comprehensive view of the history of Islam and its role in shaping culture and education in Yogyakarta. Participants not only gained knowledge about Islamic teachings and history but also gained a broader understanding of the interaction between Islam and local culture, as well as how Islamic education has developed and adapted in Indonesia. The learning gained in this class was in-depth and holistic, providing a strong foundation for participants to understand and appreciate Islamic heritage and its application in everyday life.

The advantages or benefits gained from group project-based learning, combined with lectures from practitioners, and the use of ChatGPT. This approach has proven effective in improving communication skills, deepening knowledge, and providing new perspectives through interaction and collaboration among group members. In addition, this method also encourages increased self-confidence and trust among team members, as tasks carried out together require close coordination and cooperation. Furthermore, lectures by practitioners provide in-depth insights, inspiration, and motivation from experienced professionals, helping to update and enrich the information being taught. This approach also encourages active learning that allows the application of knowledge in real-world contexts, making the learning process more relevant and meaningful. Field visits conducted before using Chat GPT to illustrate certain concepts also provide a better context, helping students understand the locations or history being studied in greater depth.

Project-based group learning supported by practitioner lectures and Chat GPT has also proven effective in preparing students to face challenges in a world increasingly driven by

technology. By promoting collaboration, innovation, and critical thinking skills, this approach prepares students to adapt quickly to future changes and demands. In the context of Islamic education in Indonesia, the integration of AI, such as ChatGPT, must be accompanied by infrastructure readiness and cultural sensitivity [31]. Therefore, it is important to maintain this approach in education, as it not only enhances efficiency and flexibility in teaching but also provides a holistic and interactive learning experience. By leveraging the latest technology and facilitating continuous access to in-depth knowledge from practitioners, this approach ensures that the teaching and learning process remains relevant and effective in the future, especially in the context of Islamic studies and other disciplines that require an interdisciplinary approach.

Project-based group learning that integrates practitioner lectures and ChatGPT offers many benefits but also has some drawbacks that need to be addressed. One of the main advantages of this approach is its ability to visualize historical sites more effectively and enrich understanding of Islamic history through a combination of practitioner lectures and field visits. However, the main challenges include reliance on technology, lack of human interaction, and potential bias from ChatGPT. Additionally, there are difficulties in applying the complex concept of Chat GPT to real-world projects, as well as issues related to access and use of technology, such as the subscription requirement for Chat GPT, which may not be affordable for all students. Coordination within groups can also be complicated, especially when there are differences of opinion that can cause misalignment in group tasks. Reliance on technology can make students prone to laziness in learning, and over-focusing on Chat GPT may overshadow the importance of conventional learning methods and critical thinking skills.

Other issues identified include ChatGPT illustrations that may not always be accurate based on journals or books, uncertainty in the delivery of material by experts that is sometimes irrelevant to the group project, and a complicated verification process when accessing ChatGPT accounts. There are also concerns about inequality in group project participation, which can lead to uneven workloads and unfair assessments. To address these weaknesses, a fair project assessment system, effective management tools, additional Q&A sessions with practitioners, more advanced Chat GPT development, and a balance between technology use and human interaction are needed. It is also important to ensure equitable access to technology for all students and to use high-quality data to train ChatGPT to provide more accurate and relevant results. With these improvements, the learning experience using Chat GPT can become more inclusive and effective, allowing students to leverage the benefits of technology while maintaining the importance of conventional learning methods and the development of social and critical skills.

In addition, this class also improves critical thinking skills through the analysis of historical and religious texts, as well as honing creativity in using ChatGPT to create illustrations. Interaction within diverse teams strengthens empathy and social awareness, while discussions and presentations improve communication skills. Through group projects and field activities, participants gain better observation skills and an appreciation for cultural heritage. The ability to disseminate accurate information, collaborate, and prepare papers and presentations is also a key focus in developing participants' skills. All these skills are invaluable in preparing participants to face future professional challenges, whether in an educational or workplace context. This course not only equips participants with theoretical knowledge but also with essential practical skills for success in diverse and dynamic environments.

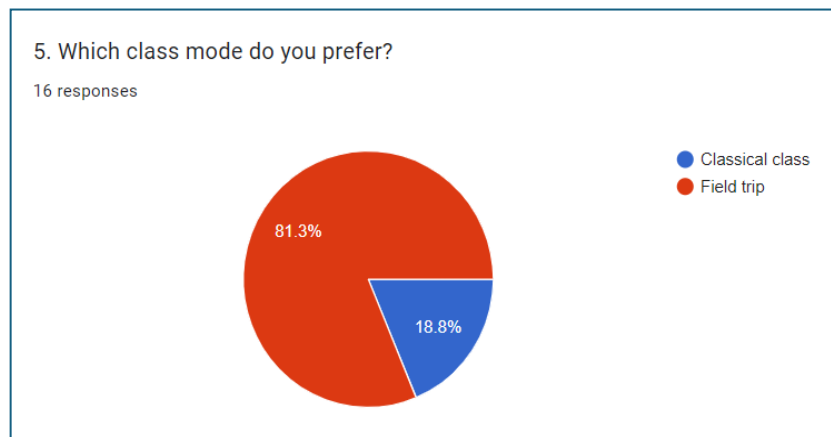


Figure 1. Student learning style preferences

As many as 81.3% of students admitted that they were more inclined to choose field studies in learning than classical methods. Learning methods that combine group projects, practitioner lectures, and the use of ChatGPT can significantly improve students' understanding of Islam. Group projects allow for in-depth discussions from various perspectives, while practitioner lectures provide authoritative insights from experts. The use of ChatGPT is also very helpful in visualizing complex concepts and analyzing data in depth, making the material on Islam easier to understand and more interesting.

Additionally, this method broadens students' horizons not only within the classroom but also outside of it, helping them better understand historical structures and buildings, as well as providing essential references for their assignments. This combination encourages critical thinking, debate, and deeper analysis of Islamic texts and concepts, thereby providing a richer and more interactive learning experience. Learning methods that involve field trips, watching films, and studying Islamic history, especially about figures such as Ali bin Abi Thalib and Abu Bakar ash-Shiddiq, are very interesting and effective. Direct field experiences, such as in Plered, provide a deeper and more tangible understanding, while studying leadership in Islam through historical examples enhances students' understanding of leadership principles and Islamic history. These activities not only enrich students' knowledge but also make learning more engaging and relevant for them.

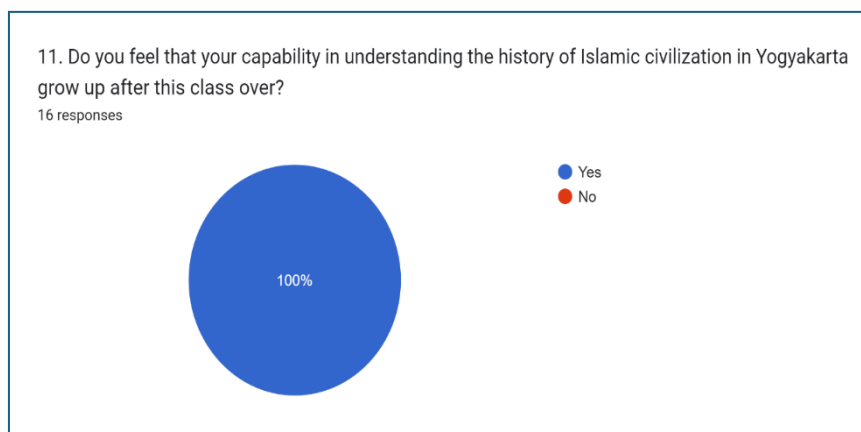


Figure 2. Ability to understand

Something is interesting about students' ability to understand the history of Islamic civilization in Yogyakarta after completing their studies. All students claim that their understanding has improved. This is certainly a positive achievement that deserves appreciation. The responses in the survey are directly proportional to the scores obtained after accumulation.

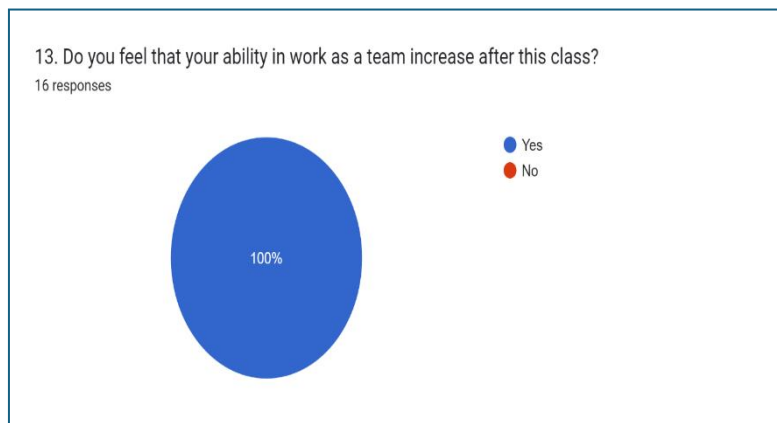


Figure 3. Additional student skills

Students' ability to work in teams has improved significantly. Through group projects and collaborative activities, they gain practical experience in communication, coordination, and problem-solving. This class also helps participants to better understand their roles and responsibilities in a team, improve their task-sharing skills, and utilize the strengths of each member. This experience not only strengthens collaboration skills but also fosters innovation and creativity in working together, as well as enhancing trust among team members. It has been proven that all students have improved their teamwork skills.

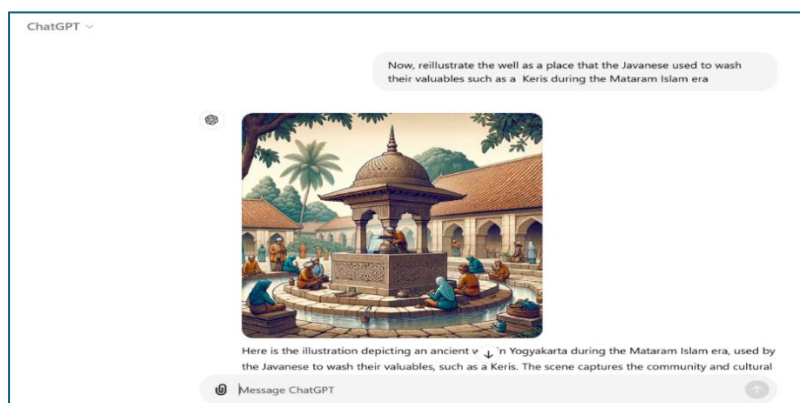


Figure 4. Examples of prompts used in repetition

From the observer's perspective, there are several noteworthy points to highlight. The learning process dynamics among students combined the concepts of learning by doing, thinking, and reflecting. During the group presentation sessions, variations in preparation and student engagement were evident; some groups appeared more prepared and effective in delivering the material, while others showed a lack of depth in understanding the topic. This learning activity utilized technological tools such as ChatGPT to support comprehension and visualization of the material, including topics like Islamic history and local culture in Yogyakarta. Although the use of AI and other technologies proved helpful, there remains a need to improve subject mastery and encourage active participation from all students, including fostering more questions and discussions. This aligns with previous related research indicating that the use of ChatGPT significantly enhances learning performance and higher-order thinking skills [32].

Feedback from practitioners and lecturers plays a crucial role in guiding and correcting mistakes, as well as encouraging critical reflection. An interactive and lively learning atmosphere, supported by engaging in learning media such as images and visualizations, adds value to the students' learning experience. It is also considered important to address learning obstacles, such as distractions from gadget use, and to improve both literacy and

the content being delivered. This student-centered learning approach has successfully achieved its intended goals, though further improvements are still needed to enhance the quality of the learning process. An unexpected outcome was that one student did not meet the minimum attendance requirement and therefore was not allowed to take the final exam, as had been previously explained. The impact on the research was that not all students demonstrated a good understanding of the SDGs from a quantitative perspective. However, qualitatively, the students showed a good level of understanding of the SDGs. The contribution of this research to the fields of Islamic studies and the SDGs is a reaffirmation that the domain of Islamic scholarship is fundamentally capable of supporting all the goals set by the United Nations. Although this study has so far been able to link only nine of those goals, it demonstrates that the SDGs can indeed be addressed through courses based on the history of Islamic civilization.

Fulfillment of the SDGs

Based on the research findings, it can be discussed that students' understanding of the SDGs can be supported through the learning process in the “Islam for Scholars” course. The following points provide a simplified explanation. First, Quality Education (Goal 4). The development of learning methods in this course contributes to the realization of increasingly high-quality education. Quality education naturally produces equally qualified graduates, thereby supporting the preparation of a golden generation by 2045. The skills acquired throughout the educational process can help students develop their careers in the future [33]. Second, Gender Equality (Goal 5). It is undeniable that 88% of the students enrolled in this course are female. During the learning process, it was evident that they actively participated in communication and collaboration, fulfilling the expected learning outcomes. There was no gender bias in the learning environment. Similarly, the male students did not feel discouraged despite being a minority. This class also demonstrates that access to education for women is not restricted [34].

Third, Clean Water and Sanitation (Goal 6). It is undeniable that in the Plered Palace (Keraton Plered), there is a water source known as Sumur Gumuling. This well has been revitalized using Special Autonomy Funds (Dana Keistimewaan). During the “Islam for Scholars” course, students conducted a reenactment of the environment surrounding Sumur Gumuling, as shown in Figure 5. The existence of this water source is clearly beneficial for human life, both in terms of quality and quantity [35]. Fourth, Affordable and Clean Energy (Goal 7). At several sites visited, it was observed that almost all of them apply the concept of affordable and clean energy. The Pleret Mosque with its natural ventilation, the Plered and Kerta Palaces with their architectural designs that optimize natural lighting and airflow, and of course, the Alun-alun (public square), which is an accessible green open space for the public. These features contribute positively to the development of renewable energy [36].

Fifth, Industry, Innovation, and Infrastructure (Goal 9). The fact that several historical sites remain intact, though not completely, indicates that infrastructure development during that period was already a necessity. For example, the Plered Palace (Keraton Pleret) was first used in 1649, meaning it dates back 376 years. The use of high-quality bricks supports the durability of the infrastructure within the site. The Plered site teaches today's generation about sustainable industry, promotes inclusivity, encourages innovation, and fosters infrastructure resilience [37]. Sixth, Sustainable Cities and Communities (Goal 11). The Plered and Kerta sites are tangible examples of sustainable cities in the past. As previously explained, the Catur Gatra concept demonstrates that Plered and Kerta had a far-sighted vision for sustainability. The presence of the mosque, palace, public square (alun-alun), and market all represent components of a sustainable city. At that time, the community already embraced key aspects of urban governance [38].

Seventh, Life on Land (Goal 15). During the field study, students directly observed that all cultural heritage sites are in lowland areas and surrounded by vegetation. They were not

allowed to damage the plants around the sites, even if some of the vegetation interfered with aesthetics. Of course, this did not apply to wild plants that were clearly disruptive. This practice is part of a strategy to preserve biodiversity [39]. Eighth, Peace, Justice, and Strong Institutions (Goal 16). History offers lessons from the past so that mistakes are not repeated, especially if they involve injustice or conflict. This was certainly studied by students in the “Islam for Scholars” course. Historical facts show that Susuhunan Amangkurat I failed to maintain peace in his kingdom, which eventually led to the emergence of stronger institutions. One piece of evidence is the attack by Trunojoyo from Madura in 1677. Political perspectives must therefore be considered in the context of sustainable development [40].

Ninth, Partnerships for the Goals (Goal 17). Reflecting on the Trunojoyo rebellion tragedy, students can learn that realizing sustainable development requires building partnerships with others. This is closely related to the Islamic concept of consistently fostering good relationships with others. Severing relationships is not permissible. The necessity of playing a coordinating role within an organization becomes inevitable [41]. Recommendations for future research are directed towards linking Islamic education or courses that discuss the history of Islamic civilization with the other eight SDGs not covered in this study. It is hoped that through this, a comprehensive understanding can be achieved that the history of Islamic civilization is closely connected with the SDGs, not just partially.

Analysis

The implementation of classroom action research in the Islam for Scholars course demonstrates how participatory and experimental learning models can effectively enhance students’ understanding of the Sustainable Development Goals (SDGs). By positioning the researcher as an active participant throughout the learning cycle—planning, implementation, assessment, and reporting—this approach allows for a contextual and reflective analysis of learning dynamics, ensuring responsiveness to student needs and real-time pedagogical improvement. This model strongly supports SDG 4 (Quality Education) by promoting inclusive, adaptive, and learner-centered educational practices.

The experimental dimension of the research provides empirical insights into the effectiveness of various instructional strategies, including project-based learning, collaborative methods, digital media integration, and practitioner-led lectures. These strategies foster critical thinking, problem-solving, and ethical reflection, aligning with SDG 9 (Industry, Innovation, and Infrastructure) through the integration of innovative digital tools such as ChatGPT. The supervised use of ChatGPT enables students to reconstruct historical sites and analyze socio-religious contexts without compromising academic integrity, ensuring technology serves as an assistive rather than substitutive learning resource. Field lectures conducted at historically significant sites in Plered further strengthen experiential learning.

Despite the physical deterioration of these locations, the combination of on-site observation and AI-assisted reconstruction facilitates deeper historical and ethical understanding. This method contributes to SDG 11 (Sustainable Cities and Communities) by raising awareness of cultural heritage preservation and sustainable urban development from an Islamic perspective. Moreover, discussions surrounding environmental degradation and historical continuity reinforce principles related to SDG 13 (Climate Action). Group-based project learning enhances collaboration, communication, and social responsibility among students.

CONCLUSION

This study concludes that optimizing ChatGPT in the Islam for Scholars course substantially enhances students’ comprehension, engagement, and critical awareness of the Sustainable Development Goals (SDGs). The learning outcomes demonstrate alignment

with several key SDGs, particularly SDG 4 (Quality Education), SDG 5 (Gender Equality), SDG 6 (Clean Water and Sanitation), SDG 7 (Affordable and Clean Energy), SDG 9 (Industry, Innovation, and Infrastructure), SDG 11 (Sustainable Cities and Communities), SDG 13 (Climate Action), SDG 16 (Peace, Justice, and Strong Institutions), and SDG 17 (Partnerships for the Goals). Through an integrative pedagogical framework, ChatGPT supports the internalization of global sustainability principles within Islamic epistemological and ethical foundations. First, ChatGPT effectively serves as a bridge between theory and practice by contextualizing Islamic teachings—derived from the Qur'an, Sunnah, and classical scholarship—within contemporary SDG challenges. This approach strengthens students' ability to connect religious values with practical solutions for social justice, environmental stewardship, and inclusive development, thereby reinforcing the objectives of SDG 4 and SDG 16. Second, the inclusion of field trips enhances experiential learning by allowing students to directly observe issues related to environmental sustainability, water management, urban development, and social equity. When supported by ChatGPT-assisted reflection, these activities deepen students' understanding of SDG 6, SDG 11, and SDG 13, linking empirical realities with Islamic ethical responsibility (*amanah* and *khilafah*). Third, ChatGPT facilitates student comprehension through simplified reconstructions of historical Islamic sites and civilizations. This method improves historical literacy and demonstrates how past Muslim societies contributed to innovation, sustainable urban planning, and knowledge transmission. Such insights align with SDG 9, highlighting the role of innovation and cultural heritage in sustainable development. Fourth, measurement and feedback function as essential learning tools. ChatGPT enables continuous assessment, formative feedback, and reflective learning, ensuring that students' cognitive and ethical development remains aligned with SDG-oriented competencies. This process strengthens the quality and inclusivity of education in line with SDG 4. Fifth, collaboration and interaction supported by ChatGPT foster communication, teamwork, and social awareness. Group-based discussions on gender justice, social inclusion, and ethical leadership contribute directly to SDG 5 and SDG 16, while also cultivating empathy and intercultural understanding among students. Sixth, innovation in learning design significantly increases student motivation and engagement.

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Author Contribution

All authors contributed substantially to this study. SMH served as the principal investigator and project chairman, MS acted as a core research member, IH was responsible for translation and language accuracy, while DSP conducted final editing and ensured the manuscript's academic consistency.

Conflicts of Interest

The authors declare no conflicts of interest regarding this study entitled Optimizing ChatGPT in Islamic Education to Enhance Students' Understanding of the Sustainable Development Goals. The research involved scholars from Universitas Islam Indonesia, Universitas Terbuka, UIN Sunan Kalijaga, and Universiti Islam Selangor.

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