



From digital attendance to moral formation: An axiological analysis of discipline, responsibility, and character in Islamic education

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Abstract

This study aims to analyze the role of digital attendance in shaping student character in madrasahs from the perspective of Islamic education axiology. The research uses a qualitative approach with a case study design. Data were collected through semi-structured interviews, observations, and documentation, involving the head of the madrasah, the deputy head of student affairs, teachers, students, and digital attendance operators as informants. Data were analyzed using thematic analysis through the stages of transcription, repeated reading, initial coding, categorization, theme preparation, and interpretation. The results of the study show that digital attendance not only functions as an attendance administration system but also as an instrument for instilling discipline, responsibility, honesty, order, and the internalization of Islamic values in madrasah life. This system helps build more objective, monitored attendance governance and serves as the basis for student development through supervision, consequences, and disciplinary routines. From the perspective of Islamic education axiology, digital attendance can be interpreted as a medium of moral formation when integrated with the values of trust, istiqamah, responsibility, and respect for time. However, its effectiveness still depends on technical readiness, teacher supervision, madrasah culture, parental support, and the sustainable development of values. This research contributes to the development of technology-based Islamic education studies by positioning digital attendance not only as a tool of administrative control but also as a medium for value education and the formation of students' religious character.

Keywords: Digital Attendance; Axiology of Islamic Education; Religious Character; Discipline; Responsibility.

Abstrak

Penelitian ini bertujuan untuk menganalisis peran absensi digital dalam pembentukan karakter siswa di madrasah melalui perspektif aksiologi pendidikan Islam. Penelitian menggunakan pendekatan kualitatif dengan desain studi kasus. Data dikumpulkan melalui wawancara semi-terstruktur, observasi, dan dokumentasi dengan melibatkan kepala madrasah, wakil kepala bidang kesiswaan, guru, siswa, dan operator absensi digital sebagai informan. Data dianalisis menggunakan analisis tematik melalui tahapan transkripsi, pembacaan berulang, pengkodean awal, kategorisasi, penyusunan tema, dan interpretasi. Hasil penelitian menunjukkan bahwa absensi digital tidak hanya berfungsi sebagai sistem administrasi kehadiran, tetapi juga menjadi instrumen pembiasaan disiplin, tanggung jawab, kejujuran, keteraturan, dan internalisasi nilai Islam dalam kehidupan madrasah. Sistem ini membantu membangun tata kelola kehadiran yang lebih objektif dan terpantau, sekaligus menjadi dasar pembinaan siswa melalui pengawasan, konsekuensi, dan rutinitas

kedisiplinan. Dalam perspektif aksiologi pendidikan Islam, absensi digital dapat dimaknai sebagai media pembentukan akhlak apabila diintegrasikan dengan nilai amanah, istiqamah, tanggung jawab, dan penghargaan terhadap waktu. Namun, efektivitasnya tetap bergantung pada kesiapan teknis, pengawasan guru, budaya madrasah, dukungan orang tua, dan pembinaan nilai secara berkelanjutan. Penelitian ini berkontribusi pada pengembangan kajian pendidikan Islam berbasis teknologi dengan menempatkan absensi digital bukan hanya sebagai alat kontrol administratif, tetapi juga sebagai media pendidikan nilai dan pembentukan karakter religius siswa.

Kata kunci: Absensi Digital; Aksiologi Pendidikan Islam; Karakter Religius; Disiplin; Tanggung Jawab.

Introduction

The digitalization of education has encouraged madrasahs to strengthen student attendance governance through a faster, more accurate, and monitored digital attendance system. Previous research shows that digital attendance systems based on QR codes, barcodes, Android, RFID, and face recognition can improve the efficiency of recording, identity validation, data manipulation prevention, and *real-time attendance monitoring*. (Budiman et al., 2023; Elaskari et al., 2021; Sunaryono et al., 2021). However, the use of technology in education is not sufficiently understood as an administrative tool, because technology also needs to be directed at the formation of ethical behavior, responsibility, digital awareness, and integrity of students (Alenezi & Alfaleh, 2024; Assante et al., 2022; Prasetyo et al., 2022). In the context of Islamic education, punctual attendance, honesty in attendance, and responsibility for learning obligations have a moral meaning related to the formation of morals, internalization of values, and habituation of character in madrasah life (Alabdulhadi & Alkandari, 2024; Osman, 2024). Therefore, the problem of this research lies in the limited number of studies that view digital attendance not only as an attendance administration system but also as a medium for fostering discipline, responsibility, honesty, order, and religious character in students from the perspective of Islamic educational axiology.

Several studies show that digital attendance was developed to overcome the drawbacks of manual attendance performance, especially in improving accuracy, administrative efficiency, identity validation, and automated attendance monitoring through RFID, face recognition, Android, QR codes, barcodes, and deep learning (Mohammed et al., 2018; Sunaryono et al., 2021; Elaskari et al., 2021; Alhanaee et al., 2021; Budiman et al., 2023; Patel et al., 2025). Another study emphasizes that educational technology needs to be directed toward the development of ethical behavior, responsibility, personal values, digital awareness, and students' integrity (Assante et al., 2022; Alenezi & Alfaleh, 2024). In addition, research on Islamic education shows that character formation requires the internalization of moral values, teacher role modeling, school culture, curriculum, and moral habituation in daily educational life (Alabdulhadi, 2024; Osman, 2024). However, there has been little research that specifically links digital attendance to the formation of student character in the context of madrasah, particularly from an axiological perspective in Islamic education. The research gap in this research lies in explaining how digital attendance can function not only as an attendance administration system, but also as a medium for the formation of discipline, responsibility, honesty, and religious character of students.

Based on the research gap, this study aims to analyze the role of digital attendance in the formation of student character in MAN 1 Palembang City from the perspective of Islamic education axiology. In particular, this study answers the formulation of problems regarding how digital attendance functions as an instrument of discipline and attendance governance, how the system strengthens the values of student responsibility, honesty, and order, how digital attendance is interpreted as a medium for moral habituation and internalization of Islamic values, as well as the technical, pedagogical, and social challenges faced in its implementation. Thus, this study places digital attendance not only as an attendance administration system, but also as part of the value education process in madrasah life.

The contribution of this research lies in its effort to expand the study of digital attendance from merely an attendance administration system to a medium for character formation in Islamic education. Theoretically, this research provides a new perspective that attendance technology can be read through the axiological approach of Islamic education, especially in strengthening the values of discipline, responsibility, honesty, order, trust, and *istiqamah*. Practically, this research provides input for madrasahs in managing digital attendance not only as a tool for recording attendance but also as a basis for student development, strengthening the culture of discipline, the involvement of teachers and parents, and internalizing moral values in school routines. Thus, this research contributes to the development of technology-based madrasah governance that remains oriented towards the formation of students' religious character.

Methods

This research uses a qualitative approach with a case study design to understand in depth the meaning of the use of digital attendance in the formation of discipline, responsibility, and character of students in the context of Islamic education (Ahmed et al., 2025; DeMatthews et al., 2026). This design was chosen because the research does not aim to test causal relationships statistically, but rather to interpret how the practice of digital attendance is understood, carried out, and interpreted by education actors as a means of instilling value in madrasahs. The research focuses on MAN 1 Palembang City as an institutional context that has implemented a digital attendance system, to enable a detailed study of the relationship among the use of technology, the culture of madrasah discipline, and the process of internalizing moral values.

The research participants were determined through the purposive sampling technique, which is the deliberate selection of informants based on their involvement, experience, and knowledge of the implementation of digital attendance in madrasahs (Ahmad & Wilkins, 2025; Annur, 2018). The research participants consisted of madrasah heads, deputy madrasah heads for student affairs, teachers, students, and digital attendance system operators (Dahal et al., 2024; DeMatthews et al., 2026). The head of the madrasah was chosen because he had authority in institutional policy, the deputy head of student affairs was chosen because of his role in the supervision of discipline and student development, teachers were chosen because they were involved in the habituation of grades and behavior evaluation, students were chosen because they experienced firsthand the application of the system in daily school life, while operators

were chosen because they understood the technical and administrative aspects of the implementation of digital attendance (Ames et al., 2019; Bouncken et al., 2026). The selection of informants from these various roles is intended to ensure that the data obtained represent diverse yet complementary perspectives on the phenomenon being studied.

1. Data Collection Techniques

Research data were collected through semi-structured interviews, observations, and documentation to gain an in-depth, contextual understanding of the phenomenon under study (DeMatthews et al., 2026; Lim, 2024). Semi-structured interviews were used to explore the views and experiences of participants regarding the background of the implementation of digital attendance, its implementation mechanism, the values to be instilled, its contribution to the formation of discipline and responsibility, changes in student behavior, and challenges faced in its implementation (Adeoye-Olatunde & Olenik, 2021; Xu et al., 2025). Observations were conducted to observe firsthand the practice of digital attendance in daily life at the madrasah, including patterns of student arrivals, the attendance process, supervision, follow-up on delays, and accompanying forms of habituation (Musante & DeWalt, 2010; Uwamusi & Ajisebiyawo, 2023). Documentation is used to complete the data by examining the madrasah rules, student attendance recapitulation, digital attendance system reports, coaching records, and other relevant documents (Laugerud, 2026; Morgan, 2022).

2. Data Analysis

Data were analyzed using thematic analysis through the stages of transcription, repeat reading, initial coding, categorization, theme preparation, and interpretation (Zairul, 2025; Wilson, 2025). All interviews, observation notes, and documents are read repeatedly to gain a thorough understanding, then coded based on units of meaning relevant to the focus of the research, such as discipline, responsibility, honesty, order, habituation, supervision, consequences, and character formation (Kushnir, 2025; Naeem et al., 2023). These codes are then grouped into meaning-related categories to produce key themes (Zairul, 2025; Wæraas et al., 2025). The themes that emerge are not only read descriptively but also interpreted from an axiological perspective in Islamic education, so that it can be seen how digital attendance functions not only as an administrative tool but also as a medium for internalizing values.

3. Data Validity

The validity of the data is maintained through the application of trustworthiness, which includes source triangulation, technique triangulation, repeated reading, and checking interpretation consistency (Lochmiller et al., 2026; Mutanana & Shoko, 2026). Source triangulation is carried out by comparing information from madrasah heads, deputy heads of student affairs, teachers, students, and operators, while technical triangulation is carried out by matching interview results with observation and documentation data (Chand, 2025; Dahal et al., 2024). Researchers also conduct rereading's of transcripts, field notes, and documents to ensure the accuracy of data coding, categorization, and interpretation. These steps are taken to ensure that the themes produced remain consistent with the field data, thereby increasing the credibility, accuracy, and consistency of the research findings.

4. Ethical Considerations

This study adheres to the ethical principles of qualitative research by first obtaining permission from MAN 1 Palembang City, the research site, and by explaining the purpose, focus, and form of participant involvement in the research. Participation by informants is voluntary, so each informant has the right to provide or withhold certain information and to stop their involvement at any time. To maintain confidentiality and the convenience of participants, the informant's identity is disguised when reporting research results, using the informant's code or category. All data obtained is used only for academic purposes and analyzed carefully while maintaining academic honesty and avoiding manipulation or distortion of the information provided by the participants.

Result and Discussion

A. Result

1. Digital attendance as an instrument of discipline and attendance governance

Digital attendance at MAN 1 Palembang City was initially implemented to improve the effectiveness of student attendance governance, particularly in recording accuracy, administrative efficiency, and information transparency. However, in practice, this system also serves as an instrument for developing discipline by allowing student attendance to be monitored in real time, consistently, and with measurable accuracy. The head of the madrasah emphasized that the use of digital attendance is driven by the need to overcome the limitations of the manual system, which is considered less efficient and error-prone. He stated:

The background of the use of digital attendance in madrasas is to increase the effectiveness and accuracy of recording student attendance. The manual system is considered less efficient and error-prone. In addition, digital attendance also supports the transformation of madrasas in the use of technology and increases transparency to parents (W, interview, April 20, 2026).

The statement shows that digital attendance is understood not only as an administrative tool but also as a more accountable form of school governance. This is reinforced by the operator explaining that the RFID system automatically records students' arrivals, classifies attendance status, and generates daily reports for school evaluation. The operator states:

The RFID system can accurately track various data, including students' arrival and departure times, daily attendance status such as present, late, excused, sick, or absent, attendance summaries by student and by class—both weekly and semesterly—patterns of student absenteeism, and each student's attendance percentage for administrative reference (OP, interview, April 20, 2026).

The observation results show that the digital attendance system has been integrated into the madrasah's morning routine. Students *tap in* on an RFID device at the entrance before entering the school environment. This process shows that attendance recording is no longer just an administrative procedure but part of a systematic, monitored attendance management process. This condition is shown in Figure 1, which depicts students' implementation of digital attendance in the madrasah entrance area.

In the context of the formation of discipline, this system accustomed students to be present on time because every delay and absence was recorded directly. The head of the madrasah explained: Digital attendance records attendance in real-time, so students are encouraged to show up on time. With a monitored and consistent system, students learn that any tardiness or absence has consequences. This helps to form disciplinary habits (W, interview, April 20, 2026).

This finding was reinforced by the deputy head of the madrasah for student affairs, who emphasized that late students were not only recorded but also given stage-based coaching based on the severity of the violation. He stated:

Students who are late will be recorded in the system and given guidance, such as verbal or written reprimands. In addition, madrasahs foster positive habits, such as reading the holy verses of the Qur'an together in the madrasah mosque. If violations occur repeatedly, parents will be summoned, and further guidance will be carried out according to the applicable rules (WK, interview, April 20, 2026).

Thus, digital attendance serves as an attendance management instrument that, at the same time, fosters discipline through monitoring, consequences, and the habituation to on-time attendance routines.



Figure 1. The implementation of digital attendance for students using RFID devices at the madrasah entrance.

2. Responsibility, honesty, and order as strengthened values

The study's findings show that digital attendance reinforces the value of responsibility, honesty, and regularity in students' school lives. This system conveys the understanding that attendance is not just a formal obligation but a personal responsibility that must be maintained and accounted for. The head of the madrasah affirmed:

Madrasah instills responsibility by providing an understanding that attendance is a personal obligation of students. Attendance data can be accessed and monitored, so students learn to take responsibility for their attendance without relying on others (W, interview, April 20, 2026).

This view was reinforced by the deputy head of student affairs, who emphasized that students are trained to attend independently and understand the consequences of tardiness and absence. He stated, "Students are trained by getting used to attending independently and understanding the consequences of absenteeism or tardiness. In

addition, they are coached to realize that attendance is a personal responsibility, not just a formal obligation.” (WK, interview, April 20, 2026).

At the same time, digital attendance reinforces honesty by limiting opportunities for attendance manipulation. One of the students stated:

In my opinion, the use of digital attendance at school is good. The system is fast, practical, and the data is accurate. Student attendance is recorded immediately so that no one can leave absences unrecorded. This makes the attendance process more orderly and fairer (SW, interview, April 20, 2026).

The students’ experience also shows the growth of personal responsibility. One of the students revealed, “Yes, I feel more responsible. With digital attendance, all attendance data is recorded privately. If I don’t show up or am late, I have to account for it. This makes me more aware that attendance is my own responsibility.” (SW, interview, April 20, 2026).

Another student added:

When I’m late or my attendance isn’t recorded, I feel uncomfortable and regretful because I’m worried about getting a reprimand and having my attendance points deducted. If I’m present but not recorded, I immediately report it to the staff so the data can be corrected (SW, interview, April 20, 2026).

The observation results support these findings. During attendance, students appear to take turns and independently tap into the available tools, without being represented by other friends. This process demonstrates both individual responsibility and procedural regularity in recording attendance. This condition can be seen in Figure 2, which shows students attending directly and in an orderly manner at the school entrance area. This documentation confirms that the values of responsibility, honesty, and regularity are strengthened through an objective system and independent student participation.



Figure 2. Students tap in independently to demonstrate responsibility, honesty, and discipline.
Source: Personal Documentation

3. Digital attendance as a media for moral habituation and internalization of Islamic values

Digital attendance is interpreted not only as an administrative tool, but also as a medium for habituating morals and internalizing Islamic values. The teacher explained that the digital attendance system serves an educational function: by providing a consistent system, students are trained to be honest, disciplined, and aware that every action must be accounted for. The teacher stated:

Digital attendance not only functions as a tool for recording attendance, but also as a means of habituating morals. Through a consistent system, students are trained to be honest in attendance, disciplined with time, and have an awareness that their every action is recorded and must be accounted for (*GR, interview, April 20, 2026*).

Teachers also associate discipline with Islamic values, especially *amanah*, *istiqamah*, and worship. He explained:

The habituation of discipline is related to the value of trust, namely carrying out obligations well, *istiqamah* in the consistency of doing good, and responsibility. Punctual attendance is seen as a form of maintaining trust as a student and practicing *istiqamah* in carrying out daily obligations (*GR, interview, April 20, 2026*).

In addition, the teacher emphasized that student development is carried out through an exemplary approach and a religious understanding of the importance of time in Islam. He stated:

Students are directed through a coaching and exemplary approach. Teachers provide an understanding of the importance of time in Islam and relate discipline to the value of worship. Thus, students are expected to have an awareness that discipline is a personal need, not just an imposed obligation (*GR, interview, April 20, 2026*).

The deputy head of student affairs also explained that students who were late were not only reprimanded but also encouraged to participate in religious activities, such as reading the Qur'an together in madrasah mosques. He said:

Students who are late will be recorded in the system and given guidance, such as verbal or written reprimands. In addition, madrasahs also make positive habits, for example, reading the holy verses of the Qur'an together in the madrasah mosque (*WK, interview, April 20, 2026*).

The results of the observation reinforce this meaning. After the arrival process, students follow the morning routine with an orderly attitude, dress neatly, and be in an organized line. In the context of the madrasah, this activity not only demonstrates institutional order but also serves as a space for the habituation of respect, order, and obedience to common rules. This situation is illustrated in Figure 3, which shows students' morning apple intake as part of the madrasah's culture of discipline and moral habituation. Thus, digital attendance serves as an entry point to a broader moral habituation: from attendance recording to daily discipline, and ultimately to the internalization of Islamic values.



Figure 3. Students' morning apples in the madrasah field as a form of habituation of collective discipline, order, and internalization of Islamic values.

Source: Personal Documentation

4. The Challenge of character building through digital attendance

Although the results of the study show a positive contribution of digital attendance to the formation of student discipline, responsibility, and morals, the study also found that the system's effectiveness does not occur automatically. Several technical, pedagogical, and social challenges affect the success of character formation. The head of the madrasah emphasized:

The main challenges include the readiness of technological infrastructure, the adaptation of students and teachers to the new system, and ensuring that the use of technology is not only administrative, but also truly interpreted as a means of character building (*W, interview, April 20, 2026*).

From the operational side, the operator explained several common technical obstacles, such as damaged or lost RFID cards, network disruptions, reader errors, and students who did not tap in, requiring manual input. The operator stated:

Some of the technical obstacles that often occur include damaged or lost RFID cards due to bending, being exposed to water, or forgetting to be carried by students; network disruptions that cause data not to be properly synchronized to the server; reader devices that are error or hang, especially when many students are tap-in at the same time in the morning; and there are students who do not tap-in so that the operator must do manual input as backup data (*OP, interview, April 20, 2026*).

In addition to the technical factors, the teacher highlighted a more substantive challenge: how to shift students' mindset from simply following the rules to internal awareness. The teacher also explained that the family environment, home habits, & peer influence play a role in supporting or hindering character formation. He stated: "The main challenge is to change the mindset of students from simply following the rules to internal awareness. In addition, environmental factors, habits at home, & peer influence also influence the character formation process (*GR, interview, April 20, 2026*)."

The results of the observation show that implementing digital attendance requires operational readiness, queue conditioning, and continuous supervision to ensure orderly operation. The documentation also shows that morning activities in madrasahs involve many students at once, so character formation is not enough to rely solely on technological devices and requires consistent institutional management. This condition can be seen in Figure 4, which shows the line-up of students in madrasah morning activities. This image confirms that the success of character formation through digital attendance is supported by school culture, supervision, and social readiness that accompany its implementation.



Figure 4. Student Lineup in Madrasah Morning Activities

Source: Personal Documentation

Overall, the study's results show that digital attendance at MAN 1 Palembang City has moved beyond its administrative function of recording attendance. In practice, this system functions as an instrument of discipline and attendance governance, strengthens responsibility, honesty, and order, serves as a medium for the moral habituation and internalization of Islamic values, and faces technical, pedagogical, and social challenges in the process of character building. Thus, digital attendance in the context of madrasas not only plays a role in attendance management, but also becomes part of the value education process in daily school life.

B. Discussion

Digital attendance at MAN 1 Palembang City functions as a disciplinary instrument as well as student attendance management. This system not only records attendance in real time, accurately and measurably, but also fosters behavioral regularity through on-time attendance habits, arrival monitoring, and consequences for tardiness. These findings are in line with previous research that shows that IoT, RFID, and facial recognition-based attendance systems can speed up recording, improve identification accuracy, and support automatic attendance monitoring (Lin & Huang, 2022; Nguyen et al., 2022). In the context of digital education, attendance data can also be used to monitor student engagement, assess learning discipline, and support data-driven decision-making (Kamruzzaman et al., 2023; Lu & Cutumisu, 2022). Other research also confirms that the use of digital technology in education management can improve administrative efficiency, strengthen the monitoring of student activities, and help educational institutions manage learning behavior data more systematically (Haugom, 2022; Molla-Esparza et al., 2025). Thus, digital attendance functions not only as an administrative tool but also as an instrument of institutional supervision that supports the formation of discipline, provided it is integrated with madrasah rules, student development, teacher supervision, and a culture of timely attendance.

Digital attendance at MAN 1 Palembang City plays a role in strengthening student responsibility, honesty, and order. This system accustomed students to *tap independently, eliminating the need for attendance check-in and requiring students to be accountable for delays or absences recorded in the system*. This finding is in line with previous research emphasizing that education in the digital era needs to focus on developing safe, ethical, responsible, and integrity-based behavior when using technology (Alenezi & Alfaleh, 2024; M. Jaedi et al., 2025; Zhong et al., 2022). Other studies also show that digital education is not enough to emphasize technology mastery but also needs to strengthen students' personal values, ethical awareness, independence, and responsibility (Assante et al., 2022; Muassomah et al., 2022; Purnomo et al., 2026). This study explains that students' responsibility and honesty in using digital attendance are not solely due to the existence of RFID devices, but also to consistent habituation, teacher supervision, clear rules, and a madrasah culture that treats attendance as part of moral responsibility. Thus, digital attendance serves not only as an attendance control mechanism but also as a means of character education, strengthening students' honesty, responsibility, and regularity.

The findings further show that digital attendance at MAN 1 Palembang City functions as a medium for habituating morals and internalizing Islamic values. Punctual attendance, honesty in reporting attendance, responsibility for learning obligations, and willingness to accept guidance regarding tardiness are understood as part of the values of trust, *istiqamah*, time discipline, and responsibility in Islam. These findings are in line with previous research that emphasizes that Islamic education needs to contribute to the formation of moral responsibility, citizenship, and ethical behavior of students in a changing social life (Essabane et al., 2022; Yağdı, 2025). Other studies also show that education in the digital era needs to be directed at the formation of personal values, ethical responsibility, digital citizenship, and wise behavior in using technology (Alenezi & Alfaleh, 2024; Assante et al., 2022). This study explains that the internalization of Islamic values in MAN 1 Palembang City occurs not only through Classroom religious learning but also through attendance management, morning routines, late-student coaching, and a culture of *madrrasah* discipline. However, digital attendance can only serve as a medium for moral habituation if it is imbued with a religious meaning by teachers and *madrassas*; without value coaching, this system risks producing only administrative compliance, not the moral awareness that grows from within students.

The findings of this study also show that character formation through digital attendance faces technical, pedagogical, and social challenges. Technical challenges relate to RFID cards, networks, reader devices, and manual input requirements, while pedagogical challenges concern efforts to translate students' compliance with the system into internal awareness. These findings are in line with previous research that showed that IoT, RFID, cloud, web server, and database-based attendance systems can improve the efficiency of logging, real-time monitoring, and attendance management, but their implementation still demands infrastructure readiness, device integration, data security, and user support (Bugingo et al., 2025; Sunny et al., 2024). This study explains that the challenges of digital attendance in *madrassas* are not only technical but also pedagogical, namely, how to make the attendance system a means of fostering moral awareness, not just a tool for disciplinary control. Thus, the success of digital attendance is measured not only by the device's operation but also by its ability to support value development, communication with parents, and the sustainable formation of student character.

The findings of this study imply that digital attendance at MAN 1 Palembang City not only functions as an attendance recording system, but also as a strategy for discipline governance and student character formation through strengthening data accuracy, monitoring arrival, habituating attendance on time, and internalizing the values of responsibility, honesty, trust, *istiqamah*, and discipline. However, this study has limitations because it only focuses on one *madrrasah*, has not quantitatively measured the impact of digital attendance on reducing student tardiness or character change in the long term, and is still influenced by technical readiness, such as RFID cards, networks, reader devices, manual inputs, and human resource support. In addition, the function of digital attendance as a medium for fostering Islamic values remains highly dependent on the role of teachers and *madrrasah* culture; without pedagogical and religious meaning, this system risks becoming only a tool of administrative control, not a means of forming students' moral awareness.

Based on these limitations, further research is suggested to expand the study to several madrassas to obtain a more comprehensive comparison of the effectiveness of digital attendance across different institutional contexts. The next research can also use a mixed approach so that the impact of digital attendance on student discipline can be analyzed through quantitative data, such as rates of tardiness and attendance, and changes in student behavior, and deepened through interviews, observations, and documentation. For madrassas, strengthening digital attendance needs to be directed not only at improving devices and networks but also at preparing clear coaching procedures and involving homeroom teachers, BK teachers, students, and parents in following up on student attendance data. In addition, digital attendance should be integrated with moral habituation programs, morning routines, religious advice, and discipline reflection so that this system not only ensures formal compliance but also builds students' moral awareness over time.

Conclusion

Digital attendance in the context of madrassas not only serves to record attendance but can also be part of shaping student character when managed in an educational and value-based manner. Through a monitored, objective, and consistent system, digital attendance can strengthen discipline, responsibility, honesty, order, and students' awareness of their learning obligations. From the perspective of Islamic education axiology, this practice can be interpreted as a space for moral habituation because the values of trust, *istiqamah*, responsibility, and respect for time can be instilled through daily attendance routines. However, the educational function of digital attendance will not function optimally if it is only positioned as an administrative instrument; therefore, teacher coaching, examples, madrasah culture, parental involvement, and sustainable religious meaning are needed so that technology truly supports the formation of students' religious character.

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