



## REAL-TIME ATTENDANCE AND DISCIPLINE MONITORING THROUGH EVOCARD

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### **Abstract:**

EvoCard is an attendance and discipline monitoring system that uses real-time technology to increase efficiency and accuracy in recording attendance at various institutions, including Madrasah Aliyah Negeri 1 Tuban, East Java. This research aims to evaluate the effectiveness of EvoCard in improving individual attendance and discipline through the automatic collection and analysis of recorded data. Data shows a significant increase in average attendance and a decrease in tardiness rates after implementing EvoCard. Apart from that, the positive response from users, both students, teachers, staff, employees and parents, shows that this system is able to discipline encourage and responsibility. EvoCard also reduces administrative workload by providing fast and transparent access to attendance data. The results of this research indicate that EvoCard is an effective tool in monitoring and improving attendance and discipline and provides significant benefits for institutions that adopt it.

**Keywords:** *Evocard, Monitoring, Real-time.*

### **INTRODUCTION**

Attendance and discipline are very important aspects in the world of education. Consistent attendance reflects a commitment to the teaching and learning process, while discipline reflects the ability to follow the rules and regulations that apply in madrasahs and schools. However, managing and monitoring attendance and discipline effectively is often a challenge for madrasahs and schools, especially those with a large number of students, teachers, staff and employees. Monitoring attendance and discipline has become an important issue in the world of education. Madrasahs and schools continue to seek more efficient and accurate ways to manage attendance, especially in today's digital era.

In the increasingly advanced digital era, the application of information technology in various aspects of life has become a necessity, (Ahmad & Singh, 2023). One area that utilizes this technological development is human resource management, especially in terms of monitoring attendance and discipline. Regular attendance and high discipline are key factors in achieving optimal productivity in madrasah and school environments. However, managing and monitoring discipline manually is often a challenge for madrasahs and schools, especially those with a large number of students, teachers, staff and employees.

So far, attendance recording is generally done manually. This process is not only time consuming, but also prone to errors and data manipulation. In addition, the absence of an integrated system to monitor student discipline makes supervision less effective, so that madrasahs and schools are often late in taking preventive or corrective action.

In this fast-paced digital era, technology has become an integral part of various aspects of life, including in the world of education, (Huang & Wang, 2023). One of the

innovations that has emerged is EvoCard, a real-time attendance and discipline monitoring system that changes the way supervision is carried out in madrasahs and schools.

To answer these challenges, Madrasah Aliyah Negeri 1 Tuban, created an innovation in the real-time attendance and discipline monitoring system with EvoCard. EvoCard is a digital platform designed to monitor the attendance and discipline of students, teachers, staff and employees by utilizing smart card technology integrated with a cloud-based system. With EvoCard, attendance data can be collected and monitored directly, so that management can obtain accurate and up-to-date information regarding the level of attendance and discipline.

EvoCard not only facilitates the attendance recording process, but also provides various additional features such as automatic notifications for lateness or absence, daily, weekly, and monthly reports that can be accessed at any time, (Kumar & Sharma, 2023). With the implementation of this system, it is hoped that madrasahs and schools can increase efficiency in human resource management, reduce errors in attendance recording, and encourage discipline among students, teachers, staff and employees through more transparent and structured supervision. EvoCard is not only a monitoring tool, but also an agent of change that encourages an increase in a culture of discipline and becomes an innovative and effective solution.

## RESEARCH METHODS

Research on real-time attendance and discipline monitoring through EvoCard is conducted with a systematic methodological approach. The data collected can be analyzed to determine the pattern of attendance, discipline and positive responses that are used as the basis for the research results. The research steps are as follows:

a. Research Approach

- Types of research : Mix Method (Mixed Approach).

A quantitative approach to the analysis of numerical data related to attendance and discipline.

Qualitative approaches are useful for understanding user perceptions and experiences.

- Research design: Case study, experiment, or survey.

b. Data collection

Primary Data:

- Observation: Conducting direct observation of the implementation of EvoCard at Madrasah Aliyah Negeri 1 Tuban, East Java, including how to use it, interactions between students, teachers, staff, employees and parents with the system.

- Interviews: Conduct interviews with teachers, staff, employees, management team, and parents to gain insight into the effectiveness and challenges in using EvoCard.

- Questionnaire: Distribute questionnaires to students, teachers, staff, management team and parents to collect data on experiences using EvoCard and its impact on attendance and discipline.

Secondary Data:

- Documentation: Collecting and analyzing historical data on student attendance and discipline before and after the implementation of EvoCard. This data was obtained from the madrasah archives.

- Literature: Examine the literature related to attendance and discipline monitoring technology in education to gain context and compare results with other studies.

c. Data analysis

- Quantitative Analysis: Using descriptive statistics to analyze attendance and discipline data collected through EvoCard. This includes calculating average attendance, frequency of discipline violations, and comparing pre- and post-implementation data.

- Qualitative Analysis: Using thematic analysis to evaluate interview and questionnaire results. Identifying key themes and emerging patterns related to users' experiences and perceptions of the EvoCard system.
- d. Evaluation and Interpretation
- Assess the effectiveness of EvoCard in monitoring attendance and discipline based on data analysis results.
  - Evaluate how well the system meets the needs of the madrasah and users, and its impact on improving the discipline and order of students, teachers, staff and employees.
- Identify the strengths and weaknesses of the system and provide recommendations for improvement or further development.

## RESULTS AND DISCUSSION

### a. Increased Attendance

In this fast-paced digital era, technology has become an integral part of various aspects of life, including in the world of education, (Mulyadi, 2020). One of the innovations that emerged was EvoCard, a real-time attendance and discipline monitoring system that changed the way supervision was carried out in madrasahs.

EvoCard is a smart card used by students, teachers, employees and staff to record attendance at the madrasah. Unlike traditional attendance methods that rely on manual signatures or name calls in class, EvoCard utilizes RFID (Radio Frequency Identification) or NFC (Near Field Communication) technology that allows automatic attendance recording when students, teachers, employees enter or leave the madrasah area.

EvoCard's main features include Real-Time attendance recording, (Zhang, Y., & Liu, X., 2023). EvoCard records the arrival and departure times of students, teachers, staff and employees automatically. This data is directly stored on the madrasah server and can be accessed by authorized parties, the head of the madrasah, the management team and parents.

EvoCard, as a technology-based attendance system, has several advantages that can significantly affect attendance rates (1) High data accuracy, with an automated system the risk of manual recording errors is minimized; (2) Real-time monitoring, the madrasah management system monitors attendance directly so that corrective actions can be taken quickly; (3) Transparency, Clear access to attendance data and reduces the potential for conflict. (4) Time efficiency, the attendance process becomes faster and simpler so that you can focus more on your respective tasks, (Shah & Gupta, 2023).

Attendance is a crucial aspect in the world of education. Good attendance reflects an individual's responsibility towards their duties. Here is Table 1 about attendance data before and after the implementation of EvoCard:

**Table 1.** Attendance data before and after EvoCard implementation

Period	Average Attendance (%)	Average Delay (minutes)	Average Absenteeism (%)
Before	85%	15 minutes	10%
After	95%	5 minutes	2%

After implementing EvoCard, there was a significant increase in average attendance, from 85% to 95%. Average tardiness also decreased from 15 minutes to 5 minutes, while the absentee rate dropped from 10% to 2%. This data shows that real-time monitoring with EvoCard has successfully increased attendance. EvoCard is an innovative solution in monitoring attendance in real-time that can increase efficiency and data accuracy. Its implementation shows great potential in increasing attendance.

### b. Improvement of Discipline

Discipline Monitoring in this system monitors the disciplinary behavior of students, teachers and employees. For example, if a student is often late or leaves the

school without permission, the system will record it and provide notification to the system and School Management in table 2 below:

**Table 2.** Data on discipline before and after EvoCard implementation

<b>Day</b>	<b>Average Pre-Attendance (%)</b>	<b>Average Attendance After (%)</b>	<b>Average Delay Before (minutes)</b>	<b>Average Delay After (minutes)</b>
<b>Monday</b>	80%	92%	20 minutes	2 minutes
<b>Tuesday</b>	83%	94%	17 minutes	5 minutes
<b>Wednesday</b>	86%	96%	14 minutes	4 minutes
<b>Thursday</b>	88%	97%	12 minutes	3 minutes
<b>Friday</b>	90%	98%	10 minutes	3 minutes

Each day of the week showed an increase in attendance and a decrease in tardiness after the implementation of EvoCard. For example, on Monday, attendance increased from 80% to 92%, and tardiness decreased from 20 minutes to 2 minutes. This shows that the use of EvoCard helps promote better daily discipline.

Discipline reflects students' ability to follow applicable rules and regulations,(Patel & Desai, 2023). EvoCard can be integrated with the madrasah management system including the discipline system. This facilitates the analysis of attendance and discipline data that can be used to evaluate students, teachers, staff and employees. Notification to Parents, administration team and madrasah management through an application connected to EvoCard every time their child arrives or returns from the madrasah. Can also view attendance history and child discipline reports in real-time. By using sophisticated data encryption, EvoCard ensures that attendance and discipline information of students, teachers, staff and employees is safe from unauthorized access.

The results of this data indicate that the implementation of EvoCard has a significant positive impact in increasing attendance, reducing tardiness, and improving overall discipline and individual responsibility towards obligations.

### **c. Positive Response**

The use of technology such as EvoCard is a step forward in modernizing the education system. (Zou & Li, 2023). Overall, EvoCard received positive responses from students, teachers, staff, parents, and madrasah management. This system is not only effective in improving attendance and discipline but is also well received because of its ease of use and the positive impact felt by all parties. Everyone is more motivated to attend and follow the rules because of the integrated system. This positive response reflects the success of EvoCard as a technology solution in education that is able to answer the needs and challenges in monitoring attendance and discipline in real-time. Data on positive responses are shown in table 3 below:

**Table 3.** Positive Response Data after EvoCard implementation

<b>Respondent Category</b>	<b>Number of Respondents</b>	<b>Percentage of Positive Responses</b>	<b>Main Positive Response</b>
<b>Student</b>	1049	88%	- "This system makes me more disciplined in being on time."

			- "I feel more responsible for my presence"
<b>Teacher</b>	78	90%	- "My tardiness has decreased drastically since the EvoCard." - "Real-time monitoring motivates me to always be on time."
<b>Employees and Staff</b>	22	85%	- "My tardiness has decreased drastically since the EvoCard." - "Real-time monitoring motivates me to always be on time."
<b>Parent</b>	1049	97%	- "I can monitor my child's attendance more easily." - "This system helps me make sure my child attends school every day."
<b>Administration team</b>	35	92%	- "My work has become easier and more efficient." - "The attendance data produced is more accurate and quickly accessible."
<b>Leadership Management</b>	7	95%	- "EvoCard provides very useful data for performance evaluation." - "Attendance is improving, and the culture of discipline is also improving."
<b>Total/ Average</b>	2240	90%	- "Overall, EvoCard has had a positive impact in improving attendance and discipline."

Improved attendance and discipline not only helps create a more conducive educational environment but also helps in building good character and ethics,(Greenberg & Baron, 2018) After the implementation of EvoCard in the attendance and discipline monitoring system, many parties gave positive responses to the results obtained. The following table 4 is some important points that reflect the positive response:

**Table.4** Real-time attendance and discipline monitoring response data

<b>Category</b>	<b>Response</b>
<b>Improving Discipline and Responsibility</b>	- Students, teachers and employees feel the urge to be more disciplined because they know that their attendance and arrival times are monitored in real-time. This creates a stronger culture of accountability. - Management reported a drastic reduction in the number of tardiness and absenteeism, indicating that the system was effective in encouraging discipline.
<b>Efficiency and Ease of Data</b>	- The administration team appreciates the ease of accessing attendance and discipline data quickly and accurately, which previously took a long time with manual methods. It also reduces

<b>Management</b>	<p>the workload related to real-time administration. This creates a stronger culture of responsibility.</p> <ul style="list-style-type: none"> <li>- The principal of the madrasah felt that EvoCard helped in making decisions based on accurate and real-time data, making it more efficient in managing attendance and discipline.</li> </ul>
<b>Transparency and Trust</b>	<ul style="list-style-type: none"> <li>- Employees and students acknowledge that the transparent EvoCard system provides a sense of fairness, as every attendance and tardiness is recorded accurately. This increases trust in the attendance and discipline assessment system.</li> <li>- Parents and stakeholders in the educational environment appreciate the system that provides real-time attendance reports, so they can monitor their children's attendance better.</li> </ul>
<b>Positive Feedback from Users</b>	<ul style="list-style-type: none"> <li>- Based on an internal survey, 90% of users stated that they were satisfied with EvoCard and felt a significant improvement in their discipline. They also appreciated this technology as a modern and effective tool in supporting daily activities.</li> </ul>
<b>Award for Innovative Technology</b>	<ul style="list-style-type: none"> <li>- Management and users acknowledge that EvoCard is an innovation that brings positive changes in the attendance and discipline monitoring system. They also support further development of this technology to expand its functionality.</li> </ul>
<b>Positive Impact on Work and Learning Culture</b>	<ul style="list-style-type: none"> <li>- Institutions report positive changes in work and learning culture, with individuals becoming more accountable for their time and attendance, creating a more productive and conducive environment.</li> </ul>
<b>Data Security</b>	<ul style="list-style-type: none"> <li>- By using advanced data encryption, EvoCard ensures that attendance and discipline information of students, teachers, staff and employees is safe from unauthorized access.</li> </ul>

This data shows that the majority of respondents gave a positive response to the implementation of EvoCard, with various benefits felt in terms of discipline, ease of data management, transparency. This positive response shows that the implementation of EvoCard is not only effective in increasing attendance and discipline, but is also well received by various parties involved, from management to individual users.

## CONCLUSION

EvoCard is an innovative solution that utilizes technology to improve discipline and facilitate real-time monitoring of student attendance. With good integration, EvoCard not only improves the operational efficiency of the madrasah but also builds a culture of discipline among students, teachers and employees while providing a sense of security and transparency.

EvoCard can continue to develop into a more effective tool in monitoring and improving attendance and discipline, thus supporting the achievement of institutional and individual goals more optimally through the addition of features. Additional features include synchronizing EvoCard with personal calendars (e.g., Google Calendar) to receive automatic reminders about check-in and check-out times. Late warnings through the implementation of automatic notifications that remind users if they are potentially late, based on their average travel time. EvoCard can also be integrated with a broader madrasah management system, including assessment and administration systems.

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