

## IMPLEMENTATION AND IMPACT OF DIGITAL ABSENCE IN EDUCATION

Moch Rizal Maulana<sup>1</sup>, Miftahus Sudur<sup>2</sup>, Rudi Agus Wilantara<sup>3</sup>, Andika Fajri As'ari<sup>4</sup>,  
Arico Ayani Suparto<sup>5\*</sup>

<sup>1,2,3,4,5</sup> STKIP PGRI Situbondo, Indonesia

e-mail : [caca13rico@gmail.com](mailto:caca13rico@gmail.com)

---

**Abstract:** This study examines the implementation and impact of digital attendance systems in education. Digital attendance is a technological innovation that replaces manual attendance systems using electronic devices such as web-based applications or specialized software. This study explores the effectiveness of digital attendance implementation in improving administrative efficiency, the accuracy of attendance data, and the monitoring of teaching and learning activities. It also analyzes its impact on student engagement, attendance compliance, and the learning process. The research employs quantitative and qualitative approaches by collecting data through surveys, interviews, and document analysis. The findings indicate that digital attendance enhances operational efficiency and facilitates real-time student attendance monitoring. However, implementing this technology also faces challenges, such as technical issues and user resistance. These findings contribute to developing policies and strategies for adopting educational technology to support school digital transformation.

**Keywords:** Digital Attendance, Educational Technology, Administrative Efficiency, Student Engagement, Learning Process Monitoring

---

Copyright (c) 2024 The Authors. This is an open-access article under the CC BY-SA 4.0 license (<https://creativecommons.org/licenses/by-sa/4.0/>)

### INTRODUCTION

In today's digital era, information technology has become integral to various aspects of life, including education. Using technology in education increases the efficiency and effectiveness of the teaching and learning process. One of the problems often faced in schools is student attendance management. The manual attendance process is still widely used in schools but is usually time-consuming, prone to errors, and complicated in the data recapitulation process. Therefore, technology is applied that can help the attendance process in schools so that there is no need to use manual attendance (Karaman et al., 2024). A digital attendance system is important in implementing teaching and learning activities in various institutions, from elementary school to college. Therefore, it is necessary to implement a digital attendance with a QR Code system to replace the manual attendance system. This is also in line with research conducted by (Sitinjak et al., 2022). Digital attendance has become a popular and effective solution in various contexts, helping teachers improve efficiency, accuracy, and security in tracking student attendance (Azizah et al., 2024).

Attendance is the recording of attendance values, part of the reporting of an institution's activities, and an institution component that contains attendance data that is arranged and arranged so that it is easy to find and use if needed by interested parties. According to (Malah et al., 2022). Digital attendance is the recording of attendance (attendance) with a cloud system connected to a database in real time. QR codes allow the attendance process to be carried out quickly and accurately by scanning the available code (Kurnia & Maulid, 2024). This is quite helpful for schools in recording student attendance online (Bagus Arisena et al., 2023).

Student attendance is an inseparable aspect of the teaching and learning process at school. (Negara et al., 2024). Digital attendance systems still using manuals tend to have several significant weaknesses; recording student attendance often takes time, especially during entry or break times. In addition, the attendance data produced is often inaccurate and difficult to access in real-time. Research by (Kurnia & Maulid, 2024). In this case, it is stated that the manual attendance system is hazardous regarding writing errors. To achieve this goal, good human resource management is crucial, assisted by the development of digital technology (Fitri et al., 2024).

Attendance monitors a person's presence at an activity (Muhammad Arifin & Widiyarta, 2021). One of the benefits of this attendance is Higher Data Accuracy. The digital attendance system tends to be more accurate and reliable than manual attendance recording. This can reduce errors associated with manual recording, such as writing or calculation errors (Pramesti & Tri Febrianto, 2024).

Therefore, technology can be applied to help the attendance process in schools so that there is no need to use manual attendance. (Karaman et al., 2024) According to Armawati et al., the attendance system, according to their research, is software created to facilitate work and reduce errors in manual attendance recording, such as incorrect data input or loss of physical evidence of attendance records (Armawati et al., 2023).

In addition, the attendance data that has been entered can be easily accessed anywhere and anytime, as long as the user remains connected to the internet network (Andana et al., 2023). This proves that digital attendance is also more efficient. The attendance system, according to Armawati et al. in their research, is in the form of software created to facilitate work and reduce errors in manual attendance recording, for example, incorrect data input or loss of physical evidence of attendance records (Aizah & Santoso, 2024).

Several sources above state that implementing digital attendance in education is very good because it triggers fewer typos for teachers.

## **METHOD**

This study uses the Systematic Literature Review (SLR) method with the stages of identification, review, evaluation, and interpretation of all available research. In this method, researchers conduct structured reviews and identification of journals, following the steps that have been set (Rahayu & Vahmi, 2022).

The researchers supplemented their findings with articles from the Google Scholar database and the SINTA site provided by the Ministry of Education and Culture. The keywords used in the search included "digital attendance application," "attendance," "education," "implementation," and "digital attendance." The number of articles used was

20 national journal articles, which were then reviewed, and researchers used five. All articles used in this study have been certified, related to the keywords used, and published between 2020 and 2024.

The literature review search stage includes determining the eligibility criteria for a document, which are determined by the inclusion criteria (IC). In this study, there are two eligibility criteria for the articles studied, namely:

IC1: Articles are the result of research and searches in Indonesian.

IC2: This article aims to research the extent to which the use of Digital Attendance is effective in various development methods.

The steps for selecting literature are:

1. Determine the keywords to be selected.
2. Selecting articles, titles, abstracts, and keywords in articles obtained at the stage of determining the eligibility criteria.
3. Read the article and then determine whether the article is worthy of being included in the following study.
4. Find other relevant studies by reviewing the reference lists of selected articles.
5. Articles related to the reference list search will be checked in steps 3 to 4.
6. The keywords used in determining the selected articles include Attendance, Digital Attendance Application, Digital Attendance, Implementation, and Education.

## RESULT AND DISCUSSION

### Result

The results of the research conducted in this literature review are an analysis and summary of documented articles related to the implementation and impact of digital attendance in education, presented in the following table.

NO	Name and Year	Article Title	Journal	Results
1	(Kamila et al., 2024 )	Android-Based Attendance Application in Boarding Schools as a Digital Transformation in the Education Sector	Nuance of Informatics	The implementation of this system has successfully assisted in the digital attendance process with system test results showing good performance. This is indicated by system elements that function according to the requirements and needs of the user. System performance is also proven by the integration of attendance data with a report feature that allows management to view attendance

---

				<p>recording results in real time or download report results. These reports are available in an easy-to-read format and can be accessed at any time, making it easier to evaluate and make decisions regarding staff attendance.</p>
2	(Saputra & Dristyana, 2024)	Implementation of Object-Based Digital Attendance Technology to Improve the Quality of the Teaching and Learning Process in Higher Education	journal of Research in Engineering, Technology, and Applied Sciences	<p>This system is designed to automate the attendance recording process, reduce manual errors, and provide accurate and real-time attendance reports. In this system, several main classes are identified, including the classes "Lecturer," "Student," "Schedule," and "Attendance." . " The "Lecturer" and "Student" classes contain basic information and methods related to the individual, such as name, identification number, and method for recording.</p>
3	(Ayu & Mustofa, 2020)	Attendance Application System Using Android-Based Barcode Scanner Technology	Journal of Research and Development	<p>The result of this research is in the form of an attendance application system using an Android-based barcode scanner. Where this application is divided into two types of applications, the first application is a desktop-based application used by the admin to manage all data needed in the attendance process. The next application is an Android-based application used by</p>

---

				lecturers and students for the purposes of the attendance process.
4	(Budiasto et al., 2023)	Website-Based Student Attendance Recording Information System at State Senior High School 1 Kurikkota Makassar	Journal of Technology & Information	This research produces a Website-Based Student Attendance Recording Information System at SMA Negeri 1 Kurik which is made to assist the school in recording student attendance and summarizing student attendance both daily and monthly with the help of a computerized system and replacing the old system currently running which still uses books and pens as markers when attendance is taken. In addition, the current system has several shortcomings, namely, books are prone to damage, loss, or scattering.
5	(Pramesti & Tri Febrianto, 2024)	Implementation of Digital Attendance System to Improve Efficiency of Teacher Attendance Recording in Elementary Schools	Journal of Informatics Engineering Students	Design of Student Attendance System Using Appsheet Application. Based on the research the author did the use of Appsheet for the attendance system. After that run Google spreadsheet, to create data files and attendance sheets.

---

## Discussion

**RQ1: How is the implementation process of a digital attendance system in educational institutions?**

Implementing a digital attendance system has proven to be a practical step in improving the efficiency of recording teacher attendance in elementary schools. With the adoption of this technology, the attendance process becomes faster, more accurate, and easier to track. This makes school administrative tasks easier, helps increase teacher productivity, and provides more accurate information for school management. Based on RQ1 above, implementing digital attendance is very beneficial for education, which can increase the efficiency and accuracy of data.

**RQ2: How does the digital attendance system impact student attendance, teacher involvement, and the efficiency of educational administration?**

The results of the partial test showed that the variable of implementing a digital attendance system had a significant effect on student discipline. The coefficient of determination obtained was 0.642 or 64.2%, indicating that the variable of student discipline at STIM Sukma could explain the variations in the implementation of the digital attendance system. In comparison, the remaining 35.8% was explained by other variables not examined in this study. Based on RQ2, we can see the impact of using digital attendance, which is very useful in today's digital era, especially in education, to improve discipline.

## **CONCLUSION**

Based on the research results, digital attendance is beneficial in education because it can identify data errors. Implementing a digital attendance system in education significantly contributes to the efficiency and accuracy of the student and educator attendance system. This technology helps reduce manual errors, speed up data collection, and increases transparency in monitoring attendance levels. In addition, the digital attendance system also encourages the use of technology in the educational environment, which can increase discipline and awareness of the importance of attendance. However, challenges such as limited technological infrastructure and user readiness must be overcome so that the benefits of the digital attendance system can be obtained optimally and sustainably.

## **REFERENCES**

- Aizah, N., & Santoso, F. (2024). Implementation of Web-Based Student Attendance System Using Whatsapp Gateway at Sdn 2 Seletreng. *Semnas Ristek (National Seminar on Research and Technology Innovation)*, 8 (01), 309–314. <https://doi.org/10.30998/semnasristek.v8i01.7174>
- Andana, MH, Daffa, M., Erizakly, R., Candra, A., Iftatunnisa, PV, & Mujiastuti, R. (2023). *Socialization of Education on the Implementation of Digital QR Code Attendance for Students at Mtsn 23 Jakarta*.
- Ayu, F., & Mustofa, A. (2019). Attendance Application System Using Android-Based Barcode Scanner Technology. *It Journal Research and Development*, 4 (2), 94–103. [https://doi.org/10.25299/itjrd.2020.vol4\(2\).3642](https://doi.org/10.25299/itjrd.2020.vol4(2).3642)
- Azizah, N., Jannah, R., Sudur, M., Rahman, Z., & Muhammad, J. (2024). Increasing the Effectiveness of Using Digital Attendance in Teacher Recapitulation at Elementary School (Sd) in Trebungan Village. *Journal of Independent and Creative Society*

(Mardika), 2 (1), 1–9. <https://doi.org/10.55377/mardika.v2i1.9732>

- Bagus Arisena, A., Rifanda, AY, Lestari, RA, & Saputra, S. (2023). Design of Attendance System at SD Islam Durrotul Hikmah Using QR Code Scan. *TEKNOBIS: Journal of Technology, Business and Education*, 01 (01), 217–223. <https://jurnalmahasiswa.com/index.php/teknobis>
- Budiasto, J., Jayawardana, H., & Dewi, FAK (2023). Website-Based Student Attendance Recording Information System at Sma Negeri 1 Kurik. *Musamus Journal of Technology & Information*, 5 (02), 066–071. <https://doi.org/10.35724/mjti.v5i02.5384>
- Fitri, DR, Handayani, S., Yufriadi, F., Eliza, M., & Afifi, AA (2024). Implementation of RFID ID Card Attendance System for Calculating Honorarium, Employee Discipline, and Quality Improvement at Darulfunun El-Abbasiyah College. *Journal of Regional Development and Technology Initiatives*, 2 (March), 1–11. <https://doi.org/10.58764/j.jrdti.2024.2.48>
- Kamila, AR, Derhass, GH, Rabbani, DA, Andry, JF, & Lee, FS (2024). Android-Based Attendance Application in Boarding Schools as a Digital Transformation in the Field of Education. *Nuansa Informatika*, 18 (2), 26–34. <https://doi.org/10.25134/ilkom.v18i2.155>
- Karaman, J., Sitadewi, R., Nastiti, YA, Bhakti, RW, Mahendra, AHI, Herdiansyah, AV, Crisnanda, JE, & Saifudin, T. (2024). Socialization and Mentoring of Educators in the Implementation of QR Code-Based Attendance Technology at Tugu Village Elementary School. *JMM - Jurnal Masyarakat Merdeka*, 6 (2), 102. <https://doi.org/10.51213/jmm.v6i2.143>
- Kurnia, FT, & Maulid, R. (2024). IMPLEMENTATION OF A QR CODE-BASED DIGITALIZED ATTENDANCE SYSTEM. *JurnalGEMBIRA (Community Service)*, 2 (5), 1974–1982.
- Malah, I., Sumual, H., & Rianto, I. (2022). Design of Attendance System, Teacher and Student Tracking in Vocational High Schools. *EduTik: Journal of Information and Communication Technology Education*, 2 (2), 159–171. <https://doi.org/10.53682/edutik.v2i2.4431>
- Muhammad, A., Kartika, R., Diah, R., Bahri, S., & Nurhalifah, S. (2021). Utilization of Google Spreadsheet as a Data Storage Media for the Community of RW.04 Kp. Cilayung. *Proceeding of UIN Sunan Djati Bandung*, 1 (48), 2–7. <https://proceedings.uinsgd.ac.id/index.php/Proceedings>
- Muhammad Arifin, & Widiyarta, A. (2021). Effectiveness of Online Attendance in Work Discipline at the Surabaya TPI Special Immigration Office During the Covid-19 Pandemic. *Sawala: Journal of Public Administration*, 9 (1), 35–57. <https://doi.org/10.30656/sawala.v9i2.3277>
- Negara, SA, Tambotih, J., & Tanaamah, AR (2024). Design of a Website-Based Student Attendance System at SMA Negeri 1 Ambarawa. *Journal of Information and Communication Technology*, 8 (3), 2024. <https://doi.org/10.35870/jti>

- Nisa, MA, & Susanto, R. (2022). The Effect of Using Wordwall-Based Educational Games in Mathematics Learning on Learning Motivation. *JPGI (Journal of Indonesian Teacher Research)*, 7 (1), 140. <https://doi.org/10.29210/022035jppi0005>
- Pramesti, S., & Tri Febrianto, P. (2024). Implementation of Digital Attendance System to Improve Efficiency of Teacher Attendance Recording in Elementary Schools. *JATI (Journal of Informatics Engineering Students)*, 8 (2), 2429–2434. <https://doi.org/10.36040/jati.v8i2.9521>
- Rahayu, DA, & Vahmi, E. (2022). Systematic Literature Review: Analysis of the Effectiveness of Digital Attendance Applications. *PIJAR: Journal of Education and Teaching*, 1 (1), 22–33. <http://pijar.saepublisher.com/index.php/jpp/article/view/45>
- Saputra, MH, & Dristyan, F. (2024). *Implementation of Object-Based Digital Attendance Technology to Improve the Quality of Teaching and Learning Process in Higher Education*. 1 (2018), 62–71.
- Sitinjak, NM, Batubara, RO, & Silaen, SY (2022). Design and Construction of YASPI Madrasah Aliyah Teacher Attendance System with Web-Based QR Code System. *Widyaloka Journal of Science and Technology*, 1 (2), 196–202. <https://jurnal.amikwidyaloka.ac.id/index.php/jstekwid>
- Suharianto, Pambudi, LBA, Rahagiyanto, A., & Suyoso, GEJ (2020). Implementation of QR Code for Efficient Time Ordering of Food and Beverage Menus in Restaurants and Cafes. *BIOS: Journal of Information Technology and Computer Engineering*, 1 (1), 35–39. <https://doi.org/10.37148/bios.v1i1.7>