

THE PRINCIPAL'S ROLE IN DEVELOPING TEACHERS OF THE DIGITAL TEACHING JOURNAL BY USING APPSHEET AT JUNIOR HIGH SCHOOL

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Abstract

This study aims to describe the principal's role in developing of teacher's digital teaching journal by using the AppSheet platform at SMP Negeri 8 Batang, in response to the demands of educational digital transformation. The focus of the study covers four managerial functions of the principal: planning, organizing, actuating, and evaluating. A qualitative approach with a case study design was employed to explore data in depth through interviews, observations, and document analysis involving the principal, the curriculum coordinator, and teachers selected to use purposive and snowball sampling. Data were analyzed by using the Miles and Huberman model through the processes of data reduction, display, and conclusion drawing. The results indicate that the principal plays a strategic role in formulating digitalization policies, forming a development team, allocating tasks based on the competencies, motivating teachers, providing facilities, facilitating training, and innovation. In addition, the principal actively monitors, evaluates, and provides data-driven feedback to enhance system effectiveness. The implementation of AppSheet has proven to accelerate lesson documentation, improve data accuracy, and facilitate real-time supervision, although challenges remain in teachers' digital literacy and infrastructure limitations. The study concludes that the success of developing a digital teaching journal is determined not only by technology but also by visionary and adaptive school leadership. These findings contribute to strengthening the theory of digital leadership in education and serve as a practical reference for other schools adopting similar innovations.

Keywords

AppSheet, Digital Teaching, Principal, School Management.



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INTRODUCTION

Based on initial observations, SMP Negeri 8 Batang is one of the schools in Batang Regency that has implemented a digital teaching journal based on AppSheet. This initiative emerged from the need to create an efficient, accurate, and easily accessible record-keeping system for school policymakers at any time. SMP Negeri 8 Batang provides a compelling example of the successful adoption of a digital teaching journal based on *AppSheet*. The school developed the system independently, with low costs, high flexibility, and customization according to local needs (Liu & Yu, 2023). This achievement is closely linked to the active role of the principal as a change agent who initiated policies, formed an internal development team, and oversaw the implementation process through consistent supervision (Alsharija & Watters, 2021; Eyana et al., 2024). However, scientific studies examining the role of school principals in this context remain limited. Existing research tends to focus more on technical aspects of the application or teachers' perceptions (Simon, 2025; Wiratmaka et al., 2023), while the managerial dimensions of school leadership are seldom discussed in depth.

The integration of a digital teaching journal based on AppSheet is a strategic response to the evolving demands of educational administration in the digital era. Traditional paper-based journals are often prone to issues such as data loss, limited accessibility, time inefficiency, and difficulties in monitoring and evaluation. This innovation not only enhances administrative efficiency but also supports data-driven decision-making at both the instructional and managerial levels. The development of the AppSheet-based digital teaching journal at SMP Negeri 8 Batang is closely aligned with the school principal's strategic vision to improve the efficiency of administrative data management. Recognizing the recurring challenges posed by manual documentation, such as delayed reporting, inconsistencies in data recording, and difficulties in monitoring instructional activities, the principal initiated the transition toward a digital system that could streamline workflows and enhance the accuracy and accessibility of teaching records. This initiative is not merely a technological upgrade, but a deliberate effort to align school practices with principles of effective educational leadership and data-driven decision-making. By introducing a customized, cloud-based platform, the principal sought to reduce the administrative burden on teachers while simultaneously ensuring that relevant data could be accessed in real time by school leaders for purposes of planning, evaluation, and policy formulation. The system was developed internally, reflecting the principal's commitment to resource optimization and contextual responsiveness.

Another key factor was the principal's awareness of the importance of data-driven decision-making in modern educational leadership. Accurate and timely instructional data is essential for evaluating teacher performance, identifying areas for professional development, and aligning classroom practices with curriculum standards. The absence of a centralized and easily accessible data system limited the school's ability to engage in meaningful analysis and continuous improvement. The system also faces several threats that could undermine its sustainability. A key concern is data security. Without robust encryption and access control, there is a risk of data breaches or unauthorized access, which could compromise student and teacher information. Another threat is the school's reliance on a third-party platform. Changes in AppSheet's service terms, pricing structure, or feature availability could disrupt operations or require costly adjustments. Lastly, the initiative may suffer from policy misalignment if there is a lack of formal recognition or support from higher authorities. Leadership transitions or shifting institutional priorities might deprioritize the digital journal initiative, leading to its discontinuation or stagnation.

Research indicates that AppSheet enables real-time data input, simplifies teachers' administrative tasks, and facilitates supervision for school principals (Bajsair & Baisyir, 2025; Rusli et al., 2024). International studies have also confirmed that simple digital platforms can significantly enhance accountability and transparency within educational systems (Khotimah et al., 2025; Rani et al., 2024). Despite these benefits, most existing studies remain focused on the technical features of applications or teachers' perceptions (Simon, 2025; Wiratmaka et al., 2023). This research addresses this literature gap by exploring in detail how school principals carry out their managerial functions—planning, organizing, executing, and evaluating—in the development of a teacher's digital journal based on *AppSheet*. From a social and educational perspective, the study is significant as it can serve as a reference for other schools implementing or planning to adopt similar innovations, aligning with the national policy of *Merdeka Belajar* (Freedom to Learn) and the government's digital transformation agenda in education (Azizah et al., 2025; Hunaepi & Suharta, 2024; Kemendikbudristek, 2024). This research addresses a notable gap in the literature by shifting the focus from purely technical features and user perceptions toward a more comprehensive understanding of school leadership in the digital transformation process. Specifically, it explores how school principals carry out their managerial functions—planning, organizing, executing, and evaluating—in the development and implementation of a digital teaching journal based on AppSheet. While previous studies have largely emphasized application usability and teacher

satisfaction, there remains limited scholarly attention on the strategic and managerial roles played by school leaders in guiding such innovations.

By examining the principal's role not merely as a supervisor but as an active change agent, this study contributes to a deeper understanding of the organizational dynamics that underpin successful digital initiatives in schools. From a social and educational perspective, this research is particularly significant because it offers practical insights that may serve as a reference for other schools seeking to implement similar systems. Accordingly, this study aims to analyze the role of the school principal in developing a teacher's digital teaching journal based on *AppSheet* at SMP Negeri 8 Batang, focusing on the aspects of planning, organizing, executing, and evaluating. Theoretically, the findings are expected to expand the understanding of managerial leadership in educational technology innovation. Practically, the results can inform policy formulation, training program design, and the replication of best practices across educational institutions.

METHOD

This study employed a qualitative approach with a case study design. This design was selected because it aligns with the objective of gaining an in-depth understanding of the specific phenomenon concerning the principal's role in developing a digital teaching journal based on *AppSheet* at SMP Negeri 8 Batang. A case study allows the researcher to explore the context, processes, and dynamics holistically, revealing the meanings and strategies employed by the principal in initiating, implementing, and evaluating the digital innovation (John W. Cresswel & Poth, 2020). The focus of this research is not on statistical generalization but rather on providing rich, contextual insights from a single, representative case.

The research was conducted at SMP Negeri 8 Batang, Batang Regency, Central Java, Indonesia, from February to August 2025. This location was chosen because the school had independently implemented an *AppSheet*-based digital teaching journal and successfully adopted it across all teaching staff. The study participants consisted of the principal, vice principal, teachers, and administrative staff directly involved in the planning, development, and utilization of the digital journal. Participant selection was carried out through purposive sampling with the following criteria: (1) direct involvement in the development or utilization of the digital teaching journal, (2) knowledge of policies and procedures for *AppSheet* implementation in the school, and (3)

willingness to provide comprehensive information. When necessary, snowball sampling was applied to identify additional relevant informants.

Data were collected through semi-structured interviews, participant observation, and document analysis. Interviews were conducted to obtain narrative information regarding participants' experiences, perceptions, and strategies applied by the principal and teachers. The interview guide was developed based on the research focus but remained flexible to accommodate emerging topics during the conversation (Sugiyono, 2022). Participant observation was undertaken during the use of the digital journal in classrooms and school coordination meetings, enabling the researcher to record interactions, work patterns, and user responses. Documentation analysis included reviewing school policy archives, digital journal templates, evaluation reports, and AppSheet interface screenshots.

To ensure data validity, triangulation of sources and methods was applied by comparing data obtained from interviews, observations, and documents across multiple informants (Moleong, 2021). Additionally, member checking was conducted by allowing participants to review and verify interview summaries, reducing researcher interpretation bias. An audit trail was maintained by keeping detailed records of the data collection process, interview transcripts, and analytical decisions, ensuring the research process could be traced and reviewed by others.

Data analysis followed the interactive model by (Miles et al., 2014), comprising three concurrent stages: (1) data reduction, involving selection, simplification, and categorization of relevant information based on the research focus; (2) data display, where information was organized in matrices, narratives, or diagrams to facilitate pattern recognition; and (3) conclusion drawing and verification, through in-depth interpretation of recurring patterns and themes. Data collection and analysis were conducted simultaneously, allowing iterative refinement of the research focus in response to emerging field findings.

Through this methodological framework, the study is expected to generate a comprehensive portrayal of the principal's role in developing an AppSheet-based digital teaching journal, encompassing policy, technical, and managerial aspects. The qualitative case study approach enables a nuanced exploration of processes in their natural context, contributing to the theoretical discourse on digital leadership in schools and offering practical insights for implementing educational technology innovations in similar settings (Denny & Weckesser, 2022; Lim, 2025).

FINDINGS AND DISCUSSION

Findings

The findings of the study reveal that the principal's role in developing the *Digital Teaching Journal* based on Appsheet at SMP Negeri 8 Batang encompasses four main stages: well-planned preparation, systematic organization, collaborative implementation, and continuous evaluation. In the planning stage, the principal sets a vision and mission oriented toward the utilization of digital technology to support learning administration. The interview with the principal indicated a strong emphasis on systematic documentation of teaching reports. The principal expressed the expectation that all teachers' reports should be organized in a neat and structured manner while also being accessible at any time. This statement reflects the principal's managerial orientation toward improving accountability and transparency within the school environment.

Organization is carried out by forming a technical team consisting of the vice principal for curriculum affairs, the school operator, and teacher representatives. The interview findings revealed that teachers received direct assistance from the curriculum team, which played a crucial role in ensuring the smooth implementation of the program. This support mechanism enabled teachers to address technical issues more efficiently, thereby minimizing potential disruptions in the teaching process. Such structured guidance highlights the importance of institutional backing in facilitating the adoption of educational innovations. Field observations indicated that this coordination structure accelerated the application adaptation process among teachers.

In the implementation stage, teachers routinely upload their teaching activity reports through Appsheet, which can be monitored directly by the principal. The interview with one of the teachers revealed a shift in reporting practices. The teacher explained that they had developed the habit of completing the teaching report immediately after each session, thereby preventing the accumulation of unfinished tasks as experienced previously. This change illustrates an improvement in teachers' administrative discipline and efficiency, suggesting that the reporting system encouraged more consistent and timely documentation. Evaluation is conducted regularly through monthly meetings to provide feedback on the quality and completeness of the reports. According to the curriculum staff, these evaluations were not perceived by teachers as a form of strict supervision but rather as a participatory process that fostered a sense of involvement. This perspective suggests that the evaluation mechanism not only served its managerial function but also contributed to building a more collaborative and supportive school climate.

Table 1. Summary of Themes and Categories of Research Findings

Main Theme	Finding Category	Description of Findings	Participant Quote
Planning Journal Digitalization	for Vision and mission of digitalization	The principal sets a long-term goal for utilizing Appsheet to reports to be neatly documented improve the efficiency of and accessible at any time." (KS1) learning administration.	
	Annual work program	The digital journal development program is included in the school's annual plan and is disseminated to all teachers.	"This program has indeed been included in the school's work plan." (UK1)
Team Organization	Formation of technical team	a A small team is formed consisting of the vice principal curriculum team, so if there were for curriculum, the operator, any technical problems, they could and supporting teachers.	"We were directly guided by the be resolved quickly." (GR2)
	Division of tasks	Technical tasks and coordination are divided according to each member's competence.	"Everyone already knows their respective roles." (UK1)
Implementation of the Digital Journal	Regular uploads	Teachers upload their teaching reports after each learning activity.	"We have become accustomed to filling in the report after each teaching session, so it doesn't pile up like before." (GR2)
	Facility support	Provision of devices and internet access to support application's use.	"The school provides laptops and the Wi-Fi, so it runs smoothly." (GR2)
Evaluation Monitoring	Monthly evaluation meetings	The principal and curriculum team review the quality and timeliness of reports.	"Regular evaluations make teachers feel involved, not supervised." (UK1)
	Constructive feedback	Teachers receive suggestions for improving the quality and completeness of reports.	"If something is missing, we are immediately informed so it can be corrected." (GR2)

Source: researcher observation

The findings demonstrate that the digitalization of teaching journals through AppSheet was not merely a technical adoption but rather a structured managerial process encompassing planning, organization, implementation, and evaluation. At the planning stage, the principal's vision and integration of the program into the annual work plan reflected a strategic orientation, ensuring that digitalization was aligned with the school's long-term goals. The formation of a technical team and clear division of tasks illustrated effective organizational design, where responsibilities were distributed based on competence to minimize technical barriers. In the implementation stage, teachers' consistency in uploading reports after each teaching activity, supported by the provision of facilities, indicated that digitalization was embedded into daily routines and facilitated by

adequate infrastructure. The evaluation process, carried out through monthly meetings, not only ensured the accuracy and timeliness of reports but also strengthened teachers' sense of ownership, as feedback was framed in a constructive and collaborative manner. Taken together, these findings highlight that the success of digital journal implementation was driven by the integration of visionary leadership, organizational support, routine practice, and participatory evaluation, forming a coherent cycle of school-based digital management.

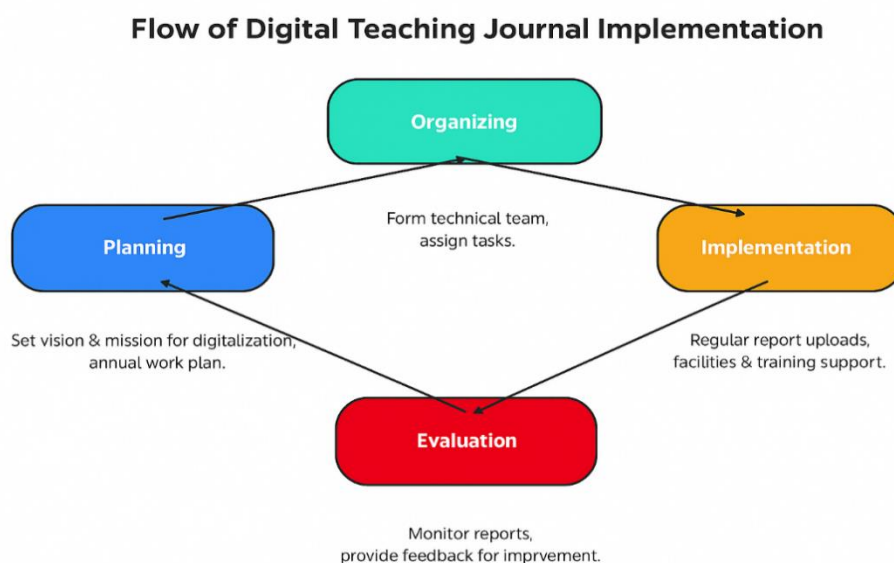


Figure 1. Flow of the Implementation of the Digital Teaching Journal Based on Appsheet

First, the principal ensured that the school's vision and mission were aligned with digital transformation goals, embedding a long-term commitment to innovation and technological integration within the institution's foundational values. By doing so, digitalization was not introduced as a temporary initiative but rather as an integral part of the school's identity and strategic direction. Second, this commitment was operationalized through the formulation of an annual work plan that clearly outlined the objectives, timelines, and resource allocations for the digital journal project. This program served as a roadmap that guided the school community in implementing the innovation in a structured and measurable manner. Third, the principal actively promoted the development of innovative strategies to support the adoption of the platform. These included the establishment of an internal development team, the provision of technical training for teachers, and the design of user-friendly journal templates suited to local needs. Such efforts demonstrate the principal's ability to balance strategic vision with practical execution, ensuring that the innovation could be both sustainable and scalable. In the organizing stage of the Digital Teaching

Journal implementation, the principal demonstrates strong managerial competence in forming and structuring the development team. The process begins with the establishment of a formal technical team through an official decree, ensuring clarity of roles and collaboration among teachers. Task distribution is designed based on efficiency, teachers' digital literacy, and workload balance. Teachers with advanced digital skills are empowered as mentors to their peers, creating a supportive and collaborative working environment. The principal adopts a participatory approach in appointing team members, emphasizing qualitative considerations such as interest in technology, collaboration skills, and representation across subjects. This inclusive process fosters collective ownership and strengthens teachers' commitment to digital innovation. The organizational structure is functionally detailed, comprising positions such as chairperson, secretary, and specialized members responsible for content development, interface design, and system testing.

During the implementation process, the principal applies a positive and persuasive motivational approach to increase teacher engagement. Teachers are encouraged to participate actively through socialization of the benefits of digital journals, recognition for innovative practices, and collaborative sharing forums that highlight best practices. This motivational environment helps teachers perceive the digital journal not as an administrative burden, but as a meaningful tool to improve reflection, transparency, and supervision of learning activities. The spirit of enthusiasm and collective participation cultivated by the principal aligns with the concept of inspirational motivation, where leadership functions to strengthen teachers' sense of purpose and shared commitment toward digital transformation. To ensure the practicality of this innovation, the principal also guarantees that the implementation is supported by sufficient facilities and technical resources. Stable internet connections, digital devices, and access to user-friendly AppSheet templates are provided to facilitate the smooth operation of the system. Training spaces equipped with digital tools and reliable connectivity further enable effective learning and collaboration. These efforts reflect a form of supportive management, where the leader provides an enabling environment that ensures every teacher can implement technological innovation with confidence and consistency. The implementation process also involves the cultivation of innovation through participatory collaboration. Teachers are given opportunities to express ideas and propose improvements to the digital journal features through routine discussions and evaluations. The principal accommodates these suggestions responsively, creating a dynamic system where teachers feel their input directly contributes to the school's digital progress. This openness signifies a shift

from hierarchical control to participatory leadership, allowing innovation to grow organically within the teaching community. Equally important is the principal's commitment to continuous training and mentoring. Implementation is strengthened by systematic capacity-building programs such as workshops, practice sessions, and individual mentoring that cater to teachers' diverse levels of digital competence. The principal also facilitates informal learning through communication groups and peer collaboration, ensuring that guidance extends beyond formal sessions.

In the evaluation stage, the principal of SMP Negeri 8 Batang plays a crucial role in ensuring that the implementation of the AppSheet-based Digital Teaching Journal operates effectively and continuously improves over time. Evaluation serves not merely as a summative activity but as a formative process that provides feedback for system refinement, teacher development, and policy adjustment. This phase highlights the principal's capacity to integrate managerial supervision, reflective assessment, and participatory review within the school's digital innovation framework. To strengthen the reliability of the evaluation, the principal integrates multiple sources of evidence, including digital logs, feedback forms, and observation notes. Data from these sources are discussed collaboratively in evaluation meetings, where teachers are invited to reflect on challenges and propose adjustments for system improvement. This participatory approach transforms evaluation into a shared learning process, rather than a top-down control mechanism. Teachers perceive evaluation not as a judgment, but as an opportunity for professional growth, which in turn fosters intrinsic motivation and ownership of innovation.

Discussion

These findings reinforce the theory of instructional leadership (Chang et al., 2023; Smith et al., 2022), which emphasizes the importance of the principal's active involvement in directing, monitoring, and evaluating teaching practices. The perceived benefits and ease of use of the application were identified as key factors for successful adoption (Almaiah et al., 2022; Alrawashdeh et al., 2022). This result is also consistent with the study, which demonstrated that the use of digital platforms can improve teachers' work efficiency by up to 35% (Stefanovic & Klochkova, 2021; Yazici & Özerbaş, 2022). In contrast to the research of (Masry-Herzalah & Dor-Haim, 2022; Top et al., 2021), which found a high level of teacher resistance to new technology, this study revealed minimal resistance due to the principal's strong support, intensive mentoring, and transparent communication. This condition demonstrates that resistance can be reduced through appropriate implementation strategies (Nwisagbo et al., 2025). Furthermore, the findings highlight

that the role of leadership is not only limited to policy formulation but also extends to building a supportive school climate that encourages teachers to engage in innovation. When teachers feel guided rather than supervised, as indicated by the evaluation mechanism in this study, they tend to show greater commitment to integrating technology into their daily practice (Almuhanna, 2025; Caneva et al., 2023; Pan & Wang, 2025; Yuan et al., 2022). This aligns with the concept of distributed leadership, where collaboration and shared responsibility are essential in sustaining change within schools (Amels et al., 2021; Galdames-Calderón, 2023; Harris et al., 2022).

Another important point is the provision of infrastructure and technical assistance, which proved to be critical enablers for the smooth adoption of AppSheet. Without adequate facilities such as devices and internet access, as well as a technical support team, the process of digitalization could have faced significant barriers (Borovkov et al., 2021; Botelho, 2021; Jamil, 2021). This finding resonates with prior studies (Budiarto et al., 2024; Olateju Temitope Akintayo et al., 2024), which suggest that the success of educational technology initiatives depends on the balance between technological readiness and human resource capacity. Thus, this study underscores the interplay between visionary leadership, infrastructural support, and teacher participation as key determinants of successful digital transformation in schools. The practical implication is that the digitalization of learning administration not only enhances the efficiency of reporting but also strengthens the culture of collaboration within the school (Bucăța & Tileagă, 2024; Timotheou et al., 2023). Theoretically, this research contributes to the body of knowledge on data-driven educational management by showing that a simple application such as AppSheet can have a significant impact on teacher accountability and performance transparency. Future research could explore the relationship between the use of a digital teaching journal and student learning outcomes over the long term.

CONCLUSION

This study concludes that the implementation of the *Digital Teaching Journal* based on AppSheet, conducted through the stages of planning, organizing, actuating, and evaluating under the direct leadership of the principal, effectively enhances the efficiency of instructional administration, data transparency, and teacher performance accountability. The novelty of this research lies in its comprehensive exploration of the principal's managerial role in the digital transformation of instructional administration, an aspect rarely addressed in previous studies, which have predominantly focused on technical application or teacher perceptions. Practically, the

findings provide strategic guidance for schools to optimize digital journals in supporting reflective practice and instructional improvement, while from a policy perspective, they are relevant for promoting regulations that facilitate the adoption of digital technology in schools. Further research is recommended to examine the success factors of implementation across different educational levels and contexts, as well as to investigate its impact on improving student learning outcomes.

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