

Principal Strategies for Optimizing ARKAS and SIPLah to Improve BOSP Fund Accountability at SDN 6 Suak Tapeh

Edi Arwan

ediarwan12@gmail.com

Dessy Wardiah

dessywardiah77@gmail.com

Wahid Ibrahim Banul Ngindom

ngindomx1@gmail.com

Universitas PGRI Palembang

ABSTRACT

This study described and analyzed the principal's strategies, constraints, and solutions in optimizing the School Activity and Budget Plan Application (ARKAS) and the School Procurement Information System (SIPLah) to improve the accountability of School Operational Assistance (BOSP) funds at SDN 6 Suak Tapeh. A descriptive qualitative approach was employed. Informants were purposively selected and comprised a school supervisor, the principal, a classroom teacher, the school operator, and a school committee representative. Data were collected through interviews, observation, and document analysis. Trustworthiness was strengthened through source and method triangulation, and the data were analyzed using the Miles and Huberman model of data reduction, data display, and conclusion drawing. The findings showed that the principal optimized both applications through needs-based planning in ARKAS, teacher participation in identifying instructional priorities, clear role allocation, technical direction for the operator, continuous coordination with internal and external stakeholders, verification of ARKAS entries, need-oriented procurement through SIPLah, disciplined administration, physical and digital document archiving, and information disclosure to teachers and the school committee. Constraints included uneven technical understanding, dependence on the operator, unstable internet access, incomplete data and supporting documents, application updates, limited procurement options, competing school priorities, time constraints, and reporting demands. These constraints were addressed through coordination, technical assistance, task distribution, data verification, systematic archiving, consultation with relevant agencies, and continuous supervision. The study demonstrates that digital applications strengthen BOSP accountability only when supported by managerial, participatory, technical, and administrative leadership.

Keywords: ARKAS; SIPLah; Principal Strategy; BOSP Funds; Accountability

INTRODUCTION

Educational finance management is a central component of school governance because it directly influences the continuity of school services, the fulfillment of instructional needs, and public trust in educational institutions. At the elementary-school level, school funds are not merely administrative resources; they are instruments for expanding access, strengthening quality, and supporting equitable educational services. Consequently, educational funds must be managed transparently, accountably, effectively, efficiently, and in accordance with applicable regulations (Kemendikbudristek, 2022). School Operational Assistance for Educational Units, commonly referred to as BOSP, is a strategic public-financing policy intended to sustain the operational needs of schools. Its management requires orderly planning, implementation, procurement, reporting, and accountability. District education authorities also have an important role in guidance, technical assistance, monitoring, and evaluation. These requirements mean that BOSP management is not limited to the disbursement and expenditure of funds; it includes an institutional process through which school priorities are identified, translated into budgets, implemented, documented, and evaluated (Direktorat Jenderal PAUD, Dikdas, dan Dikmen, 2021).

Increasing demands for public financial accountability have encouraged the digitalization of school financial management. Digital systems can improve administrative order, accelerate reporting, strengthen document traceability, and reduce opportunities for inappropriate expenditure (Prasetyo et al., 2023). In Indonesia, two key applications support this process. The School Activity and Budget Plan Application, or ARKAS, assists schools in planning activities, allocating budgets, and reporting BOSP expenditure. The School Procurement Information System, or SIPLah, supports transparent and documented procurement of school goods and services. Ideally, ARKAS and SIPLah should make BOSP management more orderly, transparent, and auditable. ARKAS should connect school programs with genuine needs, priority activities, and BOSP technical guidelines. SIPLah should ensure that procurement is based on school needs, supported by transaction records, and traceable during monitoring or audit. Within this system, the principal is the primary institutional leader responsible for ensuring that budget planning, spending, procurement, document preparation, and reporting comply with principles of transparency, legality, effectiveness, and accountability (Wiyani, 2017).

Digital applications, however, do not automatically create accountable governance. Schools may experience limited technical understanding among principals, treasurers, teachers, and operators; dependence on a single operator; unstable internet connections; changing menus and procedures; incomplete supporting documents; and weak coordination among those involved. These conditions show that successful digital financial management requires human-resource readiness, internal communication, technical support, accurate data, document discipline, and

continuous principal supervision (Yaelasari & Astuti, 2022; Setiawan & Sofyan, 2022).

Similar conditions were identified at SDN 6 Suak Tapeh. Preliminary observations indicated that the use of ARKAS and SIPLah had not been fully optimized. The principal and operator encountered difficulties in preparing activity plans, synchronizing data, completing application procedures, identifying suitable providers, correcting input errors, and organizing supporting documents. Procurement could also be delayed by limited products or providers and unstable internet access. These issues were significant because the school received BOSP allocations of IDR 233,100,000 in 2024, IDR 211,500,000 in 2025, and IDR 203,400,000 in 2026. Each allocation required a clear planning basis, verifiable transactions, and complete accountability records.

The situation revealed a gap between the intended function of digital applications and their implementation at school level. ARKAS and SIPLah were designed to strengthen BOSP accountability, yet their effective use depended on technical competence, data completeness, coordination, and leadership. The principal therefore had to do more than approve administrative outputs. The principal needed to mobilize teachers, the operator, the committee, the supervisor, and related agencies; determine priorities; verify data; oversee procurement; ensure document completeness; and evaluate whether expenditure served actual school needs. Previous research has confirmed the importance of principal leadership in school governance. Prahara et al. (2022) found that supervision and the principal's role were related to the quality of school administration. Asiah et al. (2021) emphasized intensive guidance, continuous monitoring, motivation, and stronger understanding of financial governance as important principal strategies. Marianita and Yuneti (2019) highlighted adaptive leadership, attention to human-resource conditions, and innovation in the use of technology. Research on school finance has also stressed transparency, documentation, and alignment between plans and actual expenditure (Permata & Mustoffa, 2023; Sine et al., 2021).

Nevertheless, studies that specifically analyze how a principal simultaneously optimizes ARKAS and SIPLah to strengthen BOSP accountability in a public elementary school remain limited. Many studies examine BOS or BOSP management, digital financial applications, procurement, or principal leadership separately. The present study addresses this gap by examining ARKAS and SIPLah as an integrated digital governance system involving people, data, documents, procurement, coordination, and control. The study therefore aimed to describe and analyze the principal's strategies for optimizing ARKAS and SIPLah, identify the constraints encountered in the use of both applications, and explain the solutions implemented to improve BOSP fund accountability at SDN 6 Suak Tapeh. The findings are expected to contribute to educational management by providing a contextual account of how school leadership can transform digital applications into mechanisms of transparent and accountable financial governance.

LITERATURE REVIEW

Previous Related Studies

Prahara et al. (2022) showed that school-principal supervision and leadership contributed to the quality of teachers' administrative and instructional performance. Although their study did not focus specifically on ARKAS and SIPLah, it demonstrated that administrative quality is influenced by active principal monitoring rather than by procedural requirements alone. This finding is relevant because BOSP accountability also requires regular verification, feedback, and control by the principal. Asiah et al. (2021) found that principals improved school performance through intensive guidance, monitoring, motivation, and role coordination. Marianita and Yuneti (2019) similarly emphasized that effective principal strategy depends on an understanding of staff capacity, adaptive leadership, and innovation. These studies indicate that digital financial governance must be matched with leadership practices that strengthen human competence and coordinate work across different school roles.

Permata and Mustoffa (2023) examined accountability and transparency in BOS management and found that consistency among planning, implementation, recording, and reporting was essential. Sine et al. (2021) also identified accountability and transparency as central principles in school operational-fund management. Their findings support the view that application-based planning and procurement are valuable only when they are supported by complete evidence, clear decision-making, and accessible information. Research on digital transformation further clarifies the principal's role. Navaridas-Nalda et al. (2020) found that principal leadership strategically influenced school digital transformation by shaping priorities, culture, and resource use. McCarthy et al. (2023) argued that digital transformation requires planned organizational change, collaboration, human-resource capacity, and adequate technical support. Ruloff and Petko (2025) similarly demonstrated that educational goals and leadership styles shape the success of digital change. The present study extends this literature by examining a specific digital-finance context in which ARKAS and SIPLah must be integrated with school accountability practices.

Principal Strategy and Managerial Leadership

A principal strategy is a coordinated set of decisions and actions used to achieve school objectives through planning, organizing, directing, supervising, and evaluating available resources. In educational management, the principal acts as manager, administrator, supervisor, leader, innovator, and motivator. These roles require the principal to translate policies into operational procedures, assign responsibilities, build cooperation, monitor implementation, solve problems, and maintain organizational accountability (Mulyasa, 2022; Usman, 2021). In financial governance, managerial leadership begins with needs identification and priority setting. The principal must distinguish urgent instructional needs from less essential

requests, ensure that activities comply with technical guidelines, and connect budget decisions with the school's goals. Organizing involves assigning roles to the treasurer, operator, teachers, and committee while maintaining clear lines of responsibility. Direction and supervision involve checking entries, reviewing supporting documents, monitoring procurement, and correcting errors before they become accountability problems.

Participatory leadership is also important because teachers understand classroom needs, operators understand application procedures, committees represent community oversight, and supervisors provide external guidance. Participation does not mean that every proposal is funded; it means that decisions are informed by relevant stakeholders and then evaluated according to urgency, benefit, affordability, and regulations. The principal remains responsible for integrating these perspectives into a coherent and accountable plan. Digital leadership adds a technical and adaptive dimension. The principal does not need to perform every application task personally, but must understand the workflow sufficiently to direct, question, verify, and evaluate it. A school becomes vulnerable when knowledge is concentrated in one operator. Effective strategy therefore includes technical learning, knowledge sharing, documented procedures, contingency planning, and communication with education authorities when application changes occur.

ARKAS and SIPLah in Digital School Financial Governance

ARKAS is a digital application that supports the preparation of school activity and budget plans, the allocation of BOSP funds, the recording of implementation, and the preparation of financial reports. Its accountability function lies in connecting proposed activities with budget codes, funding rules, implementation records, and reporting outputs. Accurate ARKAS use requires valid school data, careful selection of activities, consistency between plans and realization, timely synchronization, and supporting evidence. SIPLah is a digital procurement system intended to make school purchasing more transparent, documented, and traceable. It enables schools to identify providers, compare goods and prices, conduct transactions, and maintain digital procurement records. SIPLah can strengthen accountability by reducing informal procurement, generating transaction evidence, and clarifying the relationship between budgeted needs and purchased items. However, the platform does not replace professional judgment. Schools must still assess specifications, quantity, quality, price, availability, delivery, and educational usefulness.

The two applications are complementary. ARKAS establishes the planning and budgeting basis, whereas SIPLah records the procurement pathway for relevant goods and services. Accountability is strongest when an item in SIPLah can be traced back to an approved need in ARKAS and then supported by invoices, receipts, delivery evidence, activity documents, and inventory records. Weak integration between these stages can create inconsistencies even when each application is used separately. Digital governance therefore combines technological

and administrative controls. Application entries create an electronic trail, while physical and digital archives provide evidence of actual implementation. The school must maintain both because an application record may show a transaction but not fully demonstrate the educational purpose, receipt, use, or condition of the purchased item. Continuous verification is necessary to ensure that digital records correspond to actual school activities.

BOSP Fund Accountability

Accountability refers to the obligation of a public institution and its officials to explain, justify, document, and take responsibility for decisions and the use of public resources. In BOSP management, accountability covers the legality of expenditure, consistency with plans, accuracy of records, completeness of evidence, efficiency of resource use, and the educational relevance of funded activities. Transparency complements accountability by making appropriate information available to teachers, committees, supervisors, education authorities, and other legitimate stakeholders (Mardiasmo, 2021; Kemendikbudristek, 2022). Accountability is not confined to the final report. It begins when needs are identified and priorities are selected. It continues through budget preparation, procurement, receipt of goods or services, use, documentation, inventory, reporting, and evaluation. A formally complete report may still represent weak accountability if the expenditure did not address a genuine need or if goods were not used. Conversely, a relevant activity cannot be considered accountable if documentation and regulatory compliance are incomplete.

Dwangu and Mahlangu (2021) emphasized that school financial accountability requires clear control mechanisms and an active principal role. Ordofa and Asgedom (2022) similarly linked school accountability with data-informed decision-making and stakeholder engagement. These perspectives support a multidimensional understanding of BOSP accountability that includes managerial responsibility, participation, technical accuracy, administrative evidence, and educational usefulness. Based on this framework, principal strategies for optimizing ARKAS and SIPLah should be assessed through the quality of needs-based planning, role coordination, technical supervision, procurement control, document management, transparency, and problem solving. The applications are enabling tools, whereas accountability is the organizational outcome produced by the interaction of leadership, human capacity, data, technology, and administrative discipline.

METHOD

Design and Samples

This study used a descriptive qualitative approach because it sought an in-depth understanding of the principal's strategies for optimizing ARKAS and SIPLah rather than testing statistical relationships. The approach enabled the researcher to

describe practices, meanings, constraints, and responses as they occurred in the school setting based on multiple informants and forms of evidence. The study was conducted at SDN 6 Suak Tapeh, Suak Tapeh District, Banyuasin Regency. The overall research period extended from October 2025 to May 2026, with intensive field interviews and observations conducted in March 2026. The site was selected because the school received BOSP funds and used ARKAS and SIPLah in its financial-management and procurement processes. Informants were selected purposively according to their knowledge of and involvement in the research problem. They consisted of one school supervisor, the principal, one classroom teacher, the school operator, and one school committee representative. This composition provided perspectives on external supervision, school leadership, instructional needs, technical application use, and stakeholder transparency. The participants were treated as information-rich sources rather than as a statistically representative sample.

Instruments and Procedures

The researcher was the primary qualitative instrument and used an interview guide, an observation guide, and a document-review matrix. The interview guide was organized around three main domains: principal strategies for optimizing ARKAS and SIPLah, constraints affecting application use and BOSP accountability, and solutions implemented by the principal. Probing questions were used to explore planning, task allocation, teacher participation, operator support, data verification, procurement, reporting, archiving, transparency, and communication with external agencies. The observation guide was used to examine administrative activities, communication between the principal and school personnel, use of computers and internet facilities, handling of application-related tasks, availability of supporting records, and physical and digital document organization. The document-review matrix was used to examine BOSP allocation data, school programs, activity documents, procurement evidence, facility records, personnel data, and other documents relevant to ARKAS, SIPLah, and accountability.

Data collection proceeded through interviews, direct observation, and documentation. Interviews were conducted flexibly so that informants could explain experiences and problems in detail while the researcher-maintained focus on the research questions. Observations were conducted to compare reported practices with actual administrative conditions. Documents were then examined to confirm, clarify, or qualify information obtained from interviews and observations. Data trustworthiness was strengthened through source triangulation and method triangulation. Source triangulation compared information from the supervisor, principal, teacher, operator, and committee representative. Method triangulation compared interview statements with observations and documents. Differences were reviewed and clarified before themes were finalized, thereby reducing dependence on a single perspective or data-collection technique.

Data Analysis

Data were analyzed using the Miles and Huberman interactive model consisting of data reduction, data display, and conclusion drawing. During data reduction, interview notes, observation records, and documents were selected, coded, and grouped according to strategies, accountability effects, constraints, and solutions. Repeated statements and irrelevant material were condensed while preserving evidence needed to explain each theme. During data display, the reduced data were organized in thematic narratives and editable summary tables. Relationships among needs-based planning, role allocation, technical application use, procurement, documentation, and accountability were compared across informants and methods. Conclusions were drawn progressively and were checked against the original evidence and triangulation results. The analysis therefore remained iterative until the themes were sufficiently coherent and supported by more than one source or method.

RESULT AND DISCUSSION

Principal Strategies for Optimizing ARKAS and SIPLah

The findings showed that the principal did not treat ARKAS and SIPLah merely as computer applications. Both were positioned within a broader managerial process involving people, school priorities, data, procurement, documentation, and supervision. ARKAS functioned as the planning and budgeting instrument, whereas SIPLah functioned as the documented procurement instrument. The principal's central task was to ensure that these stages were connected and directed toward actual school needs. Needs-based planning was the first strategy. Before activities were entered into ARKAS, the principal collected information about instructional needs, administrative requirements, facilities, student services, and school priorities. Teachers were asked to identify classroom and learning needs, while the operator and other staff provided information about technical and administrative feasibility. The principal then assessed proposals according to urgency, educational benefit, available allocation, and BOSP guidelines.

The second strategy was participatory role coordination. Teachers, the operator, the school committee, and the supervisor were involved according to their functions. Teacher participation improved the relevance of planned instructional expenditure. The operator supported application entry, synchronization, digital document handling, and SIPLah procedures. The committee supported openness and community oversight, while the supervisor and related agencies provided guidance. This distribution reduced the risk that planning and reporting would become the responsibility of only one individual. The third strategy was technical direction and verification. Although the operator performed many technical tasks, the principal did not transfer institutional responsibility to the operator. The principal checked the appropriateness of ARKAS activities, budget amounts, supporting data, procurement items, transaction evidence, and report completeness. This approach

allowed technical specialization while preserving the principal's role as decision maker and accountable authority.

The fourth strategy concerned procurement control. Before purchasing through SIPLah, the principal reviewed the type, quantity, specification, price, usefulness, and consistency of goods with approved needs. Provider options were compared when possible, and adjustments were made when products were unavailable. The purpose was not merely to complete an online transaction but to ensure that procurement was educationally relevant, financially reasonable, and supported by traceable evidence. The fifth strategy was disciplined administration and archiving. Transaction evidence, activity documents, reports, minutes, attendance lists, photographs, and other supporting records were organized in both physical and digital form. The principal encouraged routine filing instead of waiting until the reporting deadline. This practice improved document availability, reduced the risk of missing evidence, and made internal checks and external review more manageable. The sixth strategy was continuous monitoring and information openness. The principal monitored ARKAS entries, SIPLah transactions, document completion, and reporting progress, while communicating relevant information to teachers and the school committee. The strategy strengthened internal control and made the relationship between school needs, expenditure, and accountability more visible to stakeholders.

Table 1. Summary of the Principal's Strategies for Optimizing ARKAS and SIPLah

Theme	Strategy Implemented	Contribution to Accountability
Understanding application functions	ARKAS was used for planning and budgeting, while SIPLah was used for traceable procurement of goods and services.	Created a clear link between planned activities, approved expenditure, and procurement records.
Needs-based planning	Instructional, student, facility, and administrative needs were identified before being entered into ARKAS.	Directed BOSP funds toward genuine priorities and reduced inappropriate expenditure.
Stakeholder participation	Teachers, the operator, the committee, and the supervisor contributed according to their roles.	Improved relevance, openness, shared understanding, and internal checks.
Operator role optimization	The operator supported ARKAS entry, synchronization, SIPLah procedures, and digital records under principal direction.	Maintained technical efficiency without transferring institutional responsibility.

Theme	Strategy Implemented	Contribution to Accountability
Verification and supervision	The principal reviewed activity entries, budget values, supporting data, procurement items, and report completeness.	Strengthened internal control and reduced input or documentation errors.
Procurement control	Goods were assessed for type, quantity, specification, price, benefit, and consistency with approved needs.	Made procurement more selective, transparent, and educationally relevant.
Administrative discipline	Physical and digital transaction evidence and activity documents were archived continuously.	Improved traceability and readiness for reporting, monitoring, and audit.
Information openness	Relevant planning and expenditure information was communicated to teachers and the school committee.	Supported transparency and stakeholder trust in BOSP management.

How ARKAS and SIPLah Strengthened BOSP Accountability

ARKAS strengthened accountability primarily at the planning and budgeting stages. Activities could be connected with budget allocations and relevant rules, making it easier to identify the basis for expenditure. The principal attempted to ensure that ARKAS entries were not formal items inserted solely to complete the application, but represented activities related to teaching, administration, facilities, and student services. This finding indicates that the accountability value of ARKAS depends on the quality of needs analysis and the accuracy of data input. SIPLah strengthened accountability at the procurement stage. The platform enabled the school to search for items, compare available options, conduct transactions, and retain a digital purchasing trail. The principal's direction ensured that the school considered educational benefit and specifications rather than treating the platform as a simple online marketplace. When products or providers were limited, the school sought alternatives while maintaining consistency with approved needs.

The strongest accountability mechanism was the linkage among planning, procurement, and supporting documentation. An approved need in ARKAS provided the planning basis; the SIPLah transaction showed the procurement pathway; and invoices, receipts, delivery records, activity documents, and inventory records demonstrated implementation. When these elements corresponded, expenditure was easier to explain and verify. When data or documents were incomplete, the digital system alone was insufficient. The findings therefore show that accountability at SDN 6 Suak Tapeh was produced through a combination of application records and human controls. The applications improved structure and traceability, while the principal's leadership ensured relevance, verification,

coordination, and follow-up. This confirms that digitalization can support financial accountability but cannot substitute for managerial responsibility.

Constraints and Solutions in Optimizing ARKAS and SIPLah

The implementation of ARKAS and SIPLah was affected by technical, human-resource, organizational, and administrative constraints. Technical understanding was uneven, creating dependence on the operator for application entry and troubleshooting. Internet instability delayed synchronization, product searches, and transactions. Application updates required users to adapt to changes in menus, procedures, and data requirements. Supporting data and documents were sometimes incomplete, which could delay entry, procurement, or reporting. Other constraints concerned the prioritization of school needs, limited products or providers in SIPLah, restricted working time, and the pressure of routine duties and reporting deadlines. Not every proposed need could be funded, and items available on the platform did not always match the desired specifications. Coordination therefore required additional time from the principal, operator, teachers, and committee. The principal responded by dividing tasks according to competence, maintaining communication with the operator and relevant agencies, checking data before submission, strengthening physical and digital archiving, adjusting work schedules to internet conditions, following technical guidance, and supervising progress continuously. These solutions were pragmatic and adaptive because they addressed immediate obstacles while also building more orderly internal procedures.

Table 2. Constraints and Solutions in the Optimization of ARKAS and SIPLah

Constraint	Effect on BOSP Management	Principal's Solution
Uneven technical understanding	Some personnel did not fully understand the ARKAS and SIPLah workflow.	Coordinated with the operator and education authorities, followed technical guidance, and encouraged shared learning.
Dependence on the operator	Input, synchronization, and transactions could be delayed when the operator encountered difficulties.	Maintained principal direction and checking, clarified roles, and reduced complete reliance on a single individual.
Incomplete data and supporting documents	ARKAS entry, SIPLah procurement, and accountability reporting could be obstructed.	Used routine physical and digital archiving, document checklists, and repeated verification of transaction evidence.
Unstable internet access	Synchronization, product searches, and transactions were delayed or interrupted.	Adjusted working times, used available devices and connections, and completed offline preparation before synchronization.

Constraint	Effect on BOSP Management	Principal's Solution
Application-system updates	Users had to adapt to changed menus, displays, procedures, and requirements.	Sought current technical information, joined socialization activities, consulted related parties, and practiced new procedures.
Limited working time	Application and documentation tasks competed with instructional and managerial duties.	Distributed tasks, established priorities, and scheduled completion of critical BOSP documents.
Competing school priorities	Not all needs could be accommodated within the available BOSP allocation.	Selected needs according to urgency, educational benefit, affordability, and technical guidelines.
Limited SIPLah products or providers	Specific goods could be delayed, unavailable, or require specification adjustments.	Compared providers, considered acceptable alternatives, and confirmed that substitutions still met school needs.
Reporting demands	Incomplete or inconsistent records increased the risk of delayed accountability reports.	Conducted periodic checks, reconciled application data with evidence, and supervised reporting continuously.

Discussion of Managerial, Participatory, Technical, and Administrative Leadership

The findings demonstrate that the principal's strategy was fundamentally managerial. The principal linked planning, organization, direction, supervision, and control rather than viewing the applications as isolated technical tools. This is consistent with Mulyasa (2022) and Usman (2021), who position the principal as the actor responsible for integrating school resources and ensuring that programs move from plans to accountable implementation. At SDN 6 Suak Tapeh, needs identification, role allocation, data checking, procurement review, and document control represented an integrated management cycle. The findings also reveal a participatory dimension. Teachers contributed information about classroom needs, the operator contributed technical expertise, the committee supported transparency, and the supervisor provided guidance. This aligns with Ordofa and Asgedom (2022), who argue that accountability is reinforced through data-based decision-making and stakeholder involvement. Participation improved the relevance of planning because budget priorities were informed by those who understood learning needs. Nevertheless, the principal retained responsibility for assessing proposals against regulations and available resources.

The technical dimension was visible in the principal's relationship with the operator and the applications. The operator performed specialized procedures, but the principal checked the meaning and consequences of entries and transactions. This pattern is important because digital transformation can fail when organizational knowledge is concentrated in one technical employee. Navaridas-Nalda et al. (2020) and Ruloff and Petko (2025) emphasize that principal leadership shapes digital priorities and change processes. The present study confirms that leadership involves understanding enough of the technology to supervise it and building a system that can continue when technical problems arise. The administrative dimension was reflected in document discipline. Application records were supported by receipts, transaction evidence, activity documentation, and physical and digital archives. This finding is consistent with Mardiasmo (2021), who explains that public-sector accountability requires the clear use of resources, regulatory compliance, and evidence that can be examined. The principal's insistence on regular archiving reduced dependence on last-minute document collection and strengthened the traceability of expenditure.

The use of SIPLah illustrates why digital legality and educational relevance must be considered together. A transaction may be formally recorded in the platform, but accountability also requires that the item correspond to an approved need, have a reasonable specification and price, be received by the school, and be used for an appropriate purpose. Permata and Mustoffa (2023) similarly emphasize consistency among planning, realization, recording, and reporting. The principal's procurement review therefore added an educational and managerial control to the system-generated transaction trail. The constraints identified in the study confirm that digital financial governance is an organizational-change process. Internet instability, application updates, uneven technical competence, document problems, and time pressures cannot be solved by software alone. McCarthy et al. (2023) argue that effective digital transformation requires systematic strategy, collaboration, staff readiness, and continuing support. The principal's solutions, including coordination, role distribution, technical consultation, archiving, and ongoing checking, are consistent with this perspective.

The findings further support Dwangu and Mahlangu (2021), who emphasize that financial accountability depends on clear control mechanisms and principal responsibility. At SDN 6 Suak Tapeh, accountability did not rest on personal trust in the operator or on the assumption that an application automatically prevented error. It was strengthened by repeated checking, shared information, supporting documents, and the principal's active oversight. These controls converted the applications from administrative requirements into governance instruments. The study contributes a four-dimensional interpretation of principal strategy. Managerial leadership connects plans, roles, implementation, and control. Participatory leadership incorporates instructional and stakeholder knowledge. Technical leadership ensures that application processes are understood, verified, and adapted. Administrative leadership establishes evidence, filing, and reporting

discipline. BOSP accountability emerges when these four dimensions operate together.

Practically, the school should formalize its internal procedures so that application use does not depend on informal knowledge. A simple workflow can specify who identifies needs, who verifies proposals, who enters data, who reviews procurement, which documents are required, where files are stored, and when periodic checks occur. Technical training should involve the principal and other members of the BOSP team, not only the operator. This would strengthen continuity and reduce operational risk. The district education office should provide regular, role-based assistance that combines regulatory, technical, and managerial content. Assistance should address application updates, data reconciliation, procurement decisions, document standards, and the educational relevance of expenditure. Monitoring should not focus exclusively on the completeness of final reports; it should also examine whether school plans are needs-based, whether goods are used, and whether stakeholders understand major priorities and expenditure. This study was limited to one public elementary school, so the findings are not intended for statistical generalization. The qualitative evidence provides a contextual explanation of practices at SDN 6 Suak Tapeh, but other schools may have different allocations, infrastructure, staff capacity, and local support. Future studies should compare several schools, examine user experiences after application updates, and combine interviews with detailed analysis of ARKAS records, SIPLah transactions, accountability documents, and the educational use of procured resources.

CONCLUSION

The principal's strategies for optimizing ARKAS and SIPLah at SDN 6 Suak Tapeh consisted of needs-based planning, stakeholder participation, clear role allocation, technical direction for the operator, verification of ARKAS data, controlled procurement through SIPLah, continuous monitoring, disciplined physical and digital archiving, and information openness. ARKAS strengthened the planning and budgeting basis of BOSP management, while SIPLah strengthened the transparency and traceability of procurement. Their accountability value was greatest when application records were consistent with actual school needs and complete supporting documents. The main constraints were uneven technical understanding, dependence on the operator, unstable internet access, incomplete data and documents, application changes, competing priorities, limited time, restricted product or provider choices, and reporting demands. The principal addressed these constraints through coordination, task distribution, technical assistance, data checking, consultation with relevant agencies, work-schedule adjustment, systematic archiving, and continuing supervision. The study concludes that BOSP accountability is not produced by digital applications alone. It is an organizational outcome of managerial, participatory, technical, and administrative leadership. Schools should therefore strengthen the competence of the entire BOSP management team, institutionalize internal workflows and document controls, and ensure that all expenditure remains connected to educational priorities. Education

authorities should provide continuous assistance that integrates application skills, financial regulations, procurement judgment, and accountability management.

REFERENCES

- Asiah, N., Tiro, M. A., & Apriyanti, E. (2021). Strategi kepala sekolah dalam upaya meningkatkan kinerja guru di SMKS Yapta Takalar. *Jurnal Education and Development*, 9(4), 211–217.
- Direktorat Jenderal PAUD, Pendidikan Dasar, dan Pendidikan Menengah. (2021). *Kebijakan pengelolaan dana BOS berbasis digital*. Kementerian Pendidikan, Kebudayaan, Riset, dan Teknologi.
- Dwangu, A. M., & Mahlangu, V. P. (2021). Accountability in the financial management practices of school principals. *International Journal of Educational Management*, 35(7), 1504–1524. <https://doi.org/10.1108/IJEM-06-2021-0243>
- Kementerian Pendidikan, Kebudayaan, Riset, dan Teknologi. (2021). *Panduan penggunaan ARKAS dan SIPLah*. Kementerian Pendidikan, Kebudayaan, Riset, dan Teknologi.
- Kementerian Pendidikan, Kebudayaan, Riset, dan Teknologi. (2022). *Petunjuk teknis pengelolaan dana Bantuan Operasional Sekolah*. Kementerian Pendidikan, Kebudayaan, Riset, dan Teknologi.
- Kementerian Pendidikan, Kebudayaan, Riset, dan Teknologi. (2022). *Peraturan Menteri Pendidikan, Kebudayaan, Riset, dan Teknologi Republik Indonesia Nomor 18 Tahun 2022 tentang Pedoman Pengadaan Barang/Jasa oleh Satuan Pendidikan*.
- Kementerian Pendidikan, Kebudayaan, Riset, dan Teknologi. (2023). *Transformasi digital tata kelola keuangan sekolah*. Kementerian Pendidikan, Kebudayaan, Riset, dan Teknologi.
- Mardiasmo. (2021). *Akuntansi sektor publik* (Edisi terbaru). Penerbit Andi.
- Marianita, M., & Yuneti, A. (2019). Strategi kepala sekolah dalam meningkatkan kinerja guru. *Alignment: Journal of Administration and Educational Management*, 2(1), 83–92.
- McCarthy, A. M., Maor, D., McConney, A., & Cavanaugh, C. (2023). Digital transformation in education: Critical components for leaders of system change. *Social Sciences & Humanities Open*, 8, Article 100479. <https://doi.org/10.1016/j.ssaho.2023.100479>
- Miles, M. B., & Huberman, A. M. (2013). *Analisis data kualitatif* (T. R. Rohidi, Trans.). Universitas Indonesia Press. (Original work published 1994)
- Moleong, L. J. (2016). *Metodologi penelitian kualitatif*. PT Remaja Rosdakarya.
- Mulyasa, E. (2022). *Manajemen dan kepemimpinan kepala sekolah*. Bumi Aksara.
- Navaridas-Nalda, F., Clavel-San Emeterio, M., Fernández-Ortiz, R., & Arias-Oliva, M. (2020). The strategic influence of school principal leadership in the digital transformation of schools. *Computers in Human Behavior*, 112, Article 106481. <https://doi.org/10.1016/j.chb.2020.106481>
- Ordofa, B., & Asgedom, A. (2022). School accountability and its relationship with learning outcomes: A systematic literature review. *Social Sciences &*

Humanities Open, 6, Article
100358. <https://doi.org/10.1016/j.ssaho.2022.100358>

- Permata, I. Y., & Mustoffa, A. F. (2023). Implementasi akuntabilitas dan transparansi pengelolaan dana BOS terhadap RKAS SMP Sunan Kalijaga. *Balance: Economic, Business, Management and Accounting Journal*, 20(2).
- Prahara, T. O., Muhtahid, I. M., & Rosita, T. (2022). Pengaruh supervisi dan peran kepala sekolah terhadap kinerja mengajar guru SD Negeri di Kecamatan Rumbai Pesisir. *Aksara: Jurnal Ilmu Pendidikan Nonformal*, 8(1), 75–86.
- Prasetyo, E., Sari, D. P., & Hidayat, R. (2023). Implementasi sistem informasi keuangan sekolah berbasis digital dalam pengelolaan dana BOS. *Jurnal Pendidikan Akuntansi*, 11(1), 78–90.
- Ruloff, M., & Petko, D. (2025). School principals' educational goals and leadership styles for digital transformation: Results from case studies in upper secondary schools. *International Journal of Leadership in Education*, 28(2), 422–440. <https://doi.org/10.1080/13603124.2021.2014979>
- Saragih, H. (2016). Meningkatkan keterampilan guru membuat perangkat pembelajaran berbasis kurikulum merdeka bagi guru pada sekolah. *JUPIIS: Jurnal Pendidikan Ilmu-Ilmu Sosial*, 8(2), 114–122.
- Sari, M., Putra, T., & Lestari, D. (2022). Akuntabilitas pengadaan barang/jasa sekolah melalui SIPLah: Studi kasus SD Sarasawati 5 Denpasar. *Jurnal Citizen*, 3(2), 98–112.
- Setiawan, N., & Sofyan, H. (2022). Implementasi Kurikulum Merdeka Belajar di SMK Pusat Keunggulan (SMK PK). *Jurnal Taman Vokasi*, 10(1).
- Sine, E. P., Tunti, M. E. D., & Rafael, S. J. M. (2021). Akuntabilitas dan transparansi pengelolaan dana Bantuan Operasional Sekolah: Studi pada sekolah di Kota Kupang. *Jurnal Akuntansi: Transparansi dan Akuntabilitas*, 9(1), 1–8.
- Sugiyono. (2018). *Metode penelitian kuantitatif dan R&D*. Alfabeta.
- Sutopo. (2018). *Metodologi penelitian kualitatif*. Sebelas Maret University Press.
- Usman, H. (2017). Faktor-faktor yang mempengaruhi perilaku kepala sekolah. *Jurnal Tenaga Kependidikan*, 2(3), 12–21.
- Usman, H. (2021). *Administrasi, manajemen, dan kepemimpinan pendidikan: Teori dan praktik*. Bumi Aksara.
- Wiyani, A. (2017). *Manajemen kelas*. Ar-Ruzz Media.
- Yaelasari, M., & Astuti, V. Y. (2022). Implementasi Kurikulum Merdeka pada cara belajar siswa untuk semua mata pelajaran: Studi kasus pembelajaran tatap muka di SMK INFOKOM Bogor. *Jurnal Pendidikan Indonesia*, 3(7), 584–591.