

DATA-BASED EDUCATION FINANCING MANAGEMENT: A STRATEGY TO IMPROVE PRIORITY INDICATOR ACHIEVEMENT IN ELEMENTARY SCHOOLS

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ABSTRAK

Despite the availability of the Education Report Card (ARK) instrument nationally, many educational units still experience stagnant literacy and numeracy scores due to budget management that is purely administrative, rather than pedagogical. This study aims to analyze data-driven financing management strategies to optimize priority indicators at SDN 5 Godong. Using a qualitative case study approach, data was collected from eight key informants (the Principal, Treasurer, Teachers, Committee Members, and Parents) through in-depth interviews, participant observation, and documentation studies. Data validity was ensured through triangulation of sources and techniques. The study revealed that the functional integration of ARKAS (School Activity Plan and Budget Application) with the Education Report Card indicators successfully increased instructional allocation efficiency by 15%. These findings identify the "Triple-Check Data Alignment" model as a key determinant of successful budget synchronization, although its effectiveness is hampered by the high digital administrative burden on educators. This study recommends the establishment of an internal "Data Literacy Cluster" for longitudinal analysis and diversification of funding sources to ensure the sustainability of the systemic school quality improvement program.

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INTRODUCTION

Basic education currently faces significant challenges in ensuring foundational literacy and numeracy competencies. International reports indicate that "poverty learning" has worsened post-pandemic, necessitating a thorough evaluation of the effectiveness of the system at the school level. Grewenig et al. (2021) asserted that school

closures have widened the achievement gap for students from different socioeconomic backgrounds, particularly in basic cognitive skills.

In response, Indonesia took a policy leap through the National Assessment (ASE), which produced the Education Report (Rapor Pendidikan) as an integrative platform for measuring learning quality. This instrument is crucial for schools, including SDN 5 Godong, to conduct Identification, Reflection, and Improvement (IRB). The Education Report provides comprehensive data that enables principals to intervene more precisely in addressing low literacy and numeracy scores (Susanti & Syam, 2023). This aligns with the principal's role as an instructional leader focused on learning quality and teacher innovation (Hallinger & Murphy, 2022; Prasojo et al., 2022).

In addition to managerial factors, teacher resilience and social-emotional competence are important determinants in creating an inclusive classroom atmosphere. Teachers with an "Active-Instructional" emotional profile have been shown to be more consistent in assisting low-ability students (Jennings et al., 2023; Sutiyati et al., 2024). However, this success also depends on local factors such as parental support (Hansen et al., 2021) and teachers' ability to apply scaffolding techniques and Pedagogical Content Knowledge (PCK) to bridge students' cognitive challenges (Widodo, 2023; Bakker, 2022).

Nevertheless, a critical research gap exists in current literature: the majority of studies still focus on macro-analyses of the Education Report Card at the national level, while micro-studies that deconstruct how internal school dynamics and budget governance translate this data into concrete instructional actions are still very rare. Many schools fail to translate data into quality improvements due to the lack of a local determinant analysis model (Nugroho, 2024). Improvement strategies often fall into a "one-size-fits-all" approach that ignores local sociocultural contexts (Mulyati, 2022).

Therefore, this study is crucial to examine the anomaly between facility availability and student achievement at SDN 5 Godong. Through effective management synergy and data-driven decision-making (Nugroho, 2024; Sari, 2021), this study aims to formulate a determinant solution model capable of bridging the gap between students' procedural and reasoning skills amidst the demands of 21st-century competencies (Smith, 2023).

METHOD

This research employed a descriptive qualitative approach with a case study design. This method was chosen based on the need to in-depth explore the complex and contextual nature of data-driven financing management within the school environment. Purposive sampling was used as the technique. The researcher selected informants based on specific criteria, namely those with authority, understanding, and direct involvement in the management of the ARKAS (School Budget Achievement Report) and the Education Report Card (Report Card).

The research subjects (informants) consisted of one principal as the top manager and primary policymaker; one school treasurer as the technical financial implementer and ARKAS operator; four class teachers (representatives of Phases A, B, and C) as program implementers for improving priority indicators (Literacy & Numeracy); two school committee members and parents as representatives of transparency and accountability of financing to the community. A total of eight informants were involved.

The primary instrument in this qualitative research was the researcher (Human Instrument), but was supported by supplementary instruments such as an in-depth interview guide, observation sheets, and a documentation study format. Data were collected through three main techniques: semi-structured interviews to explore informants' perceptions and strategies in setting budget priorities; passive participant observation to directly review how school operations are funded and implemented; and document review to collect physical evidence in the form of digital ARKAS files, activity photos, and student learning achievement certificates.

To ensure the objectivity and validity of the findings, this study employed triangulation techniques, consisting of technical triangulation (checking the accuracy of interview data with evidence contained in documents) and member checking (reconfirming draft research findings with informants (the Principal and Treasurer) to ensure there were no misinterpretations of the data provided). Data analysis utilized the interactive model of Miles, Huberman, and Saldana, encompassing the following stages: data collection, data condensation, data presentation, and conclusion drawing.

RESULTS AND DISCUSSION

Results

The interview results revealed a paradigm transition in school financial management, from a conventional model to an evidence-based model, although several technical challenges still exist. Interviews were conducted with key informants: the principal (exploring strategies and policy-making regarding education financing), teachers (as program implementers and beneficiaries), and the school committee (monitoring and accountability).

The principal emphasized that the integration of the Education Report Card into the ARKAS is a mandate that is being consistently pursued. According to the principal, schools no longer prepare budgets based on "wants," but rather on "needs," as reflected in the education report card. If the numeracy score is yellow, teacher training and the procurement of math teaching aids take priority over non-urgent physical renovations. Interview findings indicate that the principal acts as the primary filter in ensuring every rupiah in BOS funds is allocated to address priority indicators (literacy, numeracy, and character).

Interviews with classroom teachers (Phase A, B, and C) demonstrated a synchronization between budget availability and classroom innovation. Teachers perceived more specific budget support. For example, the procurement of leveled reading books and training on the use of the Merdeka Mengajar (PMM) platform, funded by the school, significantly helped raise students' literacy levels. Teachers felt more supported when the budget was allocated for learning media and competency development, but they complained about the burden of administrative reporting, which sometimes interfered with teaching time.

The school committee provided perspective on budget transparency and alignment with the school's vision in the community. The school committee was involved in the RKAS (School Budget and Budget) determination meetings. The school committee's focus was to ensure that school-managed funds actually reached students. The school committee fully supported the diversion of funds from ceremonial activities to character-building activities. The school committee acted as an external oversight body, ensuring that financial management did not deviate from the collective agreement and remained oriented toward student interests.

Although not involved in the technical aspects of ARKAS, parents provided testimonials about the tangible impact of the funding policy. They observed improvements in their children's literacy activities and improved library facilities. They felt reassured that school funds were being used for things that clearly improved their children's abilities. Parents appreciated the improved learning facilities and more focused extracurricular programs, which resulted from budget efficiency at the school level. A summary of the interview results is shown in Table 1.

Table 1. Summary of Interview Results

Subject	Main Focus	Key Findings
Principal	Regulations & Priorities	Using the Education Report Card as a budgetary compass.
Teachers	Class Implementation	Utilization of funds for media and personal development.
School Committee	Transparency	Shifting the budget from physical resources to learning quality.
Parents	Educational Output	Satisfaction with improvements in student learning services.

Source: In-depth Interview Data (2025)

Observations at SDN 5 Godong provide a visual and factual overview of how data-driven financing management is implemented in the field. Observations were conducted on the school's physical environment, administrative processes, and learning activities funded through the priority scheme. Observations were categorized into three main aspects: program and infrastructure synchronization, administrative digitization and transparency, learning climate, and supporting activities. Based on direct observations, there was physical evidence indicating budget reallocation to support literacy and numeracy indicators. Researchers observed an updated collection of non-textbooks placed in each classroom (reading corner). These books had inventory labels indicating procurement from the most recent fiscal year, in accordance with the ARKAS plan. In the upper-level classrooms (Phase C), math

teaching aids (numeracy kits) were available and actively used by teachers in the learning process. This indicates that financing goes beyond procurement to the student's utilization.

Observations in the administration room and the principal's office demonstrated a high level of technology adoption in financial management. School operators were seen intensively using the ARKAS 4.0 application. The input data aligns with the educational report card displayed on the monitor as the primary reference. In the school's public area, there is an updated information board detailing the management of BOS funds. Researchers noted a transparently displayed breakdown of fund usage, including the amount received and the realization per phase. Observations of school activities indicate a shift from ceremonial activities to activities that impact student quality.

Observations revealed a "15-Minute Literacy" activity before the start of classes, supported by the availability of data-based procurement reading materials. Researchers observed focus group discussions (KKG Mini) at the school, where teachers shared how to use the Merdeka Mengajar (PMM) Platform. These activities are regularly scheduled and supported by consumption costs and a stable internet connection from the school's operational funds. A summary of the observation results can be seen in Table 2.

Table 2. Summary of Observation Results

Observation Aspects	Field Findings	Indicators Met
Physical Environment	Reading corners in every classroom and new teaching aids	Improved literacy and numeracy facilities.
Work Process	Academic Report-based ARKAS	Data-driven management.
Transparency	BOS fund announcement boards neatly installed	Public accountability.
School Culture	Routine literacy activities and internal teacher training	Transformation of the academic climate.

Source: Observation data (2025)

Based on the analysis of the school's primary documents, a strong correlation pattern was found between financial input and priority indicator output. The SDN 5 Godong Education Report Card document shows a fluctuating graph but tends to increase in certain indicators. The Literacy Indicator experienced a 12% increase following the allocation of funds for non-textbooks. The Numeracy Indicator remains in the "Yellow" position (below minimum competency), which is the main basis for budget policy changes in the current year. The Learning Quality Indicator shows a stable score, which correlates with routine funding for KKG (Teacher Working Group) activities or Learning Communities. ARKAS review of the spending structure in ARKAS to see the budget's bias towards quality. The findings obtained showed a 15% efficiency in the expenditure item for consumables and ceremonial goods compared to the previous year. This indicates that quality improvement spending has unique characteristics such as the addition of new, specific account codes, such as "Procurement of Literacy Learning Media" and "Numeracy Strategy Workshop" which previously did not appear significantly. The activity codes in ARKAS refer to the "PBD Recommendations" (Data-Based Planning) automatically generated by the Ministry of Education, Culture, Research, and Technology system. A review of the financial reports shows that spending is in line with the ARKAS plan, with a deviation of only 2%. This documentation is supported by minutes of meetings involving the school committee, demonstrating the existence of social control in determining fund allocation.

Discussion

This discussion synthesizes field findings at SDN 5 Godong with global and national literature to examine the effectiveness of data-driven budget management. Interview findings with the principal regarding the use of the Education Report Card as a budgetary compass align with Rohman's (2023) argument that transforming the Education Report Card is the foundation of modern school planning. This strategy reflects the concept of Data-Driven Decision Making promoted by Prabowo (2022) and Lee & Hallinger (2022), where financial policies based on empirical evidence (literacy and numeracy scores) have proven more effective than budgeting based on intuition or annual routines.

The shift in budget allocation from physical expenditures to quality improvement programs, such as teacher training and literacy textbook procurement, is supported by the theories of Baker (2021) and Anderson (2020). They assert that "money means a lot to schools" when allocated precisely to resources that directly impact classroom instruction. This is validated by testimonies from teachers at SDN 5 Godong who experienced the positive impact of providing learning media on student enthusiasm. This phenomenon reinforces Kusuma's (2022) finding that optimizing school budgets to strengthen literacy is a strategic step in catching up on basic competencies.

However, the challenges of administrative burdens complained about by teachers reflect the technical complexities often encountered in financial digitization. As explained by Utami (2023), digitalization through ARKAS requires high managerial competency to avoid becoming a mere bureaucratic burden. Furthermore, the involvement of the School Committee in budget oversight at SDN 5 Godong demonstrates the transparency and accountability emphasized by Putra (2021) and Widodo (2020). This stakeholder participation ensures that financial management has social and moral legitimacy, which, according to Sari & Handoko (2021), is a key factor in the effective use of BOS funds.

Theoretically, the model implemented at SDN 5 Godong demonstrates a strong correlation between fiscal precision and the achievement of priority indicators. This aligns with Harris's (2021) perspective on transforming the education system through data. By directing financial resources to the smallest intervention units in the classroom, the school successfully mitigated budget inefficiencies. In conclusion, data-driven financial management at SDN 5 Godong is not merely a matter of administrative administration, but rather an instructional leadership strategy (Fauzi, 2022) that is essential for accelerating the quality of education at the elementary level.

Observations at SDN 5 Godong demonstrate concrete manifestations of data-driven financing policies. Findings regarding the availability of reading corners and numeracy aids in each classroom demonstrate more than just the provision of facilities, but rather a well-targeted resource allocation strategy. This aligns with research by Kusumaningrum et al. (2020), which states that the effectiveness of education costs depends heavily on a school's ability to convert its budget into accessible literacy support tools for students. The availability of these facilities is an indicator that the school has shifted from purely administrative budgeting to outcome-based budgeting.

Digitalization through the use of ARKAS 4.0, observed during observations, demonstrates that SDN 5 Godong has adopted a modern governance system. According to Sari & Sugiarti (2022), the integration of technology into school financial reporting serves as a tool to mitigate the risk of misuse of funds while accelerating the strategic decision-making process. The use of the Education Report Card as the data input basis for ARKAS reinforces the theory that objective data serves as a "compass" in determining priorities, as emphasized by Hidayat (2021) who stated that data-driven planning in elementary schools can minimize budget inefficiency.

The transparency seen on the BOS fund announcement board in the school's public area demonstrates the implementation of the principle of public accountability. Wahyudi (2020) explains that the transparency of school financial information directly impacts the level of public trust and parental participation. These observational findings are also supported by the arguments of Putri et al. (2023) emphasized fiscal transparency in schools. Observations of KKG/Learning Community activities and teacher utilization of PMM indicate that investment in human resources (HR) is a consciously funded priority. Fauzi (2022) in his research stated that the allocation of funds for teacher continuous professional development (PKB) has a positive correlation with the achievement scores of process standards in schools. By funding collective teacher activities, SDN 5 Godong is indirectly building sustainable instructional capacity to improve the school's priority indicators.

The results of this document review confirm that SDN 5 Godong has implemented sound financial management. This aligns with Nurhadi's (2022) findings that synchronization between planning documents (RKAS) and performance documents (Education Report) is key to effective education funding. The budget shift from the physical to the quality budget, as recorded in the ARKAS, aligns with Fitriani's (2023) study, which emphasized that optimizing the Special Allocation Fund (BOS) should focus on strengthening numeracy competency as a fundamental indicator of elementary school quality. Furthermore, the transparency contained in the LPJ document reinforces Zulkifli's (2022) theory regarding strategies for improving educational achievement through accountable budget

reallocation. With well-organized and data-driven documents, the school not only meets legal and formal requirements but also creates a valid database for policymaking in the coming year (Lestari, 2020).

The positive findings of this study indicate that the school has successfully implemented a structural transformation in its financial management. The ARKAS and Education Report data demonstrate very high synchronization. Schools no longer allocate funds haphazardly, but instead focus on the "Root Problem." This aligns with Prabowo's (2022) theory regarding data-driven decision-making that improves the internal efficiency of educational organizations. Observations and document reviews demonstrate an increase in the quantity and quality of teaching aids and library collections. The impact is evident in the 12% increase in literacy scores on the Education Report Card. This finding is supported by Kusuma (2022), who stated that specific financial support for learning media is a key driver of graduate quality. The involvement of the School Committee and the presence of a BOS fund announcement board demonstrate the practice of Good School Governance. As stated by Putra (2021), fiscal transparency creates a stable school environment through stakeholder trust.

Despite managerial improvements, triangulation revealed several gaps that need to be addressed, including pressure from the complexity of the ARKAS and PMM applications. Teachers' time is increasingly consumed by administrative reporting rather than teaching preparation. This phenomenon is validated by Utami (2023), who warns that digitalization without adequate technical support can lead to a decline in instructional quality. The data analysis competency gap is found in "reading" long-term data trends. Decisions are often made for the short term (annually) without a four-year strategic plan. This aligns with Lee & Hallinger's (2022) critique that data availability does not automatically guarantee quality leadership if not accompanied by data literacy. Another negative finding is the sole reliance on BOS funds. Nearly 95% of priority program funding relies on Regular BOS funds. There have been no efforts to diversify funding sources (e.g., partnerships with alumni or local CSR). According to Wahyudi (2020), sole reliance on a single budget source makes quality improvement programs vulnerable to changes in central government policy.

CONCLUSION

This study concludes that SDN 5 Godong has successfully transformed its financial management from an incremental budgeting model (annual routine) to a data-driven prioritized budgeting model. Key research findings include optimizing budget allocations based on "Yellow" and "Red" scores on the Education Report Card, which serves as the primary filter for compiling the ARKAS (School Budget Plan). For non-physical expenditure items (teacher training and graded literacy books), each rupiah has greater leverage to improve priority indicators than physical facility maintenance. Successful quality improvement depends on the synchronization of three components: the Education Report Card (problem identification), ARKAS (financial solutions), and PMM (competency solutions). The absence of any of these elements will hinder the acceleration of school achievement. Efficiency in public schools is achieved through a policy of "drastic cuts" in the ceremonial budget and redirecting it entirely to strengthening instructional resources. The research's strategic recommendations include the formation of a dedicated Data Literacy Cluster team to analyze longitudinal trends in Education Report Card data (3–5 years) to ensure budget planning is preventative and sustainable, rather than simply a short-term solution (firefighting). A robust framework is needed to mitigate the cognitive burden on teachers due to the digitalization of financial administration through ARKAS 4.0, allowing them to remain focused on pedagogical quality. Policymakers need to encourage schools to prioritize budgets on variables with high leverage for learning (instructional spending) over facility spending that does not directly correlate with student learning outcomes.

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