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The Principal's Strategic Management Cycle in the Implementation of Online Learning

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ABSTRACT

Purpose of the study: This study aims to describe the implementation of the principal's strategic management in delivering e-learning, to identify the constraints encountered, and to evaluate the success of the program in improving educational quality at three public junior high schools in Bulik District, Lamandau Regency, Indonesia.

Methodology: This study employed a qualitative descriptive approach at junior high school Negeri 1, 2, and 4 Bulik. Informants were selected purposively and included principals, vice principals for curriculum, teachers, IT operators, and students. Data were collected through observation, in-depth interviews, and documentation, and were analyzed using the Miles and Huberman model of data reduction, data display, and verification.

Main Findings: The principals' strategic management was implemented through four interrelated stages: strategic planning, strategy implementation, strategy control, and strategy evaluation. Implementation improved teachers' digital competence, learning effectiveness, and educational quality. However, obstacles persisted regarding human resources, infrastructure, student readiness, and school management, which the principals addressed gradually through training, supervision, and phased procurement.

Novelty/Originality of this study: This study offers a specific portrayal of the full strategic-management cycle by school principals for sustained e-learning in a semi-peripheral region, extending prior research that focused on general leadership, urban settings, or emergency remote learning during the pandemic.

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1. INTRODUCTION

Schools are institutions that are both systematic and systemic, consisting of various components that complement and influence one another to achieve educational goals. The complexity of school organizations demands professional leadership capable of identifying obstacles and formulating strategies to address various issues within the school environment [1]. In this context, the principal occupies a central position not merely as an administrator, but as a strategic leader who determines the direction of the school's development. Principals are expected to meet standards of social, managerial, entrepreneurial, and personal competence to improve classroom instruction [2]. A principal's managerial competence even influences the school's accreditation rating [3]. The impact of these competencies is further strengthened when supported by teacher professionalism as a reinforcing variable [4]. These capabilities are prerequisites for driving change and directing all school resources toward sustainable improvements in educational quality amid the demands of the times.

Changes in the world of education in recent years indicate that digital transformation is no longer an option but a strategic necessity that every educational institution must address. Advances in information technology have transformed the way schools manage instruction, academic administration, communication with students, and the professional development of educators [5]. The digitization of education means integrating technology into all aspects of the learning system, from the curriculum and teaching methods to school administration [6]. Strategic leadership in education has been shown to be closely linked to institutional performance and ethical practices, thereby requiring a clear vision, aligned governance, and school capacity building [7]. Therefore, schools are not only required to provide technological resources but also to build a management system that is adaptable to change.

The COVID-19 pandemic accelerated the adoption of e-learning in schools through a shift toward emergency distance learning, online learning, and blended learning modalities [8]. When pedagogy is placed at the center, online and blended learning can achieve learning outcomes equivalent to those of in-person classes [9]. Even synchronous online learning can foster student engagement that resembles a face-to-face classroom setting [10]. The implementation of digital-based learning at the junior high school level represents a tangible form of educational transformation, as it enables the learning process to be more flexible, interactive, and focused on strengthening 21st-century competencies. However, implementation in the field does not always proceed optimally because schools still face various challenges, ranging from limited digital competencies among teachers to a lack of information and communication technology infrastructure [11]. Online interactions and content adaptation also require teachers to be well-prepared and to have access to learning support [12].

Similar conditions were found at junior high schools in the Bulik Subdistrict, Lamandau Regency. Based on a preliminary study conducted through observations and interviews in December 2025, of the 24 teachers actively teaching, only about 62.5% were able to operate digital learning platforms independently, while the rest were still in the adaptation phase and used technology only for basic functions. In terms of supporting infrastructure, junior high schools in the Bulik subdistrict already have computer labs, internet access, LCD projectors in some classrooms, and devices provided by the government. However, the use of these facilities has not been optimal because the internet connection is unstable at certain times, the number of devices is limited compared to the number of users, and there is no integrated digital learning system in place. Widespread adoption of a Learning Management System (LMS) does indeed require reliable ICT infrastructure, as well as policy support and investment to address barriers to internet reliability [13].

In addition to infrastructure issues, challenges related to human resource readiness have also emerged, such as teachers' difficulties in designing digital instructional materials, managing virtual classrooms, and conducting app-based assessments. Teachers' digital competencies and self-efficacy in online classrooms have been shown to determine the intensity and quality of learning technology utilization [14]. Students' self-efficacy also correlates with their use of online learning platforms, making the strengthening of digital literacy essential [15]. Furthermore, the implementation of online learning fundamentally depends on users' acceptance of the technology [16]. School leaders' attitudes toward new technologies also influence adoption rates in secondary school settings [17].

Various previous studies have examined the role of school principals in improving the quality of education in the digital age, such as a study on school principals' strategies for digital learning during the pandemic [1]. Another study highlights the application of strategic management to improve the quality of education in the digital age [18]. School-based management is also viewed as a framework that enables e-learning to be integrated into the curriculum and school programs by relying on the competencies of school principals [19]. The implementation of school-based management is highly dependent on leadership that drives continuous planning and professional development [20]. Principal leadership in fulfilling national education strategies in elementary schools is also a key determinant of the success of digital transformation [21]. Additionally, educational leaders utilize frameworks such as the Balanced Scorecard and SWOT analysis to monitor performance and guide improvements [22]. Analysis of the internal and external environments serves as the basis for aligning strategies with policy standards and contextual needs [23].

Nevertheless, most of these studies focus more on general leadership aspects or technology implementation in urban school contexts and have not specifically examined how the principal's strategic management cycle is carried out in the context of schools in semi-peripheral areas. Thus, there is a research gap that needs to be addressed through more in-depth empirical studies.

The primary urgency of this research lies in the pressing need to bridge the digital divide and structural inequalities that typically characterize educational institutions outside metropolitan centers. Although strategic e-learning frameworks operate smoothly in resource-rich urban environments, their implementation in semi-peripheral regions which face recurring infrastructure shortages, varying levels of teacher digital literacy, and budget constraints requires a highly adaptive strategic management cycle. This study introduces an innovation by presenting an empirical model of how the classic strategic management cycle (planning, implementation, monitoring, and evaluation) is adapted to address local constraints in a semi-peripheral context. This study moves

beyond the "emergency distance learning" paradigm driven by the pandemic crisis and offers a sustainable blueprint for the integration of digital culture under post-pandemic school-based management.

Given these gaps, the urgency of this study lies in the need to understand school principals' strategic management practices in implementing e-learning based on the empirical conditions of schools, particularly at junior high schools in the Bulik Subdistrict, Lamandau Regency, so that the results can serve as a basis for formulating policies on digital-based educational quality development [24]. Therefore, this study aims to answer three main questions, namely: (1) How do school principals implement strategic management in conducting e-learning to improve the quality of education at junior high schools in the Bulik subdistrict? (2) What are the obstacles encountered in the implementation of the principal's strategic management? and (3) How is the success of the principal's strategic management in implementing e-learning at junior high schools in the Bulik Subdistrict, Lamandau Regency, evaluated?.

2. RESEARCH METHOD

This study employs a qualitative, descriptive research design. The qualitative approach was chosen because the study aims to gain an in-depth understanding of school principals' strategic management of e-learning in real-world field conditions. According to Sugiyono [25]. Qualitative research is a method for studying objects in their natural settings, with the researcher serving as the primary instrument for data collection and analysis. Through this approach, the researcher explores the experiences, perspectives, policies, and practices of school principals and the school community in managing digital-based learning, particularly regarding the processes of strategic planning, implementation, control, and evaluation of strategies.

2.1. Research Setting and Subjects

The study was conducted at three public junior high schools in the Bulik subdistrict, Lamandau Regency, Central Kalimantan, namely junior high school Negeri 1 Bulik, junior high school Negeri 2 Bulik, and junior high school Negeri 4 Bulik. The selection of locations was done through purposive sampling, considering that all three schools had implemented digital-based learning but were still facing challenges in its implementation and exhibited varying levels of digital readiness. Informants were selected using purposive sampling, a method that deliberately selects informants based on characteristics relevant to the research objectives [25]. The research informants are presented in Table 1.

Table 1. Research Informants

No	Informant	Number	Criteria
1	Principal	2 people	Leads a junior high school and is involved in digital learning policies
2	Vice Principal (Curriculum)	3	Involved in the management of academic programs
3	Teachers	6	Active users of e-learning platforms for at least 2 years
4	School Operator/IT Team	3	Responsible for the school's technology systems
5	Students	6	Actively participating in e-learning

Source: Processed data (2026)

2.2. Data Collection Methods and Instruments

In this qualitative study, the researcher served as the primary instrument (human instrument), supported by instruments such as observation, interview, and documentation guidelines. Data were collected using three techniques. First, direct observation enables the researcher to understand the data's context within the broader social situation holistically. Second, in-depth interviews and meetings to exchange information and ideas through questions and answers, constructing meaning around a topic, focusing on indicators of planning, implementation, monitoring, and evaluation. Third, documenting the collection of records, such as school work programs, the Annual School Budget Plan (RKAS), training schedules, photos of activities, and screenshots of the Learning Management System (LMS) in use [25]. Primary data was obtained directly from informants, while secondary data was obtained from supporting documents. To facilitate reading, the informant codes used in the presentation of the results are detailed in Table 2.

Table 2. Informant Codes and Interview Focus

Code	Informant	Data Focus
KS-01	Principal of Bulik Public Junior high school No. 1	Planning, evaluation, quality

KS-02	Principal of Bulik Public Junior high school No. 2	Implementation, Teacher Competency
KS-03	Principal of Bulik Public Junior high school No. 4	Control and Supervision
KS-04	Vice Principal (Curriculum)	Management and Development Planning
G-03, G-05	Subject Teachers	Teaching Practices and Challenges

2.3. Data Validity and Analysis

The validity of the data was tested using four criteria: credibility, transferability, dependability, and confirmability [25]. Data analysis was conducted from before the researchers entered the field, throughout data collection, and up to the preparation of the report. The data analysis technique involved three stages: data reduction, which involved selecting and simplifying relevant data; data display in the form of narrative text, charts, or tables to ensure ease of understanding; and conclusion drawing and verification, in which preliminary conclusions are verified with valid and consistent supporting evidence throughout the research process to produce credible conclusions.

3. RESULTS AND DISCUSSION

3.1. Implementation of the Principal's Strategic Management in Conducting E-Learning

The research findings indicate that strategic management implementation by school principals occurs through four interrelated stages: strategic planning, strategy implementation, strategy control, and strategy evaluation. A summary of the findings for each stage, along with supporting evidence, is presented in Table 3.

Table 3. Summary of Findings on the Implementation of E-Learning Strategic Management

Stage	Key Activities	Evidence/Source
Strategic Planning	Formulation of a digital vision, analysis of infrastructure needs and teacher competencies, annual work program, integration into the RKAS using BOS funds	Interview (KS-01); RKAS documents
Strategy Implementation	Formation of an IT team, assignment of tasks, LMS training, use of Google Classroom, Google Meet, WhatsApp Group, online quizzes	Interview (KS-02); classroom observation
Strategy monitoring	Weekly monitoring through teacher reports and coordination group meetings, academic supervision each semester, feedback	Interviews (KS-03); supervision documents
Strategy evaluation	Periodic evaluation meetings, setting of indicators, follow-up, strategy revisions, follow-up programs	Interviews (KS-01, KS-04)

During the strategic planning phase, the principal formulates a school vision that incorporates the use of information technology, analyzes the needs for digital infrastructure and teacher competencies, develops an annual work plan, and integrates these needs into the School Work Plan and Budget (RKAS) with funding support from the School Operational Assistance (BOS) program. One principal stated:

"At the start of each school year, we develop the school's work plan through a joint meeting. During that meeting, we discussed digital learning needs ranging from teacher training and the procurement of supporting equipment to targets for the use of digital media in instruction. All of these programs are then included in the RKAS to ensure a clear basis for funding." (KS-01)

The researchers' interpretation indicates that the development of a digital vision involves needs analysis, target setting, and budget allocation, reflecting the school principals' efforts to integrate digital transformation in a planned manner. This practice aligns with the view that school principals need to embed e-learning into school strategies through a digital-era planning framework that treats technology integration as a core planning activity [7]. During the strategy implementation phase, the principal formed an information technology development team, assigned tasks to the vice principal, system administrators, and teachers, and organized training on the use of LMS, learning applications, and interactive presentation media. Teachers utilized platforms such as Google Classroom, Google Meet, WhatsApp Groups, and online assessment applications. The principal emphasized:

"We formed a special team to handle digital learning. Teachers are undergoing training in phases, and each teacher is required to incorporate digital media into at least some of their lesson plans. We also provide support to any teachers who are still having difficulty." (KS-02)

The observations reinforce these findings: most classrooms are equipped with LCD projectors and internet access, which teachers use during instruction. Readiness for implementation, which relies on teachers' digital competencies and self-efficacy, supported by targeted LMS training, is consistent with previous findings that professional development is a key determinant of e-learning success [14]. During the strategy control phase, the principal conducts weekly monitoring through teacher reports and coordination groups, as well as academic supervision each semester to assess the quality of learning and provide feedback (KS-03). The strategy evaluation phase is carried out through periodic evaluation meetings, which serve as the basis for developing follow-up programs, enhancing teacher competencies, and revising strategies (KS-01).

These findings are consistent with Fred R. David's strategic management theory, which emphasizes three main stages: strategy formulation, strategy implementation, and strategy evaluation, as well as the concept proposed by Wheelen and Hunger, which adds environmental scanning and control to a continuous cycle. The analysis of the internal and external environments conducted by the school principal aligns with strategic management practices in educational institutions that emphasize aligning strategies with contextual needs [23]. These results also reinforce Sari's finding that the principal's leadership is a central factor in the success of digital learning [1]. The difference is that Sari's study focused on emergency learning during the pandemic, whereas this study highlights the sustainability of strategy implementation in building a school's digital culture in the post-pandemic era [24]. The entire strategic management cycle is illustrated in Figure 1.

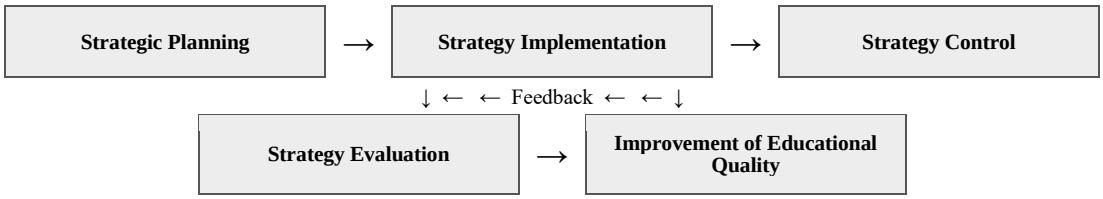

Figure 1. The Principal's Strategic Management Cycle in the Implementation of E-Learning

3.2. Challenges in Implementing E-Learning Strategic Management

The research findings identified four interrelated groups of challenges: human resources, infrastructure, learners, and management. Details of each challenge and its corresponding mitigation strategies are presented in Table 4.

Table 4. Challenges in E-Learning Implementation and Mitigation Strategies

Aspect	Type of Challenge	Mitigation Strategy
Human Resources	Teachers' digital competencies are uneven, particularly among senior teachers; the quality of e-learning is inconsistent	Phased training, mentoring, and academic supervision
Infrastructure	Internet connectivity is unstable; the number of computers and LCD projectors is limited; power outages	Phased procurement in accordance with the BOS budget
Students	Limited devices and data allowances, varying levels of motivation	Creative guidance, motivation building
Management	Budget constraints, program scheduling, and coordination among school community members	Phased scheduling, strengthening internal coordination

Human resource challenges are characterized by uneven digital competencies among teachers, particularly senior teachers who require more intensive mentoring, as stated by the school principal:

"Not all teachers have the same proficiency in using technology. More experienced teachers require more intensive support as they continue to adapt to the use of digital learning applications. Therefore, the school continues to provide training and guidance so that all teachers can keep up with technological advancements." (KS-02)

Infrastructure challenges include an unstable internet connection, a limited number of computers and LCD projectors, and power outages (KS-01). Challenges faced by students include limited access to devices,

internet data limits, and varying levels of motivation to learn, so teachers need to provide more creative support, as one teacher explained:

"Most students already have their own cell phones, but there are still some who use their parents' phones, so they aren't always able to fully participate in class. In addition, students' motivation to learn varies, so teachers need to be more creative to keep them actively engaged in digital learning." (G-03)

Management challenges included budget constraints, program scheduling, and coordination among school community members, which required adjustments to allow the program to proceed in phases (KS-04). Findings regarding human resources align with those of Artanti et al., who state that improving teacher competence requires ongoing academic supervision [26]. The identified infrastructure challenges also align with studies on schools with limited resources, indicating that the success of digital transformation is heavily influenced by the readiness of technological facilities and infrastructure [27]. Challenges related to internet reliability require policy support and investment to ensure the sustainable adoption of LMS [28]. Additionally, the adoption of online learning is also vulnerable to governance disruptions when the principles of school-based management are not optimally implemented [20]. Nevertheless, school principals mitigated these challenges through teacher training, strengthened internal coordination, periodic academic supervision, and the gradual development of facilities in line with the school's budgetary capacity.

3.3. Evaluation of the Success of Strategic Management Implementation

The evaluation of success indicates a positive impact on three main aspects: improved teacher competence, learning effectiveness, and educational quality. A summary of the success indicators is presented in Table 5.

Table 5. Success Indicators for E-Learning Implementation

Aspect	Success Indicators	Source
Teacher Competence	Teachers are able to manage the LMS, develop digital teaching materials, and create interactive media	KS-02
Learning Effectiveness	Students are more active; online assignments, submissions, and attendance are better organized	G-05
Quality of Education	Improved quality of learning processes and outcomes, learning innovations, and accreditation support	KS-01
Development plan	Continuing education, network expansion, equipment upgrades, and LMS development	KS-04

First, the improvement in teachers' competencies is evident in their ability to utilize LMS, develop digital teaching materials, and use interactive learning media, all of which are closely tied to training, mentoring, and regular supervision. The school principal stated:

"Currently, nearly all teachers are able to use the LMS to upload materials, assign tasks, and conduct online assessments. Teachers are also becoming more creative in developing digital learning media, making the learning process more engaging for students." (KS-02)

Second, learning effectiveness has improved because students have become more active, while assigning and collecting assignments and tracking attendance can be done online, making it easier to manage the learning process and document learning outcomes, as one teacher emphasized:

"With the LMS and learning apps, students can access materials anytime. Assignments are also submitted online, making them easier to monitor, while student attendance is automatically tracked. This makes the learning process more effective." (G-05)

Third, the use of technology has improved the quality of the learning process and student learning outcomes, and has led to the emergence of educational innovations that support the achievement of school accreditation standards (KS-01). In addition, all school principals have developed improvement plans that include continuing professional development, upgrades to internet connectivity, the addition of devices, and the development of a learning management system (LMS) (KS-04).

These findings support Mustari's assertion that the quality of school principals' leadership significantly improves the quality of education by developing teacher competencies and introducing learning innovations [29].

The research results are also consistent with Artanti et al., who found that academic supervision is an effective strategy for enhancing teacher competencies and the quality of digital-based learning [26]. The Balanced Scorecard approach used by school leaders to monitor initiatives and align school-based management activities with school outcomes further strengthens the argument that evaluation must be situated within a framework of measurable performance monitoring [22]. The effectiveness of online learning also depends on designs that maintain student motivation, including the implementation of engaging game-based designs [30]. Thus, this study offers a more comprehensive perspective: the success of e-learning implementation is not determined solely by technological sophistication but also by the effectiveness of the principal's strategic leadership in managing all resources in a planned, adaptive, and sustainable manner [31].

Although this study provides significant insights into the strategic management cycle in a semi-peripheral educational setting, it has several limitations that must be acknowledged. First, its geographic scope is limited to a specific subdistrict in Lamandau Regency, which may limit the ability to directly generalize the findings to regions with vastly different socioeconomic or technological profiles. Second, the reliance on qualitative data through interviews and observations inherently introduces subjective interpretations from school stakeholders. Future research could utilize a mixed-methods approach, combining quantitative metrics such as structural equation modeling (SEM) to statistically measure the direct impact of each stage of strategic management on student academic outcomes and long-term institutional performance across a broader group of institutions.

4. CONCLUSION

The strategic management of school principals in implementing e-learning at junior high schools in the Bulik subdistrict is, in essence, a comprehensive cycle of strategic leadership that interlinks planning, implementation, monitoring, and evaluation, not merely a series of separate technical activities. The key to success lies in the principal's ability to position themselves as a visionary leader who directs, empowers, and coordinates all school resources despite limitations in human resources, infrastructure, student readiness, and management. Thus, digital transformation in schools is determined more by the quality of adaptive, sustainable strategic leadership than by the availability of technology alone. Implicitly, this study serves as a useful reference for school principals and education stakeholders in designing context-appropriate digital learning governance, particularly in semi-peripheral regions, and enriches educational management research on the sustainability of e-learning in the post-pandemic era. Nevertheless, this study has limitations, namely its scope, which involved only three schools in a single subdistrict, and its descriptive, qualitative approach; consequently, its findings cannot yet be broadly generalized. Therefore, future research is advised to expand the study locations and the number of informants, incorporate quantitative approaches or mixed-methods designs, and directly measure the impact of strategic management on student learning outcomes to obtain a more comprehensive picture.

AUTHOR CONTRIBUTIONS

Conceptualization, K. and S.S.; Methodology, K.; Investigation, K.; Formal Analysis, K. and S.S.; Data Curation, K.; Writing – Original Draft Preparation, K.; Writing – Review & Editing, S.S.; Supervision, S.S. All authors have read and agreed to the published version of the manuscript.

CONFLICTS OF INTEREST

The authors declare no conflict of interest.

USE OF ARTIFICIAL INTELLIGENCE (AI)-ASSISTED TECHNOLOGY

Not applicable.

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