



Principals' Perspectives on Managing Digitalized Public Secondary Schools in Buea-CRM

ETONGE Ndeley Samuel

Department of Educational Foundations and Administration, Faculty of Education, University of Buea, Cameroon.

ABSTRACT

This study examines principals' perspectives on managing digitalized public secondary schools in the Buea municipality of Cameroon. The research aims to explore how school leaders perceive their roles in digital leadership, identify strategies employed to integrate digital tools, and assess the challenges and enablers influencing effective digital management. Understanding these perspectives provides insights into the practical and strategic dimensions of digital school leadership in resource-constrained contexts. A descriptive cross-sectional design is employed, with data collected from all 25 public secondary school principals in Buea using structured questionnaires and semi-structured interviews. Quantitative data are analyzed using descriptive statistics, including percentages and means, while qualitative responses are thematically analyzed to capture in-depth insights regarding leadership practices, challenges, and enablers. Reliability and validity are ensured through expert review and pilot testing of instruments. The findings reveal that principals generally possess moderate to high digital literacy and recognize the importance of technology for administrative and instructional efficiency. Digital adoption is higher in administrative functions, such as student record management, than in teacher performance tracking. Principals face challenges including insufficient infrastructure, limited training, budgetary constraints, and operational demands, while collaborative teacher practices, professional development programs, and policy recognition act as key enablers. The study concludes that principals play a pivotal role in shaping digital integration, but systemic and resource-based factors significantly influence their effectiveness. Implications include the need for policy-driven support, targeted professional development, and collaborative strategies to strengthen digital leadership, thereby enhancing administrative efficiency, instructional quality, and overall school performance (Hitt & Tucker, 2016; Monjong Emmanuel, 2025).

ARTICLE'S INFO

Article No.: 070126112

Type: Research

Full Text: [PDF](#), [PHP](#), [HTML](#), [EPUB](#), [MP3](#)

DOI: [10.15580/gjah.2026.1.070126112](https://doi.org/10.15580/gjah.2026.1.070126112)

Accepted: 07/07/2026

Published: 12/07/2026

Keywords: Digitalized Public Secondary Schools, Principals' Perspectives, Digital leadership, Buea-CRM

***Corresponding Author**

Etonge Ndeley Samuel

E-mail: drndeley@gmail.com

Article's QR code



INTRODUCTION

Education systems worldwide are undergoing rapid transformation through digital technologies that reshape how schools operate, teach, and manage information. This trend is especially visible in public secondary schools, where principals increasingly confront expectations to integrate digital infrastructure into teaching, learning, and administrative functions (Voogt et al., 2013; Timotheou et al., 2023). In Sub-Saharan Africa and in Cameroon specifically, the pace and impact of digitalization vary substantially due to disparities in funding, infrastructure, and technical capacity (Adewale et al., 2022). Within the Buea municipality of Cameroon, a growing number of public secondary schools adopt digital tools for record-keeping, communication, and educational delivery, yet the strategic management of these innovations remains underexplored. Prior research highlights that while some schools report average availability and use of information and communication technologies (ICTs) for institutional administration, principals are often challenged by limited formal digital strategy and systematic capacity building (Monjong Emmanuel, 2025; see also Adewale et al., 2022). This study therefore foregrounds principals' perspectives on managing digitalized public secondary schools within the Buea-CRM context, addressing a gap in empirical knowledge on how school leaders conceive, enact, and negotiate digital transformation in daily management tasks and pedagogical leadership.

Understanding principals' management of digitalized schools in this context is relevant because leadership at the school level is a key determinant of successful technology integration and organizational change (Vanderlinde & van Braak, 2010). Moreover, principals' digital leadership practices influence not only administrative efficiency but also teacher engagement, resource allocation, and school culture (Hitt & Tucker, 2016; Schrum & Levin, 2016). Despite this, there is limited scholarly inquiry into how principals in Cameroonian secondary schools interpret their roles in the digital era, what challenges they face, and what enabling factors shape their leadership practices. Thus, this work fills an important gap by articulating a conceptual and empirical basis for future policy and practice improvements.

Background and Context

Cameroon's education sector, like many in sub-Saharan Africa, is navigating pressures to align secondary schooling with global trends shaped by the Fourth Industrial Revolution (4IR) and digital transformation agendas. Digitalization in schools encompasses tools and practices that support administrative work, teaching-learning processes, and communication with stakeholders (Voogt et al., 2013). In Buea, public secondary schools operate under the dual pressures of

meeting national education standards and adapting to evolving expectations for digital competency among learners and educators. Empirical evidence from the municipality shows average availability and usage of ICT tools in school administration, which extends to human resource, physical resource, and financial administration (Monjong Emmanuel, 2025). Yet, the depth of digital integration and the leadership practices anchoring such use are not yet well documented.

Existing research in related contexts shows that school leaders' digital competence, vision, and management strategies significantly shape how digital technologies are implemented and sustained (Chamakiotis & Panteli, 2011; Vanderlinde & van Braak, 2010). School leaders who exhibit strategic digital leadership are more likely to promote collaborative cultures, support professional learning, and align digital initiatives with pedagogical goals (Hitt & Tucker, 2016). Conversely, leadership that is constrained by limited resources, insufficient training, and unclear policy directives may hinder effective digitalization (Vanderlinde & van Braak, 2010; Castaño Muñoz et al., 2023). In sub-Saharan contexts, these constraints are often acute due to resource shortages and uneven infrastructure, compelling principals to innovate within limits (Monjong Emmanuel, 2025).

The literature on digital school leadership underscores the critical role of principals as strategic change agents in the digitalization of educational institutions. Digital leadership goes beyond the mere technical management of devices and infrastructure; it comprises the cultivation of vision, organizational culture, professional capacity, and stakeholder engagement to enable meaningful digital adoption (Kampylis et al., 2015; Hitt & Tucker, 2016). Vanderlinde and van Braak (2010) argue that digital transformation in schools requires aligned strategic planning, resource allocation, and professional development clustering around pedagogical and administrative priorities.

Recent research incorporates the concept of digital leadership within broader leadership frameworks. For example, transformational leadership models highlight the importance of inspiring staff, fostering innovation, and mobilizing organizational change (Bass, 1985; Fullan & Quinn, 2015). Within this frame, principals act as visionaries who articulate strategic goals, build supportive cultures, and facilitate capacity building for teachers (Schrum & Levin, 2016). Research trends also emphasize that digital leadership includes ethical concerns such as data security, equitable access, and inclusive practices, reinforcing that leadership practices must consider social as well as technical factors (Timotheou et al., 2023; Voogt et al., 2013).

Empirical studies from diverse contexts reveal persistent challenges. Leaders often experience limited digital competence, insufficient training, and resource

constraints that impede the enactment of robust digital strategies (Adewale et al., 2022; Castaño Muñoz et al., 2023). Furthermore, research in K–12 settings shows that leaders' perceptions of digitalization influence how they prioritize initiatives and allocate resources, affecting the quality of digital integration (OECD, 2023; Navaridas-Nalda et al., 2020). In Cameroon, evidence indicates that while ICT tools are present, their utilization for systematic digital administration and pedagogical leadership remains modest, suggesting gaps in leadership practices that inhibit full digital transformation (Monjong Emmanuel, 2025). This literature establishes that digital leadership is multidimensional—encompassing strategic planning, professional learning, culture building, and resource management—and that principals' perspectives shape the extent to which schools enact meaningful digital change.

LITERATURE REVIEW

Digital leadership in education increasingly attracts scholarly attention as schools adopt information and communication technologies (ICTs) to support teaching, learning, and administrative processes. Empirical research highlights the role of school leadership in shaping the extent and quality of technology integration (Vanderlinde & van Braak, 2010; Hitt & Tucker, 2016). In diverse contexts, studies indicate that principals' digital leadership contributes significantly to teachers' performance, instructional innovation, and organizational capacity for digital transformation (Saeed & Kang, 2024). For instance, research exploring the impact of digital leadership on secondary school teachers, shows that principals who adopt a strategic vision for digital integration enhance teachers' digital literacy, support pedagogical innovation, and promote a positive digital culture (Saeed & Kang, 2024).

A systematic review of leadership strategies found out that, while leadership is central to fostering the use of technology among teachers, there remains a paucity of studies that focus specifically on the strategies principals employ to enhance technology adoption in secondary schools globally (Adewale, 2024). This suggests that although broad leadership categories are discussed, specific leadership interventions connected to contextual realities of schools—especially in developing country contexts—are under-reported in empirical studies.

Studies conducted in European contexts illustrate how school leaders conceptualize and enact digitalization processes in K–12 settings. For example, research in Swedish municipalities reveals that leaders' perceptions of digitalization significantly influence arrangements for digital technology expansion, including collaboration practices and professional development (Reis-Andersson, 2024). Similarly, investigations in municipal K–12 schools show that enhancing digital competence among teachers, investing in

hardware/software, and addressing resource constraints are themes that shape the digitalization process (Reis-Andersson, 2024). These findings underscore that digital leadership encompasses not only technology provision but also cultural and capacity dimensions of school innovation.

Within African contexts, research in South African schools shows that principals' digital leadership practices remain nascent, with priorities often leaning toward traditional management rather than transformative digital leadership. Teachers perceive principals' digital leadership as primarily resource provisioning and administrative rather than pedagogically oriented, highlighting the need for more comprehensive leadership roles in digital age teaching environments (South African case study, 2024). Moreover, studies from Cameroon focus on the use of ICTs in administrative domains within the Buea municipality, revealing average levels of use in human resource, physical resource, and financial management (Monjong Emmanuel, 2025). However, specific insights into principals' perspectives on managing digitalized schools—particularly how leadership shapes digital policy execution and technology integration—remain limited, pointing toward significant research gaps that the current study aims to address.

Recent literature also explores emerging areas, such as principals' role in supporting the integration of artificial intelligence (AI) in schools. Systematic reviews highlight that digital leadership significantly influences teachers' willingness and capacity to adopt AI through resource allocation, professional support, and collaborative leadership styles (Frontiers review, 2025). These studies broaden the understanding of digital leadership from mere ICT integration towards managing complex, evolving technologies within educational settings. Across these studies, digital leadership is consistently linked to improved instructional environments, enhanced teacher performance, and organizational adaptability. Yet, much of the literature underscores variation in contexts, leadership practices, and outcomes, suggesting that digital leadership is neither uniform nor context-neutral. Instead, it interacts dynamically with school culture, resource availability, policy environments, and leaders' capacities.

Theoretical Foundation

Understanding principals' perspectives on managing digitalized schools requires grounding in leadership and digital innovation theories that conceptualize how leaders influence organizational change. Four principal theoretical frameworks recur in the literature: transformational leadership theory, distributed leadership theory, diffusion of innovations theory, and models of digital leadership.

Transformational Leadership Theory posits that leaders who articulate a clear vision, inspire stakeholders, and foster professional development are more effective in driving organizational change (Bass, 1985; Fullan & Quinn, 2015). In digital contexts, transformational leaders encourage innovation and motivate teachers to integrate digital tools into pedagogy. Digital leadership, when framed as transformational, emphasizes vision, culture building, and stakeholder engagement—components identified as crucial for digital transformation in schools (Hitt & Tucker, 2016). Distributed Leadership Theory highlights leadership as a shared process distributed across multiple actors, not confined to principals alone. This theory suggests that technology integration in schools benefits when leadership responsibilities—including digital strategy implementation and teacher support—are shared among administrators, heads of department, and teacher leaders (Spillane, 2006). Empirical evidence from studies on ICT integration in Kenya's iMlango project schools supports this view by connecting distributed leadership with effective technology practices in classroom teaching and learning (Muchiri, 2024).

Diffusion of Innovations Theory explains how technological innovations are adopted within social systems over time (Rogers, 2003). In school settings, principals act as change agents who influence how teachers perceive, adopt, and sustain digital tools and practices. Leaders who understand the diffusion process tailor interventions to address perceived complexity, compatibility, and observability of innovations, thereby accelerating adoption and integration. Digital Leadership Models integrate traditional leadership theory with technology innovation frameworks. For instance, frameworks such as DigCompOrg conceptualize digital leadership beyond ICT competence to encompass strategic planning, resource management, data-informed decision-making, and professional learning cultures (Kampylis et al., 2015; Digital Leadership Review, 2025). Digital leaders are perceived as strategic visionaries who align technology initiatives with pedagogical goals and organizational priorities, rather than merely managing infrastructure. These models stress that digital maturity involves iterative, context-dependent processes rather than linear implementation of digital tools.

Collectively, these theoretical strands support a conceptualization of digital leadership that emphasizes strategic vision, collaborative capacity building, and context-sensitive decision-making. Principals' perspectives on digital school management are thus best understood through lenses that capture both the human (leadership and culture) and technical (ICT infrastructure and innovation) dimensions of school transformation.

Identified Gaps

Despite rich insights, the existing literature reveals several substantive gaps that warrant further investigation. Within contextual specificity, a significant portion of digital leadership research originates from European and North American contexts (Reis-Andersson, 2024). While these studies offer valuable frameworks, their applicability to African public school settings with different resource constraints, policy environments, and digital cultures is not well established. Research that foregrounds local leaders' perspectives in contexts like Cameroon remains sparse. In an examination of principals' perspectives on practice, many studies focus on outcomes associated with leadership (e.g., teacher performance, student outcomes, or digital integration levels) rather than leaders' lived experiences, perceptions, and strategies in managing digital transformation (Adewale, 2024; Frontiers review, 2025). Understanding how principals interpret their roles and enact digital management practices from their own viewpoints remains under-explored.

Within the scope of a strategic vs. operational integration, research highlights the importance of vision and digital strategy but seldom distinguishes between strategic leadership and operational management in digital contexts. In resource-constrained settings, principals often prioritize operational tasks, but research does not fully unpack how this affects long-term digital integration and school innovation (South African case study, 2024). Policy and institutional intersections reveals that, there is limited empirical work examining how national and regional education policies intersect with school-level digital leadership practices, especially in low- and middle-income countries. Policy contexts shape leaders' capacities and constraints, yet this dimension remains inadequately theorized in current literature. Leadership Development and Capacity unveil that, while digital competence is recognized as critical, there is insufficient research on how principals build their own digital leadership capacities and whether systemic supports (e.g., professional development) are accessible and effective in diverse contexts.

Justification for the Current Study

The synthesis of existing research underscores that digital leadership is pivotal for effective school digitalization, shaping both administrative efficacy and instructional innovation. However, evidence from contexts similar to Buea-CRM is limited, particularly in terms of how principals perceive and enact their leadership roles within public secondary schools. The current study is therefore justified on several grounds: First, contextual relevance necessitates research within the Buea educational landscape, where public secondary schools are expanding digitalization amidst unique infrastructural, policy, and cultural dynamics. By

centering local leaders' perspectives, the study contributes to a more nuanced understanding that extends beyond generalized models developed in dissimilar contexts.

Second, the study addresses the knowledge gap on principals' lived experiences of digital leadership, offering empirical insight into the meanings, strategies, and challenges that school leaders encounter. This focus enriches scholarly discourse by bridging macro-level frameworks and micro-level practices. Third, by examining how principals balance strategic vision with operational demands, the study illuminates critical dimensions of digital school management that have implications for policy, practice, and leadership development programs. Finally, the current study provides empirical evidence that can inform policy alignment, professional development, and resource allocation strategies. Understanding principals' perspectives on digitalization enhances the capacity of education stakeholders—including policymakers, training institutions, and school administrators—to design contextualized interventions that strengthen digital leadership and school performance.

Hypothesis or Guiding Questions

Given the exploratory nature of this research and the need to understand principals' lived experiences and perceptions, rather than formal hypothesis testing, the study is guided by the following research questions: How do principals in public secondary schools in Buea perceive their role in managing digitalized school processes (including administration and pedagogical leadership)? What strategies and practices do principals employ to support digitalization within their schools? What contextual factors (e.g., infrastructure, training, policy, culture) enable or constrain principals' management of digitalized public secondary schools in Buea? How do principals' digital leadership practices align with institutional goals and stakeholder expectations? These questions aim to elucidate both the subjective and practical aspects of digital school management from the vantage point of principals, thereby providing a nuanced understanding of digital leadership in the Cameroonian secondary education landscape.

Research Problem

Public secondary schools in Buea are progressively adopting digital tools for school administration, communication, and instructional enhancement. However, the integration of digital technologies often occurs without coherent strategic planning, systematic capacity building, or clear leadership practices that align digital initiatives with institutional goals (Monjong Emmanuel, 2025). Consequently, principals may struggle to leverage digital tools effectively, resulting in uneven administrative efficiency, suboptimal teacher

support, and limited pedagogical innovation. The research problem, therefore, concerns how principals perceive and manage the digitalization process in public secondary schools in Buea-CRM, including their roles, strategies, challenges, and the institutional contexts that shape digital leadership practices.

This problem is significant because effective management of digitalized schools demands not only the availability of digital devices but also the strategic capacity to align technology with school goals, cultivate digital pedagogies, and sustain organizational change (Hitt & Tucker, 2016). Without a clear understanding of principals' perspectives, national and regional efforts to strengthen digital education risk being superficial or fragmented.

METHODS

Overview of the Study

This study aimed to explore principals' perspectives on managing digitalized public secondary schools in the Buea municipality of Cameroon. The primary objectives were to examine how principals perceived their roles in digital leadership, identify strategies employed for digital management, and investigate the challenges and enablers that influenced the adoption and integration of digital technologies. The study used a descriptive, cross-sectional design to capture empirical data from principals at multiple schools, thereby providing a snapshot of leadership practices and perceptions at a single point in time. Data were collected through structured questionnaires and semi-structured interviews to ensure a comprehensive understanding of both quantitative and qualitative dimensions.

The results highlighted that while principals demonstrated awareness of digital tools and administrative systems, variations in digital leadership strategies, resource allocation, and teacher support were evident across schools. Key findings included the prevalence of operational-focused digital management over strategic visioning, the critical role of infrastructure and training in shaping leadership effectiveness, and the influence of policy and stakeholder expectations on digital integration. These findings offered evidence for targeted interventions in policy, training, and resource allocation to strengthen digital school management in Buea.

Research Design

The study adopted a descriptive cross-sectional research design, which enabled the collection of data at a single point in time to examine principals' perceptions and practices in managing digitalized schools (Creswell & Creswell, 2018). This design was appropriate because it allowed for the description of prevailing trends, challenges, and strategies without manipulating variables. The cross-sectional approach facilitated

comparisons across schools in Buea, highlighting variations in digital leadership practices among principals operating under similar policy and infrastructural contexts. By combining quantitative and qualitative elements, the design enabled triangulation of data, enhancing the credibility of the findings (Bryman, 2016).

Population and Sample

The target population consisted of all principals of public secondary schools in the Buea municipality, which totaled 25 schools as per the Ministry of Secondary Education's 2025 registry. Principals were selected because they held primary responsibility for school administration, resource allocation, and instructional leadership, all of which intersected with digitalization processes. The total population included 25 principals (N=25), which allowed for a census approach, ensuring that every school leader had an opportunity to participate.

Sampling Technique

Given the small population size, the study employed purposive sampling to ensure that participants had direct experience in managing digitalized school processes (Etikan, Musa, & Alkassim, 2016). The inclusion criteria required that principals must have at least two years of experience in their current role to guarantee familiarity with digital systems implemented in their schools. This approach ensured that respondents had sufficient exposure to leadership practices, strategic decisions, and challenges associated with digitalization. Purposive sampling also enabled the inclusion of schools with varying levels of digital infrastructure, providing diverse perspectives on principals' management practices.

Data Collection Methods

Data were collected using a mixed-methods approach to capture both quantitative and qualitative information. Quantitative data were obtained through structured questionnaires, which included Likert-scale items assessing principals' perceptions of digital leadership, administrative practices, and institutional support for digital integration. The questionnaires also included demographic questions and items about resource availability. Qualitative data were collected through semi-structured interviews with principals, which allowed for in-depth exploration of leadership strategies, challenges encountered, and contextual factors influencing digital management. Interview questions were designed to complement the questionnaire items, enabling triangulation and a richer understanding of principals' lived experiences. Data collection was conducted between March and May 2025, with each principal completing a 20–30-minute interview session.

Research Instruments

The study employed two instruments: a structured questionnaire and a semi-structured interview guide. The questionnaire consisted of four sections: demographic information, digital leadership practices, resource and infrastructural availability, and perceived challenges. It was developed based on previous research on school digital leadership (Hitt & Tucker, 2016; Vanderlinde & van Braak, 2010) and adapted to the Cameroonian context through consultation with local education experts. The semi-structured interview guide contained open-ended questions addressing strategic planning, operational management, teacher support, policy alignment, and enablers and barriers to digitalization. Probing questions were used to elicit detailed responses and clarify participants' statements.

Validity and Reliability

The instruments underwent a content validity assessment through expert review by three education researchers and two school administrators familiar with digital school management. Feedback focused on the clarity, relevance, and comprehensiveness of questionnaire items and interview questions. Modifications were made to ensure cultural appropriateness, avoid ambiguity, and align with local school contexts. Reliability was established through a pilot study conducted with three principals from schools outside the target municipality. Cronbach's alpha was computed for the Likert-scale questionnaire items, yielding a coefficient of 0.82, indicating acceptable internal consistency (Nunnally, 1978). The semi-structured interview guide was tested for clarity and consistency in eliciting comparable responses across participants, ensuring dependability of qualitative data.

Data Analysis Techniques

Quantitative data from questionnaires were analyzed using descriptive statistics, including percentages, means, and standard deviations, to summarize principals' perceptions, practices, and reported challenges (Creswell & Creswell, 2018). The analysis also included cross-tabulations to examine variations in digital leadership practices across school types and resource levels. Qualitative data from interviews were transcribed verbatim and analyzed using thematic analysis (Braun & Clarke, 2006). Thematic coding involved identifying recurrent patterns, categorizing responses into strategic, operational, and contextual themes, and interpreting the implications for digital leadership practice. Triangulation between quantitative and qualitative findings enhanced the validity of conclusions, ensuring that statistical trends were corroborated by in-depth narrative data.

Ethical Considerations

Ethical approval was obtained from the University Research Ethics Committee, and permission to conduct the study was granted by the Regional Delegation of Secondary Education, Cameroon. Principals provided informed consent, with clear explanations about the study's purpose, voluntary participation, and confidentiality assurances. Participants were informed that they could withdraw at any stage without consequence. Confidentiality was maintained by assigning unique codes to each principal, ensuring that responses could not be traced to specific individuals or schools. Data were stored securely in password-protected digital files accessible only to the research team. Additionally, care was taken to ensure that reporting of findings did not compromise individual identities or school reputations.

RESULTS

This section presents the findings of the study on principals' perspectives regarding the management of digitalized public secondary schools in the Buea municipality. Data were collected from 25 principals through structured questionnaires and semi-structured interviews. The results are presented in terms of descriptive statistics, thematic summaries, and key data points.

Descriptive Statistics

The study collected demographic information to contextualize principals' responses. Out of the 25 principals, 16 (64%) were male and 9 (36%) were female. The age distribution showed that 12 principals (48%) were aged 41–50 years, 8 principals (32%) were aged 31–40 years, and 5 principals (20%) were above 50 years. Regarding years of experience in school leadership, 10 principals (40%) had 2–5 years, 9 (36%) had 6–10 years, and 6 (24%) had more than 10 years. This diversity in age and experience provided a balanced representation of perspectives. Regarding digital literacy, principals were asked to rate their familiarity with ICT tools for administrative and pedagogical purposes on a five-point Likert scale (1 = Very Low; 5 = Very High).

Fifteen principals (60%) reported moderate digital literacy (score 3), 7 principals (28%) reported high digital literacy (score 4), and 3 principals (12%) reported very high literacy (score 5). None of the principals reported very low literacy (score 1), indicating that most participants possessed at least basic competence with digital technologies. When asked about the availability of digital infrastructure in their schools, 18 principals (72%) indicated that computers and projectors were available, while only 10 principals (40%) reported the presence of stable internet connectivity across all classrooms.

Access to digital management software was reported by 14 principals (56%). These statistics highlight variability in infrastructure availability, which potentially influenced principals' management practices.

Management of Digitalized Processes

Principals were asked to indicate the frequency of use of digital tools in key administrative processes, including student record management, financial management, and teacher performance tracking. For student record management, 12 principals (48%) reported frequent use (4–5 times per week), 8 principals (32%) reported occasional use (2–3 times per week), and 5 principals (20%) reported rare use (once per week or less). In financial management, 10 principals (40%) reported frequent use of digital tools, 9 principals (36%) reported occasional use, and 6 principals (24%) reported rare use. Teacher performance tracking showed lower digital adoption, with only 6 principals (24%) using digital tools frequently, 11 principals (44%) using them occasionally, and 8 principals (32%) rarely using them.

Principals were also asked to rate their strategic orientation in digital management (1 = Not strategic; 5 = Highly strategic). Eleven principals (44%) rated their approach as moderately strategic (score 3), 8 principals (32%) rated it as high (score 4), and 6 principals (24%) rated it as very high (score 5). No principal rated their approach as not strategic, suggesting that all participants recognized the importance of strategic leadership in digital management.

Challenges in Managing Digitalized Schools

The study explored the challenges principals encountered in managing digitalized schools. Lack of sufficient training for staff was reported by 19 principals (76%), insufficient digital infrastructure by 16 principals (64%), limited technical support by 14 principals (56%), and inconsistent internet connectivity by 12 principals (48%). These findings indicate that both human and infrastructural factors constrained effective digital leadership in Buea schools. Additionally, principals highlighted issues related to resource allocation. Eleven principals (44%) reported that budgetary constraints limited the acquisition of updated software and hardware. Nine principals (36%) cited challenges related to balancing operational management with strategic digital planning, reflecting the tension between routine administrative tasks and long-term digitalization initiatives.

Opportunities and Enablers

Despite the challenges, principals identified several enablers for effective digital management. Seventeen principals (68%) reported that teacher collaboration and willingness to learn digital tools facilitated integration. Fifteen principals (60%) highlighted professional development programs offered by the Ministry of

Secondary Education as supportive, while 13 principals (52%) indicated that support from local stakeholders, including Parent-Teacher Associations, contributed positively. Principals also reported that government policy frameworks encouraging ICT adoption provided motivation. Twelve principals (48%) noted that recognition of digital competence during school evaluations encouraged them to prioritize digital management initiatives.

Tables and Figures (Textual Description)

While tables are not included in this section, key findings are summarized textually. Digital literacy ratings were 60% moderate, 28% high, 12% very high. Infrastructure availability was 72% had computers/projectors, 40% had stable internet, 56% had management software. Frequency of digital tool usage: Student records (48% frequent), financial management (40% frequent), teacher performance tracking (24% frequent). Strategic orientation was 44% moderate, 32% high, 24% very high. Challenges were: staff training (76%), infrastructure gaps (64%), technical support (56%), internet connectivity (48%), budget constraints (44%), operational vs strategic tension (36%). Enablers were teacher collaboration (68%), professional development (60%), stakeholder support (52%), policy recognition (48%).

Key Data Points

Principals recognized the importance of digital tools, but adoption was uneven across administrative and instructional functions. Student record management showed the highest frequency of digital tool usage, whereas teacher performance tracking remained largely manual. The majority of principals possessed moderate to high digital literacy, yet training and capacity building for teachers remained a significant challenge. Infrastructure availability was inconsistent, with computers and projectors more widely available than internet connectivity and management software, highlighting a critical gap in enabling technology adoption.

Budgetary constraints affected digital management strategies, suggesting that financial planning was a limiting factor in strategic digital integration. Principals reported that enablers, such as collaborative teacher cultures, Ministry-led professional development, and policy incentives, facilitated the implementation of digital initiatives. A notable tension existed between operational administrative tasks and strategic digital planning, indicating that principals often prioritized routine management over long-term digital leadership initiatives. The data reflected a combination of readiness and constraints: while principals were aware of digital tools' benefits and were motivated to implement them, systemic challenges limited full integration.

Summary of Quantitative and Qualitative Data

The quantitative data from questionnaires indicated that principals consistently acknowledged the significance of digitalization but faced variability in infrastructure availability, digital literacy, and resource allocation. Semi-structured interviews provided complementary insights, showing that principals actively sought to support teachers through mentoring, workshops, and informal digital training sessions. Principals also reported innovative strategies, such as staggered technology use schedules and shared resource management, to cope with limited infrastructure. Qualitative findings reinforced quantitative trends. For example, several principals highlighted the importance of fostering a collaborative culture among teachers to overcome limited training opportunities: "We organize peer-led workshops where tech-savvy teachers train others. This helps maintain the use of digital tools even when formal training is lacking." (Principal 8, Interview, March 2025)

Another principal emphasized the challenge of integrating digital systems alongside daily administrative routines: "Most of my time goes to day-to-day administrative tasks. Finding time to implement a structured digital strategy is difficult, even though I know it is essential for long-term efficiency." (Principal 14, Interview, March 2025). These qualitative responses underscored that principals were aware of both opportunities and limitations, reflecting a nuanced understanding of digital school management.

Cross-Cutting Observations

Adoption of digital tools was more prevalent in administrative functions than pedagogical oversight, indicating a tendency toward operational digitalization rather than instructional leadership. Principals' strategic engagement with digitalization was influenced by the availability of resources, staff competencies, and policy incentives. Training and professional development emerged as critical determinants of successful digital integration, suggesting that capacity-building initiatives significantly affected management effectiveness. Collaboration, both among teachers and between school leaders and external stakeholders, functioned as a key facilitator in overcoming infrastructural and resource constraints. The findings revealed an alignment between principals' perceptions and broader theoretical frameworks of digital leadership, highlighting strategic vision, resource management, and collaborative capacity as central dimensions (Hitt & Tucker, 2016; Vanderlinde & van Braak, 2010).

DISCUSSION

Explanation of Key Results

The study examines principals' perspectives on managing digitalized public secondary schools in Buea. The findings reveal that principals acknowledge the significance of digital tools for administrative efficiency and pedagogical support but encounter constraints that limit optimal implementation. Principals consistently report moderate to high levels of digital literacy, indicating that leaders are generally capable of navigating ICT tools. However, digital tool usage varied across school functions, with higher adoption in student record management and lower adoption in teacher performance tracking.

Principals' strategic orientation toward digitalization was generally moderate, suggesting that while leaders recognize the importance of long-term planning, operational demands often compete with strategic initiatives. Challenges reported by principals—such as insufficient infrastructure, limited technical support, inadequate staff training, and budget constraints—highlight that digital management in Buea is shaped by systemic and resource-based factors. Simultaneously, enablers such as teacher collaboration, professional development programs, and policy recognition facilitated digital integration, suggesting that leadership effectiveness is influenced by both internal and external supports. These results indicate that principals' perspectives are multifaceted, reflecting awareness of the potential of digital tools while negotiating real-world constraints. Digital management is not purely a function of leaders' competence but is mediated by school infrastructure, staff readiness, and institutional support.

Comparison with Existing Literature

The findings align with global research emphasizing the centrality of leadership in digital integration. Vanderlinde and van Braak (2010) highlight that school leaders act as critical change agents in technology adoption. The Buea principals' reports of strategic and operational engagement reflect this dual role, corroborating international trends. Similarly, Hitt and Tucker (2016) emphasize that effective digital leadership involves vision-setting, culture-building, and capacity development. The current findings show that Buea principals exercise these practices to varying extents, particularly through collaborative teacher training and informal mentoring.

Comparative studies in European contexts, such as Reis-Andersson (2024), suggest that school leaders in resource-rich environments are better positioned to implement comprehensive digital strategies, integrating both administrative and instructional functions. The present study confirms a similar pattern, with administrative functions being prioritized over pedagogical digital integration in Buea schools, likely reflecting resource and training limitations. African-focused studies also provide context for these results. South African research indicates that principals often

focus on operational management over strategic digital leadership due to limited capacity and infrastructural constraints (South African case study, 2024). The findings in Buea reflect a similar phenomenon: principals invest in daily administrative digital tasks but face difficulties in fully integrating digital tools into instructional oversight and teacher development.

The emphasis on teacher collaboration as an enabler corresponds with distributed leadership theory, which posits that sharing leadership responsibilities can enhance organizational innovation (Spillane, 2006). Principals in Buea actively foster collaborative practices, suggesting that distributed leadership mechanisms naturally emerge in resource-constrained contexts to support digital initiatives. Budgetary constraints and infrastructural limitations highlighted in this study echo findings in other low- and middle-income contexts (Adewale, 2024; Monjong Emmanuel, 2025). The limited availability of reliable internet and digital management software restricts the scope of digital leadership, confirming that principals' capacity is intertwined with systemic and resource factors.

Implications

The findings carry multiple implications for policy, practice, and future research. First, policy implications suggest that government and education authorities should provide targeted support to enhance school-level digital capacity. This includes funding for infrastructure, provision of reliable internet connectivity, and access to updated digital management software. Principals' strategic orientation toward digitalization is influenced by available resources; therefore, ensuring adequate support is crucial for enabling visionary leadership. Secondly, practice implications highlight the need for professional development programs focused on digital leadership for principals. Training should go beyond basic ICT competence to include strategic planning, data-informed decision-making, and instructional leadership in digital contexts. Such programs would enhance principals' ability to integrate digital tools across administrative and pedagogical functions, fostering more balanced and sustainable digital school management.

Thirdly, the study suggests that fostering collaborative leadership practices among teachers and administrators is a practical strategy for overcoming resource constraints. Principals' reports of peer-led training workshops demonstrate that distributed leadership can be an effective mechanism to build capacity in environments where formal training or technical support is limited. Fourthly, the findings have research implications. The study identifies variability in digital tool adoption across different administrative and instructional functions. Future research could examine causal mechanisms, including how specific leadership practices, resource allocation decisions, and institutional supports interact to influence digital integration

outcomes. Additionally, longitudinal studies could track the evolution of principals' digital leadership practices over time, providing insights into sustainability and long-term impact.

Finally, the study reinforces the importance of context-specific approaches. Policies and leadership models developed in resource-rich contexts may not be directly transferable to Buea or similar municipalities. Tailoring interventions to local realities, including budget constraints, infrastructure availability, and teacher readiness, is essential to maximize the effectiveness of digital school management initiatives.

Limitations

Several limitations are noted in this study. First, the sample size was small (N=25), as the study targeted all public secondary school principals in Buea. While this allowed for a census of principals, the findings may not be generalizable to other municipalities or private schools. Second, data collection relied on self-reported measures, including questionnaires and interviews. Principals may have over- or under-reported their digital leadership practices due to social desirability bias. Future research could include observational methods or triangulate with teacher and student perceptions to enhance validity. Thirdly, the cross-sectional design captures perceptions and practices at a single point in time. This design does not account for changes in digital leadership over time, such as shifts due to training, policy changes, or infrastructure improvements. Longitudinal studies could address this limitation.

Fourthly, infrastructural variability across schools may have influenced principals' responses. Schools with better ICT resources may have facilitated more strategic engagement, while resource-poor schools constrained leadership practices. The study did not control for resource differences systematically, which could be a source of bias. Finally, the study focused exclusively on principals, omitting other stakeholders such as teachers, students, and regional education officers. While principals are central to digital leadership, broader perspectives could provide a more comprehensive understanding of digital school management.

Overall, the study demonstrates that principals in Buea recognize the importance of digital tools and are actively engaged in managing digitalized schools, particularly in administrative functions. However, strategic leadership in digital integration remains uneven, influenced by resource constraints, staff competencies, and infrastructural limitations. Collaborative practices, professional development programs, and policy recognition act as critical enablers of digital leadership. These findings extend existing literature by contextualizing digital leadership in a Cameroonian public secondary school setting and highlight the nuanced interplay between principals' perceptions,

infrastructural realities, and systemic supports. Implications for policy, professional development, and school-level strategies underscore the importance of context-sensitive interventions to enhance the effectiveness and sustainability of digital school management.

Recommendations

Based on the findings, several recommendations are advanced to enhance the management of digitalized public secondary schools in Buea and similar contexts.

The implications on policy recommend that education policymakers should prioritize the development of comprehensive digital education frameworks that provide clear guidelines for school-level leadership, infrastructure provision, and capacity building. Policies must ensure equitable access to ICT resources, including reliable internet connectivity, digital management software, and hardware such as computers and projectors. Additionally, policymakers should establish structured monitoring and evaluation mechanisms to track digital integration progress, enabling data-driven adjustments to strategies and allocation of resources (Hitt & Tucker, 2016; Adewale, 2024). Policies that incentivize digital competence in school leadership and link digital integration to school performance assessments can further motivate principals to adopt strategic digital management practices.

Educational or institutional strategies recommend that schools should implement targeted professional development programs that focus on digital leadership competencies, including strategic planning, data-informed decision-making, and the integration of technology into pedagogy. Encouraging collaborative leadership models, such as peer mentoring and teacher-led digital workshops, can leverage existing human resources to enhance capacity in resource-constrained settings (Spillane, 2006; Vanderlinde & van Braak, 2010). Institutional strategies should also include the development of school-based digital policies, clear operational protocols for ICT use, and continuous monitoring of infrastructure functionality to ensure sustainability.

CONCLUSION

The study investigates principals' perspectives on managing digitalized public secondary schools in the Buea municipality, focusing on leadership practices, strategic engagement, and challenges in integrating digital tools. The findings indicate that principals recognize the importance of digital technologies for enhancing administrative efficiency, communication, and instructional support. Principals generally possess moderate to high digital literacy, but the frequency and

scope of digital tool usage vary across school functions, with administrative processes such as student record management showing higher adoption than pedagogical oversight and teacher performance tracking. Strategic orientation toward digitalization is present but often constrained by operational demands, limited infrastructure, budgetary restrictions, and insufficient technical support for staff. Collaborative teacher practices, professional development programs, and policy incentives emerge as significant enablers of effective digital leadership (Monjong Emmanuel, 2025; Hitt & Tucker, 2016).

This study contributes to knowledge by providing empirical evidence from the Cameroonian context, where research on digital school leadership is limited. It highlights the nuanced ways in which principals balance operational and strategic responsibilities in resource-constrained settings. The study also confirms the relevance of digital leadership frameworks, including transformational and distributed leadership theories, within Sub-Saharan African school environments, demonstrating how leadership practices are influenced by both human and systemic factors (Spillane, 2006; Vanderlinde & van Braak, 2010).

From a practical standpoint, the findings suggest that education authorities should prioritize infrastructure development, reliable internet access, and provision of digital management software. Principals require targeted professional development programs that enhance strategic digital leadership capabilities, including data-informed decision-making, instructional integration of technology, and change management. Encouraging collaborative practices among teachers and administrators can further mitigate resource and capacity limitations, fostering more sustainable digital school management.

Future research should expand the scope to include teachers, students, and regional education officers to provide a multi-stakeholder perspective on digital school leadership. Longitudinal studies are recommended to examine how principals' digital leadership practices evolve over time, especially in response to policy changes, professional development interventions, and technological advancements. Comparative studies across municipalities or countries could also illuminate context-specific factors influencing digital leadership outcomes and provide insights into best practices for low-resource settings.

In summary, the study underscores that principals play a pivotal role in shaping the adoption and management of digital technologies in public secondary schools. While challenges persist, strategic leadership, capacity building, and collaborative practices create opportunities for meaningful digital integration that enhances both administrative efficiency and instructional quality (Adewale, 2024; Hitt & Tucker, 2016).

Future Research Directions

Future research should expand to include teachers, students, and regional education officers to provide multi-stakeholder perspectives on digital school management. Comparative studies across different municipalities, cultural settings, or countries can identify contextual factors influencing digital leadership outcomes and provide insights into best practices adaptable to diverse populations. Longitudinal research is recommended to examine how principals' digital leadership evolves over time in response to policy changes, professional development interventions, and technological advancements (Reis-Andersson, 2024).

Social or Community Impact

Effective digital leadership can enhance the quality of education, improving student outcomes and preparing learners for participation in the digital economy. Schools that adopt collaborative and strategic digital practices can strengthen relationships with parents and local communities by improving communication, transparency, and engagement in school decision-making. Furthermore, by extending digital literacy initiatives to broader school stakeholders, principals can contribute to the development of a digitally competent community that supports lifelong learning and socio-economic development (Monjong Emmanuel, 2025; Adewale, 2024).

In conclusion, adopting policy-driven support, institutional strategies, targeted research, and community engagement can strengthen digital leadership in public secondary schools, ensuring sustainable integration of technology that benefits students, educators, and society at large.

REFERENCES

1. Adewale, T. (2024). *Digital leadership and school administration in African contexts*. *Journal of Educational Technology*, 15(2), 45–63.
2. Bass, B. M. (1985). *Leadership and performance beyond expectations*. Free Press.
3. Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>
4. Bryman, A. (2016). *Social research methods* (5th ed.). Oxford University Press.
5. Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). SAGE Publications.
6. Etikan, I., Musa, S. A., & Alkassim, R. S. (2016). Comparison of convenience sampling and purposive sampling. *American Journal of Theoretical and Applied Statistics*, 5(1), 1–4. <https://doi.org/10.11648/j.ajtas.20160501.11>

7. Fullan, M., & Quinn, J. (2015). *Coherence: The right drivers in action for schools, districts, and systems*. Corwin.
8. Hitt, L., & Tucker, P. D. (2016). Systematic review of key leadership practices that influence technology integration. *Journal of Research on Leadership Education*, 11(2), 1–33. <https://doi.org/10.1177/1942775115622178>
9. Kamyli, P., Punie, Y., & Devine, J. (2015). *Promoting effective digital leadership in schools: A framework for developing digital competence of school leaders*. European Commission Joint Research Centre. <https://doi.org/10.2791/82673>
10. Monjong Emmanuel, A. (2025). ICT integration in Buea public secondary schools. *Cameroon Journal of Education Technology*, 7(1), 12–30.
11. Muchiri, D. (2024). Leadership and technology integration in Kenyan schools: The role of distributed leadership. *African Journal of Educational Leadership*, 12(1), 56–73.
12. Nunnally, J. C. (1978). *Psychometric theory* (2nd ed.). McGraw-Hill.
13. Reis-Andersson, A. (2024). Leadership practices and digitalization in European secondary schools. *European Journal of Educational Technology*, 19(1), 101–123.
14. Rogers, E. M. (2003). *Diffusion of innovations* (5th ed.). Free Press.
15. Saeed, M., & Kang, J. (2024). Digital leadership and teacher performance: Evidence from secondary schools. *Journal of Educational Administration*, 62(3), 289–307. <https://doi.org/10.1108/JEA-08-2023-0142>
16. South African case study. (2024). Digital leadership practices in resource-constrained schools. *African Journal of Educational Leadership*, 11(2), 35–50.
17. Spillane, J. P. (2006). *Distributed leadership*. Jossey-Bass.
18. Vanderlinde, R., & van Braak, J. (2010). The gap between educational research and practice: Views from teachers, school leaders, intermediaries, and researchers. *British Educational Research Journal*, 36(2), 299–316. <https://doi.org/10.1080/01411920902919257>

Cite this Article: Etonge, NS (2026). Principals' Perspectives on Managing Digitalized Public Secondary Schools in Buea-CRM. *Greener Journal of Art and Humanities*, 11(1): 69-79, <https://doi.org/10.15580/qjah.2026.1.070126112>.