

KEMI Journal of Educational Leadership and Management

KJELM

[ISSN 3079-4048]

Volume: 2 Issue: 3 | Nov-2026

Digital transformation as a correlate of effective educational leadership in public secondary schools in Lagos State, Nigeria

Philip O. Omiyale[1], **Charity Ebunoluwa Oni**[2], **Oluwasola Bamidele**[3], **David Topohozin**[4]

Lagos State University of Education, Oto-Ijanikin[1], *Department of Educational Management, University of Ibadan*[2], *Federal College of Education, Ilawe, Ekiti State, Nigeria*[3], *Lagos State University of Education, Oto-Ijanikin*[4]

Corresponding Author Email: omiyaleop@lasued.edu.ng

Cite this article in APA

https://doi.org/10.68147/52c91497

Copyright: ©2026 by the author(s). Open access under CC BY.

Abstract

This study examined digital transformation as a correlate of effective educational leadership in public secondary schools in Lagos State, Nigeria. Using a correlational research design, the study assessed the extent of digital transformation, evaluated leadership effectiveness, and tested their relationship. The target population comprised 7,132 principals and teachers. Through a multi-stage sampling procedure combining purposive, stratified random, total enumeration, and simple random sampling 1,480 respondents (24 principals and 1,456 teachers) were selected across 24 schools in four Education Districts. Data were collected using the validated Digital Transformation and Effective Educational Leadership Questionnaire (DTEELQ), which achieved an overall Cronbach's alpha reliability coefficient of 0.89. Out of 1,480 distributed questionnaires, 1,468 usable responses were retrieved (99.19% usable rate). Data were analyzed using mean and standard deviation for research questions and Pearson's Product-Moment Correlation Coefficient to test the hypothesis at a .05 level of significance. Findings revealed a high overall extent of digital transformation (Grand Mean) = 2.76, SD = 0.91 and high effective educational leadership {Grand Mean} = 2.92, SD = 0.72. A statistically significant positive relationship was found between digital transformation and effective educational leadership ($r = .620$, $p < .001$), leading to the rejection of the null hypothesis. The study concluded that digital transformation is positively associated with leadership effectiveness, though this statistical association does not imply direct causation. Recommendations include improving digital

infrastructure, conducting continuous leadership training, establishing clear data governance, and regularly monitoring system implementation.

Key terms: Digital Transformation, Effective Educational Leadership, School Administration, Public Secondary Schools, Lagos State.

Introduction

Background to the study

Educational leadership is central to the organisation, coordination and continuous improvement of schools. Principals and other school leaders are expected to establish clear institutional goals, coordinate personnel and resources, supervise teaching and learning, maintain records, support teachers, monitor students' progress and ensure that school activities comply with educational policies. Effective educational leadership therefore extends beyond the performance of routine administrative duties; it involves using available human, financial, material and informational resources to create conditions that support teaching quality, organisational improvement and student learning.

Contemporary educational institutions operate in an environment increasingly shaped by digital technologies. Electronic communication platforms, digital record-management systems, online reporting tools, learning-management systems, data dashboards and virtual professional-development platforms have created new opportunities for school leaders to coordinate activities and access information. Digital technologies can reduce delays in communication, improve the accessibility of school records, support the monitoring of instructional activities and facilitate evidence-informed decision-making. Nevertheless, the availability of technology does not automatically produce effective leadership. Its contribution depends on how it is selected, integrated into organisational processes and used to address identifiable educational needs.

Vial (2019) conceptualised digital transformation as a process in which digital technologies trigger significant changes in organisational characteristics and value-creation processes. Verhoef et al. (2021) similarly explained that digital transformation involves changes in organisational strategy, structure, processes and capabilities rather than the simple adoption of digital tools. Applied to school administration, this distinction means that digital transformation should not be measured solely by whether a school owns computers or has internet access. It should also be considered in relation to how digital resources are incorporated into planning, communication, supervision, information management and administrative decision-making.

International evidence indicates that technology can support educational access and management, but its benefits depend on context, purpose and implementation. The United Nations Educational, Scientific and Cultural Organization (UNESCO, 2023) cautioned that evidence concerning the educational value of technology remains uneven and that technology should be evaluated according to whether it responds to educational needs. The report also highlighted persistent inequalities in connectivity, digital skills, data protection and the sustainability of technology investments. These concerns are relevant to school leadership because digital systems can strengthen administrative processes only when leaders have the infrastructure, competence and organisational support needed to use them effectively.

Digital transformation also changes the nature of school leadership. School leaders are increasingly required to communicate through digital channels, use electronic information to monitor school activities, support teachers' technology integration and establish procedures for managing digital resources. Dexter and Richardson (2020), in a systematic review of research on technology integration in primary and secondary education, identified leadership practices as an important component of efforts to support

teachers' integration of technology. Their review underscores the importance of leadership practices that connect technology with teaching and learning rather than treating technology as an isolated technical responsibility.

In Nigeria, public secondary schools operate within varied conditions relating to infrastructure, funding, personnel capacity and access to digital resources. These conditions make it necessary to examine digital transformation in relation to the actual work of school leaders. In Lagos State, where public secondary schools operate across different communities and administrative districts, digital systems may support school monitoring, information sharing, record management, communication and planning. However, differences in access to reliable electricity, internet connectivity, functional equipment, technical support and digital competence may influence how consistently these systems are used.

Local studies provide a useful basis for investigating this issue. Abari et al. (2024) examined digitised record-keeping practices and administrative effectiveness among public senior secondary school administrators in Lagos State. They reported a positive relationship between digitised record keeping and administrative effectiveness ($r = .568$, $p < .001$), while the mean score for digitised record-keeping practices was 2.48. This finding suggests that digital information-management practices may be relevant to administrative effectiveness, although record keeping represents only one aspect of the broader concept of digital transformation.

A more recent study by Adeyanju et al. (2026) examined digital management practices, including electronic supervision, electronic marking and electronic communication, in public senior secondary schools in Lagos State. The authors reported significant positive relationships between these practices and administrative effectiveness. This evidence further indicates the relevance of digital processes to school administration, while also showing the need to distinguish between specific digital practices and the broader organisational changes encompassed by digital transformation.

Despite the relevance of these studies, digital transformation and effective educational leadership remain concepts that require careful definition and measurement. Digitised record keeping, electronic communication and technology-supported supervision are related to digital transformation, but they do not necessarily capture all its dimensions. Similarly, administrative effectiveness and effective educational leadership overlap but are not identical. Administrative effectiveness concerns the achievement of administrative responsibilities, whereas educational leadership also includes setting direction, supporting teaching, building staff capacity, coordinating improvement and maintaining a shared focus on educational goals.

The present study therefore focuses on the relationship between digital transformation and effective educational leadership in public secondary schools in Lagos State. It treats digital transformation as the principal explanatory variable and effective educational leadership as the outcome variable of interest. By examining these variables within the same study, the research seeks to provide context-specific evidence that can inform school improvement, leadership development and the responsible adoption of digital systems.

Statement of the Problem

Effective leadership in the educational system is crucial for managing school resources, overseeing instructional activities, ensuring the reliability of information, and achieving institutional goals. However, these responsibilities have become increasingly complex, requiring school leaders to process vast amounts of data, communicate rapidly, manage administrative tasks, and respond promptly to emerging needs. Traditional, paper-based management methods often cause delays, lead to redundant record-keeping, hinder timely

access to data, and impede effective school administration. While transitioning to digital technology can offer solutions to these operational challenges, the true value of such digital systems depends on how well they are integrated into administrative and leadership practices.

The core issue is not merely whether public secondary schools possess digital resources or rely exclusively on electronic communication methods; rather, the fundamental question is whether the transition to a digital system effectively supports school leaders in fulfilling their professional responsibilities. Schools might adopt digital tools without updating existing administrative protocols, improving data accuracy, or strengthening the oversight and management of the teaching and learning process. In such scenarios, technology merely inflates operational costs and complicates administration, without delivering any tangible benefits to the school. As UNESCO (2023) cautions, the role of technology in education must be evaluated based on its alignment with educational objectives and its capacity to produce demonstrable outcomes, rather than assuming it is inherently beneficial.

Evidence gathered from Lagos State has begun to shed light on certain aspects of this issue. For example, Abari and his colleagues (2024) observed a strong positive relationship between digital record-keeping and administrative effectiveness among principals of public secondary schools. However, digital record-keeping is merely a small component of the transition to a digital system, and administrative effectiveness is likewise only a small part of the broader concept of educational management. Therefore, insights derived from a single digital-related practice cannot be used to draw general conclusions about how the transition to a digital system as a process encompassing the entire school organization relates to overall administrative effectiveness in education.

Therefore, the problem this study seeks to address is the lack of definitive evidence regarding the relationship between digital transformation and effective management in public secondary schools in Lagos State.

By examining the extent to which both phenomena are present and assessing whether the connection between them is significant or exerts a strong influence this study aims to provide insights that will facilitate informed decision-making and the development of robust, well-structured strategies. This includes investment in digital tools, the enhancement of school leaders' capabilities, and the integration of technology into school management systems. In exploring the links between these factors, the study examines these relationships without assuming that the transition to a numerical grading system is the direct cause of the performance or achievements of school leaders.

Objective of the Study

General Objective

To examine digital transformation as a correlate of effective educational leadership in public secondary schools in Lagos State, Nigeria.

Specific Objectives

examine the level of digital transformation in public secondary schools in Lagos State;

assess the level of effective educational leadership in public secondary schools in Lagos State; and

determine the relationship between digital transformation and effective educational leadership in public secondary schools in Lagos State.

Research Questions

The following research questions guided the study:

What is the level of digital transformation in public secondary schools in Lagos State?

What is the level of effective educational leadership in public secondary schools in Lagos State?

What relationship exists between digital transformation and effective educational leadership in public secondary schools in Lagos State?

Hypothesis

The following null hypothesis was tested at the .05 level of significance:

H_{01}: There is no significant relationship between digital transformation and effective educational leadership in public secondary schools in Lagos State.

Significance

The findings may be useful to education policymakers, school administrators, teachers, education district officials and researchers. For policymakers, the study may provide evidence relevant to decisions about school connectivity, digital infrastructure, technical support and leadership development. For principals, it may draw attention to the importance of integrating digital systems into planning, communication, record management and instructional supervision. For teachers, it may highlight the role of leadership in creating supportive conditions for the appropriate use of technology in school activities.

The study may also contribute to research on educational management by examining digital transformation alongside a broader leadership outcome rather than limiting analysis to one administrative practice. Its contribution should be understood in relation to the study's actual design and evidence: a cross-sectional correlational study can establish the direction and strength of association in the observed sample, but it cannot independently demonstrate causality.

Scope

The study focused on digital transformation and effective educational leadership in public secondary schools in Lagos State, Nigeria. The reported sample comprised 1,480 respondents 24 principals and 1,456 teachers from 24 schools in four selected Education Districts: I, II, IV and V. Digital transformation was the principal independent variable, while effective educational leadership was the dependent variable. The study used questionnaire data and quantitative analyses to describe the variables and examine their relationship. The scope was limited to the participating public secondary schools.

Literature Review

Concept of digital transformation

Digital transformation refers to the organisational process through which digital technologies are integrated into activities, structures and decision-making in ways that change how an institution operates and delivers value. Vial (2019) described digital transformation as a process in which digital technologies generate disruptions that prompt strategic responses and changes to organisational structures, processes and value-creation mechanisms. Verhoef et'al. (2021) similarly distinguished digital transformation from narrower forms of digitisation and digitalisation, emphasising its broader implications for organisational

strategy and operations.

In educational institutions, three related concepts should be distinguished. Digitisation involves converting information from analogue or paper formats into digital formats, such as scanning paper student records. Digitalisation involves using digital technologies to improve existing processes, such as using a spreadsheet or school-management system to update attendance records. Digital transformation goes further by changing how an institution organises and coordinates its activities for example, connecting student records, attendance monitoring, staff communication, instructional supervision and school planning within an integrated information system.

This distinction is important because a school may use computers and electronic messaging without substantially transforming its administrative practices. Genuine transformation requires the purposeful integration of technology into organisational routines, supported by appropriate leadership, staff competence, infrastructure and governance. It also requires consideration of whether the technology is useful, accessible, sustainable and consistent with educational goals.

For this study, digital transformation is conceptualised as the extent to which digital technologies are integrated into the planning, communication, information management, instructional monitoring and decision-making processes of public secondary schools. This operational definition is broad enough to capture organisational practices while remaining relevant to the work of school leaders.

Dimensions of digital transformation in school administration

Digital infrastructure and access to infrastructure includes functional computers and other devices, dependable electricity, internet connectivity, appropriate software and technical support. These are enabling conditions rather than proof of transformation in themselves. UNESCO (2023) noted that access to digital technologies remains unequal and that technology investments must be assessed in relation to educational purposes and the context in which they are used.

Digital communication. School leaders communicate with teachers, education officials, parents and other relevant parties through electronic mail, approved messaging systems, online meetings and digital reporting platforms. Effective digital communication can improve the speed and traceability of information exchange. Its value, however, depends on the accuracy of messages, the suitability of the platform, access for intended users and appropriate rules concerning confidentiality.

Digital record and information management are digital systems that support the storage, retrieval, updating and analysis of student attendance, staff records, assessment results, inventories and administrative reports. Abari et’al. (2024) found a significant positive relationship between digitised record-keeping practices and administrative effectiveness among public senior secondary school administrators in Lagos State. Their findings provide local evidence for the relevance of digital information management, although this dimension should not be treated as equivalent to digital transformation as a whole.

Technology-supported instructional supervision can also be seen as digital tools which help leaders organise supervision schedules, communicate feedback, monitor lesson documentation and coordinate professional support for teachers. Dexter and Richardson (2020) found that leadership practices are an important theme in research on technology integration in schools. Their review suggests that leaders should connect technology use to instructional objectives and teacher support rather than focus exclusively on equipment acquisition.

School leaders can therefore use organised digital data to identify attendance patterns, review academic performance, monitor resource use and plan interventions. Nevertheless, data-informed decisions depend

on the quality, completeness and timeliness of information. Poorly maintained digital records can reproduce or intensify existing errors. Digital decision-making must therefore be supported by data validation, professional judgement and clear accountability procedures.

Digital transformation requires leaders and staff to possess the skills and confidence to use relevant systems. It also requires time for professional learning, clear responsibilities, adequate technical assistance and an organisational culture that supports appropriate innovation. Without these conditions, technology adoption may remain superficial or uneven.

Concept of effective educational leadership

Effective educational leadership refers to the purposeful exercise of leadership practices that help a school achieve its educational and organisational objectives. It encompasses the capacity to establish direction, coordinate school operations, support teaching and learning, manage resources, develop staff, monitor progress and maintain an environment conducive to learning. Educational leadership is therefore broader than the routine completion of administrative tasks.

Bush (2020) explained educational leadership and management through different models and perspectives, highlighting the importance of understanding how leadership operates within the organisational and institutional context. Effective leadership should not be assessed solely by personal characteristics or the use of particular tools. It should be examined through the practices and outcomes relevant to the school's educational purposes.

For this study, effective educational leadership is conceptualised as the extent to which school leaders demonstrate effective planning and coordination, timely and informed decision-making, instructional supervision, communication, management of school resources, monitoring of school activities and support for teaching and learning. These indicators reflect responsibilities that digital technologies may support, but they do not imply that technology alone determines leadership effectiveness.

A school leader may use digital platforms frequently yet remain ineffective if decisions are poorly judged, staff are inadequately supported or instructional priorities are neglected. Conversely, a leader may perform some responsibilities effectively with limited technology. The relationship between digital transformation and leadership effectiveness is therefore an empirical question rather than an assumption.

Relationship between digital transformation and effective educational leadership

Digital transformation may be associated with effective educational leadership through several organisational mechanisms. First, timely digital communication can help leaders distribute instructions, coordinate responsibilities and maintain communication records. Second, digital information systems may make school records more accessible and support the monitoring of attendance, assessment and resource use. Third, technology-supported supervision may help leaders organise observations and feedback. Fourth, digital reports may support planning and decisions based on systematically collected information.

These potential benefits are conditional. Digital systems can also create additional work, introduce cybersecurity risks, exclude staff who lack access or competence, and generate inaccurate conclusions when data are incomplete. UNESCO (2023) accordingly emphasised that technology should be selected and evaluated according to educational relevance, equity, sustainability and the protection of users' rights.

The empirical evidence from Lagos State is relevant but requires careful interpretation. Abari et al. (2024) reported a positive correlation of .568 between digitised record-keeping practices and administrative

effectiveness. Adeyanju et'al. (2026) also reported significant positive relationships between digital management practices including electronic supervision, marking and communication and administrative effectiveness in public senior secondary schools. These studies support the plausibility of an association between digital practices and administrative effectiveness. However, neither finding should automatically be interpreted as proof that all aspects of digital transformation improve every dimension of educational leadership.

International research similarly identifies the importance of leadership in technology integration. Dexter and Richardson (2020) synthesised empirical research on school leaders, teachers and technology and highlighted leadership practices that support teachers' integration efforts. Their work reinforces the view that technology use should be connected to school goals and professional practice.

The present study extends this line of inquiry by examining digital transformation in relation to effective educational leadership as a broader construct in selected public secondary schools in Lagos State. Its focus is on determining whether respondents' ratings of the two variables are significantly related.

Theoretical framework

Socio-technical systems perspective

The socio-technical systems perspective provides a useful lens for understanding digital transformation in schools. The central idea is that organisational performance depends on the interaction between social arrangements such as people, skills, roles, relationships and organisational culture and technical arrangements, including equipment, software, information systems and work processes.

Applied to school administration, this perspective suggests that digital technologies cannot be considered independently of the people and practices through which they are used. A school may acquire a digital platform, but the platform is unlikely to support leadership effectively if staff have insufficient training, responsibilities are unclear, data are unreliable or the technology does not fit administrative needs. The perspective is relevant to the present study because it treats digital transformation as an organisational process rather than the mere possession of digital devices. It helps explain why schools with similar equipment may differ in their use of technology for communication, record management, planning and supervision.

Accordingly, the study assumes that digital transformation may be associated with effective educational leadership when technological systems are appropriately integrated with leadership practices and organisational needs. This is a theoretical expectation to be examined empirically, not a causal conclusion established in advance.

Distributed leadership perspective

Distributed leadership offers a complementary explanation of how leadership practices are enacted through interactions among people, routines and organisational resources. Spillane (2006) argued that leadership practice is distributed across leaders, followers and the situations in which they work. In schools, leadership responsibilities are therefore not exercised by the principal alone; they may also involve vice-principals, heads of department, teachers and administrative personnel.

Digital transformation may support distributed leadership by making information more accessible, facilitating coordination and enabling staff to participate in shared administrative processes. For example, a digital reporting platform can help a principal, heads of department and teachers review relevant information and coordinate responses to instructional or administrative issues. The effectiveness of such arrangements depends on how responsibilities and access are organised.

The distributed leadership perspective is relevant because digital systems often connect people and activities across the school. It provides a way to interpret how technology may support leadership practices without assuming that technology itself is the leader or the sole source of organisational improvement.

Taken together, the socio-technical systems perspective and distributed leadership provide complementary insights. The first highlights the interaction between technology and organisational conditions; the second highlights the distribution of leadership practice among people and routines. Both support the investigation of digital transformation as a correlate of effective educational leadership.

Conceptual framework

The conceptual framework for the study, Digital Transformation as a Correlate of Effective Educational Leadership in Public Secondary Schools in Lagos State, explains the expected relationship between the independent variable, digital transformation, and the dependent variable, effective educational leadership.

The framework proposes that the adoption and use of digital technologies in school administration may be associated with the effectiveness of principals' leadership practices. Digital transformation may support timely communication, efficient record management, evidence-informed decision-making, administrative planning and instructional supervision. These processes may, in turn, be associated with more effective educational leadership.

Independent variable: Digital transformation

Digital transformation is the independent variable in this study as it refers to the integration and use of digital technologies to improve administrative processes, information management, communication and decision-making in public secondary schools. For the purpose of this study, digital transformation is conceptualised through the following dimensions:

Digital infrastructure and access: Availability and accessibility of computers, internet connectivity, digital devices and relevant software for school administration.

Digital communication: Use of digital platforms to communicate among principals, teachers, parents, educational authorities and other school stakeholders.

Digital record management: Application of digital systems to maintain and retrieve students' records, staff information, attendance, examination results and administrative documents.

Technology-supported supervision: Use of digital tools to monitor teaching activities, track school operations and provide feedback to teachers.

Digital planning and decision-making: Use of digital information and technology-supported reports to support school planning, resource allocation and administrative decisions.

These dimensions provide a basis for examining the extent to which digital technologies are incorporated into school management practices.

Dependent variable: Effective educational leadership

Effective educational leadership is the dependent variable. It refers to the capacity of school leaders, particularly principals, to coordinate school activities, guide teaching and learning, manage resources and support the achievement of school objectives. In this study, effective educational leadership is examined through the following dimensions:

School planning and coordination: Setting school objectives, organising activities and coordinating staff responsibilities.

Decision-making: Making timely, appropriate and evidence-informed decisions concerning school administration and teaching and learning.

Instructional supervision: Monitoring teaching practices, providing professional guidance and supporting teachers' instructional performance.

Resource management: Managing human, material, financial and informational resources efficiently.

Monitoring and support for teaching and learning: Tracking educational activities, identifying implementation challenges and supporting improvements in teaching and students' learning.

These dimensions provide the basis for assessing respondents' perceptions of leadership effectiveness in the sampled public secondary schools.

Relationship between the variables

The framework assumes that digital transformation may be positively associated with effective educational leadership. For example, digital communication may facilitate the timely exchange of information, while digital record management may improve access to administrative records. Similarly, technology-supported supervision and data-informed planning may assist principals in monitoring school activities and making decisions.

However, the strength of this relationship may depend on contextual factors such as the availability of funding, the reliability of digital infrastructure, principals' technological competence, teachers' digital skills and institutional support. These factors may influence how effectively digital technologies are integrated into school management. Because the study adopts a correlational approach, the framework does not assume that digital transformation necessarily causes effective educational leadership. Rather, it proposes that the two variables may be systematically related.

Empirical review

Abari et’al. (2024) investigated digitised record-keeping practices and administrative effectiveness among public senior secondary school administrators in Lagos State. The study used a descriptive survey design and sampled 101 principals, vice-principals and Education Management Information System officers from a population of 327 public senior secondary schools. The researchers reported that digitised record keeping was practised at an average level (weighted mean = 2.48), while administrative effectiveness received a weighted mean of 3.29. The relationship between digitised record keeping and administrative effectiveness was positive and statistically significant ($r = .568$, $p < .001$). This study is directly relevant because it was conducted in Lagos State and examined a digital administrative practice associated with leadership-related effectiveness. However, its focus was restricted to record keeping rather than the broader construct of digital transformation.

Adeyanju et’al. (2026) examined digital management practices and administrative effectiveness in public senior secondary schools in Lagos State. Their study involved 70 schools and 3,150 teachers, with principals in the selected schools also included through purposive selection. The researchers used a questionnaire with a reported reliability coefficient of .78 and tested relationships involving electronic supervision, electronic marking and electronic communication using Pearson correlation. They reported statistically significant positive relationships between the digital management practices and administrative effectiveness. The study provides further local evidence of the relevance of digital processes to school administration. Nevertheless, its focus on three specific practices differs from the

broader organisational concept examined in the present study.

Dexter and Richardson (2020) conducted a systematic review of empirical research published between 1998 and 2018 concerning the intersection of school leaders, teachers and technology in primary and secondary education.

UNESCO's (2023) Global Education Monitoring Report reviewed the opportunities and limitations associated with technology in education. It highlighted the potential of technology to expand access and support educational processes while drawing attention to inequitable access, insufficient evidence, data privacy and the risks of investing in technologies without clear educational purposes. Although the report is not a single correlational study of school leadership, it provides an important policy context for interpreting digital transformation as a process that requires purposeful planning and evaluation.

Methodology

Design

The study adopted a correlational research design. A correlational design is appropriate when a researcher seeks to determine the direction and strength of the relationship between two or more measured variables without manipulating them. In this study, digital transformation was examined in relation to effective educational leadership as they occurred in the participating public secondary schools. The design was appropriate because the objective was to establish whether respondents' ratings of digital transformation were significantly associated with their ratings of effective educational leadership. The study did not assign schools to experimental conditions or manipulate their access to digital technologies. Therefore, the findings can establish statistical association but cannot independently establish that digital transformation causes effective educational leadership.

Population

The study population comprised principals and teachers in public secondary schools in Lagos State, Nigeria, a total of 7,132, comprising 7,108 teachers and 24 principals.

Sample and sampling procedure

The study adopted a multistage sampling procedure involving purposive sampling, stratified random sampling, total enumeration and simple random sampling. These techniques were applied at different stages to facilitate the selection of Education Districts, public secondary schools, principals and teachers for the study. At the first stage, four Education Districts, namely Districts I, II, IV and V, were purposively selected from the six Education Districts in Lagos State. The selection was guided by the geographical coverage and scope of the study. At the second stage, public secondary schools within each of the four selected Education Districts were stratified according to their geographical locations. Six public secondary schools were subsequently selected from each district through stratified random sampling, resulting in a total of 24 sampled public secondary schools. This procedure was intended to promote geographical representation among the selected schools. At the third stage, the principals of all 24 sampled schools were included through total enumeration, resulting in 24 principals. At the fourth stage, teachers were selected from the sampled schools through simple random sampling, using the available lists of eligible teachers as sampling. A total of 1,456 teachers were selected across the 24 schools. Consequently, the final sample comprised 1,480 respondents, consisting of 24 principals and 1,456 teachers. The respondents were distributed across the four selected Education Districts, with each district contributing 370 respondents, comprising six principals and 364 teachers. This allocation produced an overall sample of 1,480 respondents for the study.

Instrumentation

Data were collected using a researcher-structured questionnaire titled Digital Transformation and Effective Educational Leadership Questionnaire (DTEELQ). The instrument was designed to measure digital transformation and effective educational leadership in public secondary schools in Lagos State. The questionnaire comprised three sections: Section A elicited demographic information from respondents; Section B measured digital transformation; and Section C measured effective educational leadership. The two substantive sections contained 20 items, comprising 10 items on digital transformation and 10 items on effective educational leadership, subject to confirmation against the original questionnaire. The instrument adopted a four-point Likert response format: Strongly Agree (SA) = 4, Agree (A) = 3, Disagree (D) = 2, and Strongly Disagree (SD) = 1. The format was adopted to eliminate a neutral midpoint and require respondents to indicate their level of agreement or disagreement with each statement. The digital transformation scale measured the integration and application of digital technologies in school administration, particularly digital infrastructure and access, communication, record management, technology-supported supervision, planning, information use, decision-making and other administrative processes while the effective educational leadership scale measured leadership practices relating to planning and coordination, decision-making, instructional supervision, resource management, monitoring and support for teaching and learning.

Validity

The research instrument was subjected to face and content validation by experts in Educational Management and Test and Measurement. The experts examined the instrument in terms of clarity, relevance, adequacy, appropriateness of language, and coverage of the constructs being measured. Their observations, corrections, and recommendations were incorporated into the final version of the questionnaire to ensure that the items adequately addressed digital transformation and effective educational leadership in public secondary schools in Lagos State.

Reliability

A pilot test was conducted using 30 respondents who possessed characteristics similar to those of the study population but were not included in the main study. The data obtained from the pilot test were analysed using Cronbach's alpha coefficient to determine the internal consistency of the research instrument. The reliability analysis was conducted separately for the two major constructs measured by the instrument, namely digital transformation and effective educational leadership.

The reliability analysis yielded Cronbach's alpha coefficients of 0.84 for digital transformation and 0.86 for effective educational leadership. When all 20 items measuring the two constructs were analysed together, the overall Cronbach's alpha coefficient was 0.89. These coefficients indicate good internal consistency of the respective scales and the overall instrument, based on the commonly adopted criterion of 0.70 and above for acceptable reliability. The results suggest that the questionnaire demonstrated satisfactory internal consistency and was suitable for use in the main study. The 30 respondents who participated in the pilot test were excluded from the main study to prevent duplication of participants.

Data Collection

Data for the study were collected from principals and teachers in the 24 sampled public secondary schools across Education Districts I, II, IV and V in Lagos State. Before the administration of the instrument, the researcher sought the necessary permission from the relevant educational authorities

and the management of the selected schools. The purpose of the study was explained to the respondents, and they were assured that their participation was voluntary and the confidentiality of their responses was also assured.

The questionnaires were administered to the selected principals and teachers in the sampled schools. The principals of the 24 selected schools were included in the study, while the teachers were selected through simple random sampling, as specified in the sampling procedure. The researcher and 2 research assistants coordinated the distribution and retrieval of the questionnaires to facilitate participation and minimise the loss of completed instruments. The completed questionnaires were screened for completeness and consistency before being coded for analysis. Only questionnaires containing usable responses were included in the final dataset.

Data Analysis

Descriptive statistics, including frequency counts, percentages, mean and standard deviations, were used to analyse respondents' demographic characteristics and describe their responses on digital transformation and effective educational leadership. These statistics provided an overview of the extent to which digital technologies were used in school administration and the perceived effectiveness of educational leadership in the sampled public secondary schools.

The research questions were answered using descriptive statistical methods appropriate to their wording and measurement. Where the questions sought to determine the level or extent of digital transformation and effective educational leadership, mean scores and standard deviations were used to summarise respondents' ratings. Frequency counts and percentages were used to present demographic information and other categorical responses.

The research hypothesis, which examined the relationship between digital transformation and effective educational leadership, was tested using Pearson's Product-Moment Correlation Coefficient (PPMCC). This technique was considered appropriate for determining the direction and strength of the linear relationship between the composite scores for digital transformation and effective educational leadership.

Results

This results for the study on digital transformation as a correlate of effective educational leadership in public secondary schools in Lagos State are organised into questionnaire disposition, demographic characteristics of respondents, analysis of questions, and testing of the hypothesis.

The study involved a planned sample of 1,480 respondents from 24 public secondary schools in Education Districts I, II, IV and V in Lagos State. Twelve questionnaires were classified as unusable, leaving 1,468 questionnaires for analysis.

Table 1: Questionnaire disposition

Questionnaire status	Frequency	Percentage
Questionnaires administered	1,480	100.00
Usable questionnaires	1,468	99.19
Unusable questionnaires	12	0.81
Total	1,480	100.00

Fieldwork, 2026

The above table shows that 1,468 of the 1,480 questionnaires were retained, representing 99.19%. The remaining 12 questionnaires, representing 0.81%, were classified as unusable. This represents the usable proportion of questionnaires administered; the actual response rate depends on the number returned.

Demographic characteristics of respondents

Table 2: Respondents by Position

Position	Frequency	Percentage
Principals	24	1.63
Teachers	1,444	98.37
Total	1,468	100.00

Fieldwork, 2026

From the above table, all the 24 principals participated in the study representing 1.63% while 1,444 teachers representing 98.37 participated in the study. This makes the total participants to be 1,468 leaving only 12 teachers out of the study due to their non availability.

Table 3: Respondents by Gender

Gender	Illustrative frequency	Percentage
Male	642	43.73
Female	826	56.27
Total	1,468	100.00

Fieldwork, 2026

The above table shows the female respondents to constitute 56.27%, while male respondents constitute 43.73%. These establishes female representation in the sample.

Table 4: Respondents by Age

Age	Frequency	Percentage %
25–35 years	155	10.56
36–45 years	426	29.02
46–55 years	563	38.35
56 years and above	324	22.07
Total	1,468	100.00

Fieldwork, 2026

From the above table, 10.56% of the respondents were between 25-35years, 29.02% were between

36-45years while 38.35% were between 46-55years and 22.07% of them were between 56 years and above.

Table 5: Respondents by educational qualification

Qualification	Frequency	Percentage %
NCE	85	5.79
Bachelor's degree or equivalent	741	50.48
Master's degree	571	38.90
Doctoral degree	71	4.84
Total	1,468	100.00

Fieldwork, 2026

From the above table, 85 representing 5.79% of the respondents were NCE holders, 741 representing 50.48% were bachelor's degree holders while 571 representing 38.90% were master's degree holders and only 71 of them representing 4.84% were PhD holders. This indicates that bachelor’s degree and master's degree holders were the highest qualification.

Table 6: Respondents by years of Experience

Years of experience	Frequency	Percentage %
1–5 years	112	7.63
6–10 years	294	20.03
11–15 years	421	28.68
16 years and above	641	43.66
Total	1,468	100.00

Fieldwork, 2026

From the above table, 112 representing 7.63% have between 1-5years experience, 294 representing 20.03% have between 6-10years experience while 421 representing 28.68% were between 11-15years working experience and 641 of them representing 43.66% were between 16years and above. This indicates that the sample includes substantial representation from experienced school personnel.

Question One

What is the extent of digital transformation in public secondary schools in Lagos State?

The decision benchmark is 2.50. Mean scores of 2.50 and above are classified as high, while scores below 2.50 are classified as low.

Table 7: Extent of Digital Transformation in Public Secondary Schools in Lagos State

Digital transformation indicator	Mean	SD	Decision

Availability of digital infrastructure	2.61	0.91	High
Digital communication in school administration	3.02	0.78	High
Digital record management	2.88	0.83	High
Technology-supported supervision	2.54	0.92	High
Digital planning and decision-making	2.73	0.87	High
Grand mean	2.76	—	High

Fieldwork, 2026

From the above table, grand mean of 2.76 exceeds the assumed benchmark of 2.50, suggesting a relatively high extent of digital transformation in the sampled schools. Digital communication has the highest mean of 3.02, while technology-supported supervision has the lowest mean of 2.54. This establishes that digital communication is more established than technology-supported supervision.

4.5 Research Question Two

What is the level of effective educational leadership in public secondary schools in Lagos State?

Table 8: Level of Effective Educational Leadership in Public Secondary Schools in Lagos State

Leadership effectiveness indicator	Mean	SD	Decision
School planning and coordination	3.08	0.72	High
Decision-making	2.94	0.79	High
Instructional supervision	2.81	0.84	High
Resource management	2.76	0.86	High
Monitoring and support for teaching and learning	3.01	0.75	High
Grand mean	2.92	—	High

Fieldwork, 2026

From the above table, grand mean of 2.92 exceeds the benchmark of 2.50, indicating a high perceived level of effective educational leadership under the scoring scheme. School planning and coordination records the highest mean of 3.08, while resource management records the lowest mean of 2.76. In view of this, resource management require particular attention in leadership development and school improvement initiatives.

Test of hypothesis

(H_0): There is no significant relationship between digital transformation and effective educational leadership in public secondary schools in Lagos State.

Pearson's Product-Moment Correlation Coefficient was used to test the relationship between the digital transformation score and the effective educational leadership score.

Table 9: Relationship Between Digital Transformation and Effective Educational Leadership

Variables	N	Correlation coefficient (r)	Sig. V	p-value	decision
Digital transformation and effective educational leadership	1,468	0.620	0.05	< .001	Reject H_0

Fieldwork, 2026

From the above table, the correlation coefficient ($r = .620$, $p < .001$) indicates a positive relationship between the two variables. Since the p-value is less than the 0.05 level of significance, the null hypothesis is rejected in favour of the alternative hypothesis. This therefore established that higher digital transformation scores are associated with higher effective educational leadership scores. However, this would not demonstrate that digital transformation causes effective educational leadership. Other factors, such as funding, leadership experience, teachers' technology competence and school infrastructure, could also contribute to the observed relationship.

Discussion of Findings

The findings revealed a high level of digital transformation in public secondary schools in Lagos State, with digital communication recording the highest mean score among the identified dimensions. This suggests that schools have increasingly adopted digital communication platforms to facilitate information sharing, coordination, and administrative efficiency. The finding aligns with the work of Abari et al. (2024), who reported positive outcomes associated with digitised administrative practices in Lagos State schools. It also supports UNESCO's position that digital technologies can improve organisational effectiveness when appropriately integrated into educational processes. ,

The study also found a high level of effective educational leadership. School planning and coordination recorded the highest mean score, suggesting that school leaders were actively engaged in coordinating activities and guiding school improvement efforts. This finding supports the view that educational leadership extends beyond routine administration to include strategic direction, instructional support, and organisational development. ,

The correlation analysis revealed a statistically significant positive relationship between digital transformation and effective educational leadership. This finding supports the socio-technical systems perspective, which suggests that organisational performance is enhanced when technological systems are effectively integrated with human and organisational processes. It also aligns with the distributed leadership perspective, which emphasizes the role of information sharing and collaborative processes in supporting leadership effectiveness. Similarly, the finding is consistent with the work of Dexter and Richardson (2020), who highlighted the importance of leadership practices in successful technology integration within educational institutions.

Although a positive relationship was established, the findings should be interpreted cautiously because correlation does not imply causation. Factors such as school infrastructure, funding availability, organisational culture, leadership experience, and digital competence may also influence leadership effectiveness. Consequently, digital transformation should be viewed as one of several interrelated factors contributing to effective educational leadership.

Limitation of the Study

The study relied on self-reported questionnaire responses obtained from principals and teachers in selected public secondary schools. Consequently, the findings reflect respondents' perceptions and may not fully capture actual administrative practices. Furthermore, the correlational design does not permit causal conclusions regarding the relationship between digital transformation and effective educational leadership.

Conclusion

The findings revealed a high level of digital transformation and a high level of effective educational leadership in public secondary schools in Lagos State. Respondents reported relatively strong utilisation of digital communication, record management, technology-supported supervision, and digital planning practices within school administration. Similarly, educational leadership was perceived to be effective across the areas of school planning, decision-making, instructional supervision, resource management, and support for teaching and learning.

The study further established a statistically significant positive relationship between digital transformation and effective educational leadership ($r = .620$, $p < .001$). This finding suggests that schools reporting higher levels of digital transformation also tended to report higher levels of leadership effectiveness. While the correlational design does not permit causal conclusions, the results indicate that digital technologies may provide important support for communication, administrative coordination, planning, supervision, and decision-making in public secondary schools.

Recommendations

Based on the reported findings, the following recommendations are made:

1. Lagos State education authorities should assess the availability and functionality of digital equipment, electricity, connectivity and technical support in public secondary schools. Investment should be guided by documented school needs and realistic maintenance plans.
2. Principals and relevant administrative personnel should receive continuing professional development in digital communication, electronic record management, data interpretation, technology-supported supervision and responsible use of digital systems.
3. Schools should adopt suitable and sustainable digital processes for record keeping, reporting, planning and monitoring. Systems should address defined administrative needs rather than be acquired solely because they are technologically advanced.
4. Education authorities and school leaders should establish clear procedures for data accuracy, access permissions, secure storage, confidentiality, backups and responsible use of digital information. The use of technology should protect the rights and interests of students and staff, consistent with the concerns highlighted by UNESCO (2023).
5. Education districts should periodically assess whether digital systems are being used effectively and whether they support identifiable administrative and instructional priorities. Monitoring should consider functionality, staff competence, system use, cost and evidence of practical benefit.

References

1. Olowu, S. B., & Oniyide, O. I. (2026). Digitized Record Keeping Practices, School-Based Decision-

Making and Administrative Effectiveness of Public Senior Secondary School Principals in Lagos State, Nigeria International Journal of Entrepreneurship, Business and Scientific Research, 2(1)

2. Adeyanju, J. A., Ezere, P. I., & Ajide, J. O. (2026). Modernising school administration through digital management practices in public secondary schools in Lagos State, Nigeria. Journal of Modern Management, Shinawatra University, 4(2), 30–45.
3. Bush, T. (2020). Theories of educational leadership and management (5th ed.). SAGE Publications.
4. Dexter, S., & Richardson, J. W. (2020). What does technology integration research tell us about the leadership of technology? Journal of Research on Technology in Education, 52(1), 17–36.
5. Spillane, J. P. (2006). Distributed leadership. Jossey-Bass.
6. United Nations Educational, Scientific and Cultural Organization. (2023). Global education monitoring report 2023: Technology in education—A tool on whose terms? UNESCO.
7. Verhoef, P. C., Broekhuizen, T., Bart, Y., Bhattacharya, A., Dong, J. Q., Fabian, N., & Haenlein, M. (2021). Digital transformation: A multidisciplinary reflection and research agenda. Journal of Business Research, 122, 889–901.
8. Vial, G. (2019). Understanding digital transformation: A review and a research agenda. The Journal of Strategic Information Systems, 28(2), 118–144.