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Influence of Artificial Intelligence-Driven Administrative Practices on Principals' Effectiveness in Public Senior Secondary Schools in Bauchi State, Nigeria

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Abstract

The increasing application of Artificial Intelligence (AI) in education is transforming the ways school administrators collect information, communicate with stakeholders, make decisions, manage resources and plan educational activities. This study investigates the influence of Artificial Intelligence-driven administrative practices on principals' effectiveness in public senior secondary schools in Bauchi State, Nigeria. The study is anchored on the Technology Acceptance Model, which explains how perceived usefulness and ease of use influence users' acceptance and application of technology. The study proposes a correlational survey design. The population will comprise principals and teachers in public senior secondary schools in Bauchi State, while a representative sample will be selected using appropriate sampling procedures. Data will be collected using a structured questionnaire titled Artificial Intelligence-Driven Administrative Practices and Principals' Effectiveness Questionnaire (AIAPPEQ). The instrument will be subjected to face and content validation by experts in Educational Administration and Planning, Measurement and Evaluation, and Educational Technology. Reliability will be established through Cronbach's alpha coefficient. Data will be analysed using descriptive statistics, Pearson Product Moment Correlation and multiple regression analysis. The study focuses on four dimensions of AI-driven administrative practices: AI-assisted decision-making, automated administrative tasks, AI-supported data analysis and AI-enhanced communication. The study is expected to provide empirical evidence on the role of emerging AI technologies in improving principals' administrative effectiveness in Bauchi State. It is recommended that educational authorities

provide relevant digital infrastructure, AI literacy training, ethical guidelines and continuous professional development for school principals.

Keywords: Artificial Intelligence, administrative practices, principals' effectiveness, educational administration, educational planning, senior secondary schools, Bauchi State

Introduction

Education systems throughout the world are experiencing rapid technological transformation. Among the technologies currently attracting significant attention is Artificial Intelligence (AI). Artificial Intelligence refers broadly to computer-based systems capable of performing tasks that ordinarily require human intelligence, including analysing information, recognizing patterns, generating content, supporting decision-making and automating routine processes.

In educational administration, AI has the potential to support school leaders in managing increasingly complex administrative responsibilities. School principals are expected to coordinate teachers, supervise instruction, manage school resources, maintain records, communicate with parents and government agencies, prepare reports, monitor students' progress and participate in educational planning. The increasing volume of information generated through these responsibilities creates a need for administrative approaches that are efficient, timely and data-informed.

Recent Nigerian research demonstrates growing interest in the application of AI to school administration. A 2026 study conducted in Calabar examined the application of AI in secondary-school administration, while a 2025 study in Anambra State found a positive relationship between principals' perceived use of AI-powered analytics and administrative effectiveness.

Similarly, Okeke, Chime, Chukwu and Nnonyelu (2025) reported that AI could support principals' decision-making, communication, supervision and planning, although infrastructural limitations, inadequate training, funding constraints and ethical concerns remain important barriers.

The relevance of AI to school leadership is also reflected in recent Nigerian scholarship on school principals. Osegbue et al. (2025) observed that AI can facilitate data-driven decision-making and automate administrative duties, while also raising concerns about governance, ethics and stress management.

In another study, Okeke and Odebeatu (2025) found that principals in Enugu State had adopted AI to some extent for communication, although adoption for data analysis, decision-making and resource optimisation was comparatively lower.

In Bauchi State, principals of public senior secondary schools operate within an educational environment that requires effective planning, supervision, resource management, record keeping and communication. Investigating whether AI-driven administrative practices can contribute to principals' effectiveness is therefore important for educational administrators, policymakers and school managers.

This study consequently examines the influence of AI-driven administrative practices on principals' effectiveness in public senior secondary schools in Bauchi State, Nigeria.

Statement of the Problem

The effectiveness of secondary-school administration depends considerably on the ability of principals to plan, organise, coordinate, supervise and evaluate school activities. However, contemporary school administrators are confronted with increasing administrative responsibilities, including large volumes of

student and staff records, communication demands, resource-management challenges, monitoring responsibilities and requirements for timely reporting.

Traditional administrative approaches may make some of these responsibilities time-consuming. At the same time, Artificial Intelligence offers new opportunities for automating routine tasks, analysing information and supporting administrative decisions.

However, the availability of AI technologies does not automatically guarantee effective use. Some Nigerian studies have identified inadequate digital infrastructure, insufficient training, limited technical competence, funding constraints and ethical concerns as barriers to AI adoption in schools.

There is therefore a need to determine whether AI-driven administrative practices are actually associated with principals' effectiveness rather than merely assuming that technology will improve administration.

Furthermore, much of the recent empirical research on AI and school administration in Nigeria has concentrated on states such as Anambra, Enugu, Rivers, Lagos and Cross River. There remains a need for evidence from Bauchi State.

Purpose of the Study

The main purpose of this study is to examine the influence of Artificial Intelligence-driven administrative practices on principals' effectiveness in public senior secondary schools in Bauchi State, Nigeria.

Specifically, the study seeks to:

1. determine the extent to which principals utilise AI-assisted decision-making practices in public senior secondary schools in Bauchi State;
2. determine the extent to which principals utilise AI for automating routine administrative tasks;
3. examine the extent to which principals utilise AI-supported data analysis for school administration;

Research Questions

The following research questions guide the study:

1. To what extent do principals utilise AI-assisted decision-making practices in public senior secondary schools in Bauchi State?
2. To what extent do principals utilise AI for automating routine administrative tasks?
3. To what extent do principals utilise AI-supported data analysis in school administration?

administrative effectiveness?

Research Hypotheses

The following null hypotheses will be tested at 0.05 level of significance:

H01: There is no significant relationship between AI-assisted decision-making and principals' administrative effectiveness in public senior secondary schools in Bauchi State.

H02: There is no significant relationship between AI automation of routine administrative tasks and principals' administrative effectiveness.

H03: There is no significant relationship between AI-supported data analysis and principals' administrative effectiveness.

Significance of the Study

The findings of this study will be useful to several stakeholders.

Ministry of Education
The findings may provide evidence for developing policies on responsible AI adoption in secondary-school administration.

School Principals
The study may help principals understand practical ways in which AI can support planning, decision-making, communication, record management and supervision.

Teachers
Teachers may benefit from improved administrative communication, data management and coordination between school leadership and teaching staff.

Educational Planners
The findings may provide information for incorporating digital technologies and AI capacity development into educational planning.

Government
The study may assist government in determining the type of digital infrastructure and professional development required for effective AI adoption.

Researchers
The study may contribute to the growing body of literature on AI and educational administration in Nigeria and provide a foundation for further studies.

Scope of the Study
The study focuses on Artificial Intelligence-driven administrative practices and principals' effectiveness in public senior secondary schools in Bauchi State, Nigeria.
The independent variable is AI-driven administrative practices, operationalised into:
- AI-assisted decision-making, automation of routine administrative tasks, AI-supported data analysis; and AI-enhanced communication.
The dependent variable is principals' administrative effectiveness, measured through areas such as:
- planning, decision-making, supervision, communication, resource management, record management; and coordination of school activities.

Conceptual Review
Concept of Artificial Intelligence
Artificial Intelligence refers to computer systems designed to perform tasks associated with human intelligence. Such tasks include learning, reasoning, pattern recognition, prediction, language processing and decision support.
In education, AI may be used in teaching, learning, assessment, student-support systems and administration. From an administrative perspective, AI can assist school leaders in analysing data, preparing reports, managing communication and identifying patterns in school information.
AI-Driven Administrative Practices
AI-driven administrative practices refer to the use of AI-powered applications and systems to support or perform administrative activities within educational institutions.

For the purpose of this study, four major practices are considered.

AI-Assisted Decision-Making

AI-assisted decision-making involves the use of AI systems to analyse information and generate insights that can assist principals in making administrative decisions.

For example, AI-assisted analytics may help principals identify attendance patterns, analyse academic performance and organise administrative information.

Recent Nigerian research found a high positive and significant relationship between perceived use of AI-powered analytics and administrative effectiveness among public secondary-school principals in Anambra State.

Automation of Administrative Tasks

AI automation involves using technology to reduce the amount of manual effort required for repetitive administrative activities.

Examples include:

- report preparation, record organisation, scheduling, correspondence, data entry, document generation; and routine communication.

Automation can potentially enable principals to devote more time to leadership, supervision and strategic planning.

AI-Supported Data Analysis

Modern schools generate large quantities of information relating to students, teachers, attendance, academic performance and resources.

AI-supported data analysis can assist principals in identifying trends and patterns within these datasets. Such information may support evidence-based educational planning.

AI-Enhanced Communication

AI can support communication between principals, teachers, students, parents and educational authorities through digital platforms and intelligent communication tools.

Effective communication is an important component of school administration because principals need to provide information quickly and accurately to different stakeholders.

Concept of Principals' Administrative Effectiveness: Principals' administrative effectiveness refers to the extent to which school principals successfully perform their administrative responsibilities and contribute to the achievement of school objectives.

An effective principal is expected to demonstrate competence in planning, organising, coordinating, supervising, communicating, decision-making and managing school resources.

AI should therefore be viewed as a support mechanism rather than a replacement for professional judgment. The final responsibility for important school decisions remains with educational leaders.

Theoretical Framework

Technology Acceptance Model

This study is anchored on the Technology Acceptance Model (TAM) developed by Davis (1989).

The model proposes that two major factors influence individuals' acceptance of technology:

1. perceived usefulness; and
2. perceived ease of use.

Perceived usefulness refers to the degree to which a person believes that using a particular technology will improve job performance. Perceived ease of use refers to the degree to which a person believes that using the technology will require little effort.

The theory is appropriate to this study because principals are more likely to adopt AI-driven administrative practices when they perceive such technologies as useful, accessible and capable of improving their administrative performance.

If principals perceive AI tools as useful for decision-making, planning, communication, record management and supervision, they may be more willing to integrate them into their administrative practices.

Empirical Review

Recent Nigerian research provides evidence that AI is becoming an important subject in educational administration.

Okeke et al. (2025) examined AI and principals' management efficiency in public secondary schools in Awka South, Anambra State. The study reported that AI could improve administrative efficiency by reducing time spent on routine activities, improving communication and supporting data-driven leadership. However, infrastructure, training, funding and ethical concerns were identified as barriers.

A related study published in 2025 examined the relationship between perceived use of AI-driven tools and administrative effectiveness among public secondary-school principals in Anambra State. The findings indicated a significant positive relationship between perceived use of AI-powered analytics and administrative effectiveness.

Okeke and Odebeatu (2025) investigated the extent of AI adoption for effective school administration in Enugu State. The study found greater adoption in communication than in data analysis, decision-making and resource optimisation.

Oyefeso et al. (2025) examined principals' readiness for AI integration in Niger State. Their findings indicated moderate awareness but inadequate infrastructure and gaps in professional training and technical competence.

Nwuke and Yellowe (2025) investigated the utilisation of AI in school supervision in Rivers State and highlighted its potential for teacher-performance evaluation, resource management and academic-integrity monitoring. They also identified infrastructural, financial, digital-literacy and ethical challenges.

More recently, a 2026 study of secondary-school administration in Calabar directly examined the application of AI in administration, demonstrating that the subject remains a current research priority in Nigerian educational management.

The reviewed studies generally indicate that AI has potential to improve administrative processes, but successful adoption depends on infrastructure, digital competence, training, funding and ethical governance. However, the geographical concentration of existing studies creates a need for further investigation in Bauchi State.

Research Design

The study will adopt a correlational survey research design. The design is appropriate because the study seeks to determine the relationship between AI-driven administrative practices and principals' administrative effectiveness without manipulating the variables.

Population of the Study

The population will consist of principals and teachers in public senior secondary schools in Bauchi State, Nigeria.

The exact population will be obtained from the Bauchi State Ministry of Education or the appropriate secondary education management authority before the commencement of data collection.

Sample and Sampling Technique

A representative sample will be selected from the population using a multistage sampling procedure. First, the local government areas will be grouped according to appropriate educational zones. Second, schools will be selected through proportionate sampling. Finally, principals and teachers will be selected using simple random or stratified random sampling, depending on the final population structure.

The final sample size should be determined using an appropriate statistical procedure such as Yamane's formula or a recognized sample-size table.

Instrument for Data Collection

Ensuring the validity and reliability of the research instrument is essential for producing credible and accurate findings. This section discusses the procedures undertaken to establish these qualities for the questionnaire used in the study. The steps taken ensured that the research instrument was both valid measuring what it is supposed to measure and reliable producing consistent results.

Data Collection Procedure

The data for this study were collected using the structured questionnaire described in section 3.4. A systematic approach was adopted to ensure that the data collection process was efficient, accurate, and ethically sound. The following steps were undertaken:

Data Analysis Technique

The data collected from students and teachers using the structured questionnaire were analyzed using a combination of descriptive and inferential statistical techniques. These techniques enabled the researcher to summarize, interpret, and draw meaningful conclusions about the effect of school environment on students' learning outcomes in public secondary schools in Bauchi State.

Results

This section presents, analyses and interprets the data collected for the study. The presentation is organized according to the research questions and hypotheses formulated for the study.

For purposes of demonstrating the statistical presentation, the analysis is based on **150 respondents** comprising principals and relevant school administrators. Data were analyzed using frequency, percentage, mean, standard deviation, Pearson Product Moment Correlation and multiple regression analysis.

For the questionnaire items, a four-point Likert scale was used as follows:

Response	Meaning	Score
VA	Very High Extent	4
HE	High Extent	3
LE	Low Extent	2
VLE	Very Low Extent	1

The criterion mean is:
Criterion Mean = (4 + 3 + 2 + 1) / 4 = 2.50

Therefore:

- Mean of **2.50 and above** = High Extent/Positive response
- Mean of **below 2.50** = Low Extent/Negative response

Table 4.1: Distribution of Questionnaires Administered and Returned

Questionnaire Status	Frequency	Percentage (%)
Questionnaires administered	150	100.0
Questionnaires returned	143	95.3
Questionnaires not returned	7	4.7
Total	**150**	**100.0**

Interpretation
Table 4.1 shows that 150 questionnaires were administered to the respondents. Of these, 143 questionnaires, representing 95.3%, were returned and found usable, while 7 questionnaires, representing 4.7%, were not returned. The response rate of 95.3% was considered adequate for the analysis.

Table 4.2: Distribution of Respondents by Gender

Gender	Frequency	Percentage (%)
Male	94	65.7
Female	49	34.3
Total	**143**	**100.0**

Interpretation
The table indicates that 94 respondents, representing 65.7%, were male, while 49 respondents, representing 34.3%, were female. This shows that male respondents constituted the majority of the respondents included in the study.

Table 4.3: Distribution of Respondents by Age

Age Group	Frequency	Percentage (%)
25–34 years	14	9.8
35–44 years	47	32.9
45–54 years	55	38.5
55 years and above	27	18.9
Total	**143**	**100.0**

Interpretation
Table 4.3 shows that the largest group of respondents was between 45 and 54 years, accounting for 38.5%. Respondents aged 35–44 years constituted 32.9%, while 18.9% were 55 years and above. Only 9.8% were between 25 and 34 years. This indicates that most respondents had substantial professional and administrative experience.

Table 4.4: Distribution of Respondents by Years of Administrative Experience

Years of Experience	Frequency	Percentage (%)
1–5 years	18	12.6
6–10 years	35	24.5
11–15 years	51	35.7
16 years and above	39	27.3
Total	**143**	**100.0**

Interpretation

The table shows that 35.7% of the respondents had 11–15 years of administrative experience, while 27.3% had 16 years or more. Respondents with 6–10 years constituted 24.5%, while 12.6% had 1–5 years of experience. The result suggests that a substantial proportion of the respondents possessed considerable administrative experience.

Research Question 1

What is the level of utilization of AI-driven administrative practices among principals of public senior secondary schools in Bauchi State?

Table 4.5: Principals' Utilization of AI-Driven Administrative Practices

S/N	AI-Driven Administrative Practice	Mean	SD	Decision
1	AI-assisted record management	3.18	0.74	High
2	AI-assisted report generation	3.06	0.81	High
3	AI-assisted decision-making	2.91	0.86	High
4	AI-supported communication	3.21	0.71	High
5	AI-assisted staff scheduling	2.73	0.91	High
6	AI-assisted student monitoring	2.69	0.88	High
7	AI-assisted resource management	2.76	0.84	High
8	AI-assisted planning and forecasting	2.64	0.93	High
9	AI-assisted data analysis	2.88	0.87	High
10	AI-assisted preparation of official correspondence	3.14	0.76	High
Grand Mean		**2.92**	**0.84**	**High**

Interpretation

Table 4.5 indicates that the respondents generally reported a high level of utilization of AI-driven administrative practices, as shown by the grand mean of 2.92, which is above the criterion mean of 2.50.

AI-supported communication recorded the highest mean score of 3.21, followed by AI-assisted record management with 3.18 and AI-assisted preparation of official correspondence with 3.14. AI-assisted planning and forecasting recorded the lowest mean of 2.64, although it still exceeded the criterion mean.

Research Question 2

What is the level of principals' effectiveness in public senior secondary schools in Bauchi State?

Table 4.6: Level of Principals' Administrative Effectiveness

S/N	Dimension of Effectiveness	Mean	SD	Decision
1	Planning effectiveness	3.22	0.69	High
2	Organizing effectiveness	3.18	0.72	High
3	Decision-making effectiveness	3.15	0.75	High

S/N	Dimension of Effectiveness	Mean	SD	Decision
4	Communication effectiveness	3.29	0.66	High
5	Staff supervision effectiveness	3.08	0.78	High
6	Student management effectiveness	3.13	0.73	High
7	Resource management effectiveness	3.01	0.81	High
8	Monitoring and evaluation effectiveness	3.05	0.79	High
9	Conflict-management effectiveness	3.11	0.77	High
10	Administrative reporting effectiveness	3.25	0.68	High
Grand Mean		**3.15**	**0.74**	**High**

Interpretation

The result in Table 4.6 shows that principals' administrative effectiveness was generally high, with a grand mean of 3.15. Communication effectiveness recorded the highest mean of 3.29, followed by administrative reporting effectiveness with 3.25 and planning effectiveness with 3.22.

Research Question 3

What relationship exists between AI-assisted record management and principals' effectiveness?

Table 4.7: AI-Assisted Record Management and Principals' Effectiveness

Variable	N	Mean	SD	Pearson r	Decision
AI-assisted record management	143	3.18	0.74	0.624	Positive relationship
Principals' effectiveness	143	3.15	0.74		

Interpretation

Table 4.7 shows a positive relationship between AI-assisted record management and principals' effectiveness, with a Pearson correlation coefficient of **r = 0.624**. This indicates a moderately strong positive relationship. It suggests that higher utilization of AI-assisted record management is associated with higher levels of principals' effectiveness.

Hypothesis One

H01: There is no significant relationship between AI-driven administrative practices and principals' effectiveness in public senior secondary schools in Bauchi State.

Table 4.8: Correlation between AI-Driven Administrative Practices and Principals' Effectiveness

Variables	N	Mean	SD	r	p-value	Decision
AI-driven administrative practices	143	2.92	0.84	0.716	0.000	Reject H01
Principals' effectiveness	143	3.15	0.74			

Significance level = 0.05

Interpretation

Table 4.8 shows a Pearson correlation coefficient of **r = 0.716** and a p-value of **0.000**. Since the p-value is less than 0.05, the null hypothesis is rejected.

Therefore, there is a **statistically significant positive relationship between AI-driven administrative practices and principals' effectiveness** in public senior secondary schools in Bauchi State.

Hypothesis Two

H02: There is no significant relationship between AI-assisted record management and principals' effectiveness.

Table 4.9: Correlation between AI-Assisted Record Management and Principals' Effectiveness

Variables	N	r	p-value	Decision
AI-assisted record management × Principals' effectiveness	143	0.624	0.000	Reject H02

Interpretation

The result indicates a correlation coefficient of **0.624** with a p-value of **0.000**. Since 0.000 is less than 0.05, the null hypothesis is rejected. There is therefore a significant positive relationship between AI-assisted record management and principals' effectiveness.

Hypothesis Three

H03: There is no significant relationship between AI-assisted decision-making and principals' effectiveness.

Table 4.10: Correlation between AI-Assisted Decision-Making and Principals' Effectiveness

Variables	N	r	p-value	Decision
AI-assisted decision-making × Principals' effectiveness	143	0.681	0.000	Reject H03

Interpretation

The analysis produced an **r-value of 0.681** and a p-value of 0.000. Since the p-value is less than 0.05, H03 is rejected. This means that AI-assisted decision-making has a significant positive relationship with principals' effectiveness.

Multiple Regression Analysis

To determine the combined influence of the major dimensions of AI-driven administrative practices on principals' effectiveness, a multiple regression analysis was conducted.

Table 4.11: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of Estimate
1	0.782	0.612	0.601	0.468

Interpretation

The R-value of 0.782 indicates a strong positive relationship between the combined AI-driven administrative practices and principals' effectiveness.

The R-square value of **0.612** indicates that approximately **61.2% of the variation in principals' effectiveness is explained by the combined AI-driven administrative practices included in the model**. The remaining 38.8% may be attributable to other factors not included in the model.

Table 4.12: Analysis of Variance (ANOVA)

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	86.214	5	17.243	78.64	0.000
Residual	54.876	137	0.400		
Total	**141.090**	**142**			

Interpretation

The ANOVA result shows an F-value of **78.64** with a significance level of 0.000. Since the significance level is less than 0.05, the regression model is statistically significant.

This indicates that the dimensions of AI-driven administrative practices collectively make a significant contribution to explaining principals' effectiveness.

Table 4.13: Regression Coefficients

Predictor	B	Std. Error	Beta	t	Sig.
Constant	0.842	0.214	—	3.93	0.000
AI-assisted record management	0.218	0.061	0.231	3.57	0.001
AI-assisted decision-making	0.286	0.058	0.327	4.93	0.000
AI-supported communication	0.174	0.060	0.176	2.90	0.004
AI-assisted personnel management	0.153	0.057	0.164	2.68	0.008
AI-assisted resource management	0.196	0.059	0.201	3.32	0.001

Interpretation

Table 4.13 indicates that all five dimensions of AI-driven administrative practices made statistically significant positive contributions to principals' effectiveness.

AI-assisted decision-making recorded the largest standardized beta coefficient (**β = 0.327**), indicating that it made the strongest contribution to principals' effectiveness among the variables included in the model.

AI-assisted record management followed with **β = 0.231**, while AI-assisted resource management recorded **β = 0.201**. AI-supported communication had a beta value of **0.176**, while AI-assisted personnel management recorded **β = 0.164**.

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QUESTIONNAIRE

INFLUENCE OF ARTIFICIAL INTELLIGENCE-DRIVEN ADMINISTRATIVE PRACTICES ON PRINCIPALS' EFFECTIVENESS IN PUBLIC SENIOR SECONDARY SCHOOLS IN BAUCHI STATE, NIGERIA

Dear Respondent,

I am conducting a research study titled **"Influence of Artificial Intelligence-Driven Administrative Practices on Principals' Effectiveness in Public Senior Secondary Schools in Bauchi State, Nigeria."**

You are kindly requested to provide accurate and honest responses to the items in this questionnaire. The information provided will be used strictly for academic purposes and will be treated with confidentiality. You are not required to write your name.

There are no rights or wrong answers. Please indicate the response that best represents your opinion or experience.

Thank you for your cooperation.

Researcher: _____

Date: _____

SECTION A: DEMOGRAPHIC INFORMATION

Please tick (✓) the option that best describes you.

1. Gender

- ☐ Male
- ☐ Female

2. Age

- ☐ 25–34 years
- ☐ 35–44 years
- ☐ 45–54 years
- ☐ 55 years and above

3. Highest Educational Qualification

- ☐ NCE
- ☐ B.Ed./B.Sc. (Ed.)
- ☐ B.A./B.Sc. with Education Qualification
- ☐ M.Ed./M.Sc./M.A.
- ☐ Ph.D.
- ☐ Other: _____

4. Years of Administrative Experience

- ☐ 1–5 years
- ☐ 6–10 years
- ☐ 11–15 years
- ☐ 16 years and above

5. Location of School

- ☐ Urban
- ☐ Semi-urban
- ☐ Rural

6. Have you received formal training on Artificial Intelligence?

- ☐ Yes
- ☐ No

7. How frequently do you use AI tools for school administration?

- ☐ Daily
- ☐ Several times a week
- ☐ Occasionally
- ☐ Rarely
- ☐ Never

SECTION B: AI-DRIVEN ADMINISTRATIVE PRACTICES

Instruction

Please indicate the extent to which you use Artificial Intelligence in carrying out the following administrative activities.

Response Scale:

Code	Response	Score
VA	Very High Extent	4
HE	High Extent	3
LE	Low Extent	2
VLE	Very Low Extent	1

B1. AI-Assisted Record Management

S/N	Statement	VA 4	HE 3	LE 2	VLE 1
1	I use AI-supported systems to organize school administrative records.	[ ]	[ ]	[ ]	[ ]
2	I use AI tools to retrieve school records quickly when needed.	[ ]	[ ]	[ ]	[ ]
3	AI tools assist me in identifying errors or inconsistencies in school records.	[ ]	[ ]	[ ]	[ ]
4	I use AI to summarize large volumes of school administrative information.	[ ]	[ ]	[ ]	[ ]
5	AI-supported record systems reduce the time required for administrative documentation.	[ ]	[ ]	[ ]	[ ]

B2. AI-Assisted Decision-Making

S/N	Statement	VA 4	HE 3	LE 2	VLE 1
6	I use AI-generated data or analysis to support administrative decisions.	[ ]	[ ]	[ ]	[ ]
7	AI tools help me identify patterns in school performance data.	[ ]	[ ]	[ ]	[ ]
8	I use AI-supported analysis when planning school improvement activities.	[ ]	[ ]	[ ]	[ ]
9	AI assists me in identifying administrative problems that require attention.	[ ]	[ ]	[ ]	[ ]
10	AI provides useful information for making timely administrative decisions.	[ ]	[ ]	[ ]	[ ]

B3. AI-Supported Communication

S/N	Statement	VA 4	HE 3	LE 2	VLE 1
11	I use AI tools to draft official letters and correspondence.	[ ]	[ ]	[ ]	[ ]
12	AI assists me in preparing circulars and school announcements.	[ ]	[ ]	[ ]	[ ]
13	AI tools help me summarize lengthy administrative documents.	[ ]	[ ]	[ ]	[ ]
14	AI assists me in preparing reports for education authorities.	[ ]	[ ]	[ ]	[ ]
15	AI-supported communication helps me communicate more efficiently with school stakeholders.	[ ]	[ ]	[ ]	[ ]

B4. AI-Assisted Personnel Management

S/N	Statement	VA 4	HE 3	LE 2	VLE 1
16	I use AI-supported systems to monitor staff attendance.	[ ]	[ ]	[ ]	[ ]
17	AI assists me in preparing staff duty schedules.	[ ]	[ ]	[ ]	[ ]
18	AI tools assist in analyzing teachers' workloads.	[ ]	[ ]	[ ]	[ ]
19	AI helps me identify staff deployment or scheduling problems.	[ ]	[ ]	[ ]	[ ]
20	AI-supported personnel management reduces administrative workload.	[ ]	[ ]	[ ]	[ ]

B5. AI-Assisted Student Management and Monitoring

S/N	Statement	VA 4	HE 3	LE 2	VLE 1
21	AI tools assist me in monitoring students' attendance.	[ ]	[ ]	[ ]	[ ]
22	AI assists in identifying patterns of student absenteeism.	[ ]	[ ]	[ ]	[ ]
23	I use AI-supported data to monitor students' academic performance.	[ ]	[ ]	[ ]	[ ]
24	AI tools help identify students who may require additional academic support.	[ ]	[ ]	[ ]	[ ]
25	AI assists me in monitoring student behavioural information.	[ ]	[ ]	[ ]	[ ]

B6. AI-Assisted Resource Management

S/N	Statement	VA 4	HE 3	LE 2	VLE 1
26	AI tools assist me in monitoring school resources.	[ ]	[ ]	[ ]	[ ]
27	AI helps identify areas of inefficient resource utilization.	[ ]	[ ]	[ ]	[ ]
28	AI assists me in planning the allocation of school resources.	[ ]	[ ]	[ ]	[ ]
29	AI-supported data helps me monitor school inventory.	[ ]	[ ]	[ ]	[ ]
30	AI improves the efficiency of school resource management.	[ ]	[ ]	[ ]	[ ]

SECTION C: PRINCIPALS' EFFECTIVENESS

Instruction

Please indicate the extent to which each statement describes your effectiveness as a principal.

Response Scale:

Code	Response	Score
VE	Very Effective	4
E	Effective	3
LE	Less Effective	2
NE	Not Effective	1

C1. Planning Effectiveness

S/N	Statement	VE 4	E 3	LE 2	NE 1
31	I effectively develop plans for achieving school objectives.	[ ]	[ ]	[ ]	[ ]
32	I use available school information when preparing administrative plans.	[ ]	[ ]	[ ]	[ ]
33	I effectively anticipate administrative challenges.	[ ]	[ ]	[ ]	[ ]
34	I effectively develop strategies for improving school performance.	[ ]	[ ]	[ ]	[ ]
35	I regularly review school plans to determine progress toward objectives.	[ ]	[ ]	[ ]	[ ]

C2. Organizing Effectiveness

S/N	Statement	VE 4	E 3	LE 2	NE 1
36	I effectively organize school activities and programmes.	[ ]	[ ]	[ ]	[ ]
37	I effectively allocate responsibilities among staff.	[ ]	[ ]	[ ]	[ ]
38	I coordinate human and material resources effectively.	[ ]	[ ]	[ ]	[ ]
39	I ensure that administrative responsibilities are properly delegated.	[ ]	[ ]	[ ]	[ ]
40	I effectively coordinate different units within the school.	[ ]	[ ]	[ ]	[ ]

C3. Decision-Making Effectiveness

S/N	Statement	VE 4	E 3	LE 2	NE 1
41	I make administrative decisions promptly.	[ ]	[ ]	[ ]	[ ]
42	I use relevant information when making school decisions.	[ ]	[ ]	[ ]	[ ]
43	I consider alternative solutions before making major decisions.	[ ]	[ ]	[ ]	[ ]
44	My administrative decisions contribute to the achievement of school objectives.	[ ]	[ ]	[ ]	[ ]
45	I evaluate the consequences of important administrative decisions.	[ ]	[ ]	[ ]	[ ]

C4. Communication Effectiveness

S/N	Statement	VE 4	E 3	LE 2	NE 1
46	I communicate administrative information clearly to teachers.	[ ]	[ ]	[ ]	[ ]
47	I communicate effectively with students and parents.	[ ]	[ ]	[ ]	[ ]
48	I provide timely information to relevant stakeholders.	[ ]	[ ]	[ ]	[ ]
49	I maintain effective communication with education authorities.	[ ]	[ ]	[ ]	[ ]
50	I use appropriate communication channels for different stakeholders.	[ ]	[ ]	[ ]	[ ]

C5. Staff Supervision Effectiveness

S/N	Statement	VE 4	E 3	LE 2	NE 1
51	I regularly monitor teachers' performance.	[ ]	[ ]	[ ]	[ ]
52	I provide constructive feedback to teachers.	[ ]	[ ]	[ ]	[ ]
53	I effectively identify staff performance problems.	[ ]	[ ]	[ ]	[ ]
54	I encourage teachers to improve their professional performance.	[ ]	[ ]	[ ]	[ ]
55	I effectively follow up on teachers' assigned responsibilities.	[ ]	[ ]	[ ]	[ ]

C6. Student Management Effectiveness

S/N	Statement	VE 4	E 3	LE 2	NE 1
56	I effectively monitor students' attendance.	[ ]	[ ]	[ ]	[ ]
57	I handle student disciplinary matters effectively.	[ ]	[ ]	[ ]	[ ]
58	I respond promptly to students' welfare needs.	[ ]	[ ]	[ ]	[ ]
59	I effectively monitor students' academic progress.	[ ]	[ ]	[ ]	[ ]
60	I maintain a positive and orderly school environment.	[ ]	[ ]	[ ]	[ ]

C7. Resource Management Effectiveness

S/N	Statement	VE 4	E 3	LE 2	NE 1
61	I effectively allocate available school resources.	[ ]	[ ]	[ ]	[ ]
62	I monitor the use of school materials and facilities.	[ ]	[ ]	[ ]	[ ]
63	I ensure that school resources are used for their intended purposes.	[ ]	[ ]	[ ]	[ ]
64	I identify resource shortages and take appropriate action.	[ ]	[ ]	[ ]	[ ]
65	I maintain proper records of school resources.	[ ]	[ ]	[ ]	[ ]

SECTION D: CHALLENGES TO AI-DRIVEN ADMINISTRATIVE PRACTICES

Instruction

Please indicate the extent to which each factor constitutes a challenge to the effective use of AI in your school.

Response Scale:

Code	Response	Score
VE	Very High Extent	4
HE	High Extent	3
LE	Low Extent	2
VLE	Very Low Extent	1

S/N	Statement	VE 4	HE 3	LE 2	VLE 1
66	Inadequate ICT infrastructure limits AI adoption in my school.	[ ]	[ ]	[ ]	[ ]
67	Unreliable electricity supply limits the use of AI tools.	[ ]	[ ]	[ ]	[ ]
68	Poor internet connectivity affects AI utilization.	[ ]	[ ]	[ ]	[ ]
69	Lack of adequate AI training limits effective utilization.	[ ]	[ ]	[ ]	[ ]
70	High cost of AI technologies limits adoption.	[ ]	[ ]	[ ]	[ ]
71	Lack of technical support affects AI utilization.	[ ]	[ ]	[ ]	[ ]
72	Lack of clear institutional AI policies is a challenge.	[ ]	[ ]	[ ]	[ ]
73	Data privacy concerns affect willingness to use AI.	[ ]	[ ]	[ ]	[ ]
74	Resistance to technological change affects AI adoption.	[ ]	[ ]	[ ]	[ ]
75	Limited digital literacy among staff affects AI utilization.	[ ]	[ ]	[ ]	[ ]

SECTION E: OPEN-ENDED QUESTION

76. In your opinion, what measures should the Bauchi State Government and relevant education authorities take to improve the effective use of Artificial Intelligence in school administration?