

## **Principals' Digital Literacy and Effective Administration of Private Secondary Schools in Port Harcourt Metropolis, Rivers State**

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**Abstract:** This study examined principals' digital literacy and effective administration of private secondary schools in Port Harcourt Metropolis, Rivers State. The study was guided by three research objectives from which three research questions were posed and five hypotheses were tested. The study adopted a correlational survey design with a population of 718 school administrators in government approved private secondary schools in Port Harcourt Metropolis. The sample size of the study was 143 respondents comprising 103 principals in Obio/Akpor and 40 principals in private secondary schools in Port Harcourt Local Government Areas respectively. The proportionate stratified sampling technique was adopted in selecting 20% of the population of schools in Obio/Akpo LGA to arrive at 103 principals and 20% of the population of schools in Port Harcourt LGA to arrive at 40 principals.. The instruments for data collection were researcher-designed questionnaires titled "Principals' Digital Skills Questionnaire" and "Effective School Administration Questionnaire". respectively. The instruments were validated by three experts, one expert in Educational Management, and two other experts in Measurement and Evaluation. The internal consistencies of the instruments were determined using the Cronbach Alpha statistics. Reliability coefficients of 0.71, 0.70, 0.82 and 0.75 were obtained for the various clusters of the study. The research questions were answered and the hypotheses tested using Pearson Product Moment Correlation statistics. The hypotheses were further subjected to t-transformation to establish the significance of the r-value at 0.05 level of significance. The result of the analyzed data revealed that there is a high positive relationship between principals' acquisition of basic ICT skills, principals' digital communication skills and effective administration of private secondary schools in Port Harcourt metropolis, Rivers State. Based on the findings, it was recommended among others that Education authorities and school proprietors should implement targeted training programmes to improve principals' acquisition of basic ICT skills. These programs should focus on practical

applications such as managing digital records, scheduling, and using tools for performance tracking. Regular workshops and certifications in ICT proficiency should be made mandatory for all school administrators.

**Keywords:** Digital Literacy, Administration, Principal, Skills.

### **Article History**

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### **Introduction**

In the 21st century, digital literacy has become essential for effective leadership and administration in educational institutions. Digital tools and platforms have significantly transformed administrative processes, impacting on how schools are managed and how decisions are made. Supporting this view, Amie-Ogan and Osuji (2020) observed that the introduction of digitization in the school system has profited the education sector through the use of digital instructional materials such as computer, scanners, printers etc. It is worthy of note, however, that for schools to use digital tools effectively, lecturers and other staff must be digitally literate. Digital literacy, as defined by Ng (2012), encompasses the ability to use information and communication technologies (ICT) effectively, including basic computer skills, internet navigation, and the use of digital platforms for communication, collaboration, and management. The increasing reliance on technology in education administration underscores the need for school principals to be digitally literate.

In private secondary schools, especially in urban centers like Port Harcourt Metropolis, the demands of modern administration have escalated, requiring principals to adapt to new digital tools for administrative efficiency. According to Eze and Olatunji (2021), private schools face the challenge of remaining competitive by integrating digital technologies into their operations, both in the classroom and in management. Digital literacy plays a pivotal role in ensuring that principals can lead effectively, especially in areas such as data management, communication with stakeholders, and the overall improvement of teaching and learning processes.

Moreover, digital literacy is critical for enhancing the decision-making process in schools. Principals who are adept in using digital tools can easily access data, analyze school performance

metrics, and make informed decisions that benefit students, staff, and the entire school community (Wanjiru & Kimani, 2020). In contrast, those who lack digital skills may struggle with basic administrative functions such as record keeping, staff coordination, and resource management, ultimately affecting the smooth operation of the school.

The educational sector in Nigeria has not been exempt from the global digital shift. In recent years, there has been an increasing push for the digitalization of education management, particularly following the disruptions caused by the COVID-19 pandemic. According to Adeosun (2022), the pandemic accelerated the adoption of digital technologies in Nigerian schools, highlighting the need for school leaders to develop their digital competence. Private secondary schools in Port Harcourt, which operate in a highly competitive market, must leverage these advancements to remain relevant. This requires that principals not only be aware of digital tools but also possess the necessary skills to utilize them for effective school administration.

Effective administration in schools includes a range of tasks such as student enrollment, staff management, curriculum implementation, financial management, and stakeholder communication. Digital literacy can enhance the efficiency of these tasks by providing faster, more reliable, and more accurate means of handling administrative processes. As asserted by Ogbonnaya (2020), the integration of ICT in school administration leads to better communication between school leadership and stakeholders, enhances transparency, and improves overall school governance.

However, despite the recognized benefits, many principals in Nigerian private secondary schools still struggle with digital literacy. Challenges such as inadequate access to technology, insufficient training, and resistance to change have hindered the widespread adoption of digital tools in school administration (Ogunlade, 2021). This underscores the need for research to examine the current level of digital literacy among principals in private secondary schools in Port Harcourt and how it affects their administrative effectiveness. Some of these digital literacy skills expected of principals according to Achen (2019) some digital literacy skills required by administrators are Basic ICT skills, data management and analysis, digital communication skills, cybersecurity and Use of School Management Systems (SMS). Principals must have a solid understanding of basic computer operations, including the use of word processing software,

spreadsheets, and presentation tools. These skills are essential for creating documents, managing data, and preparing reports for school administration. In terms of data management and analysis, principals need to be proficient in handling student and staff data using digital tools. This includes the ability to collect, store, analyze, and interpret data using software such as Microsoft Excel, Google Sheets, or specialized school management systems, which are vital for informed decision-making and tracking school performance (Ani, 2018).

Furthermore, competence in using digital platforms for communication, such as email, messaging apps, and video conferencing tools, is crucial for principals. Effective communication with teachers, parents, students, and external stakeholders through digital means ensures timely and efficient information dissemination. Also, for cybersecurity awareness, principals must understand the importance of data privacy and security, ensuring that school information systems are protected from cyber threats. This includes knowledge of secure passwords, data encryption, and safe online practices to protect sensitive information from unauthorized access (Demir, 2021).

Finally, familiarity with school management systems (SMS) software is essential for streamlining administrative tasks. These systems help principals manage attendance, grading, scheduling, financial records, and other key administrative functions more efficiently, enhancing the overall operational efficiency of the school. Given the central role that school principals play in ensuring the smooth operation and success of their institutions, it is imperative to explore the relationship between their digital literacy and the effectiveness of their administration. This study, therefore, seeks to investigate the extent to which digital literacy among principals in private secondary schools in Port Harcourt Metropolis contributes to effective administration, identifying the key challenges and opportunities in fostering digital competence in educational leadership.

### **Statement of the Problem**

The increasing reliance on digital technologies for school administration and management has underscored the need for principals to possess digital literacy skills. In private secondary schools, particularly in urban areas like Port Harcourt Metropolis, Rivers State, the pressure to stay competitive and deliver quality education has made the integration of digital tools an essential aspect of effective administration. Digital literacy enables principals to efficiently manage

various administrative tasks, such as record-keeping, communication with stakeholders, data analysis, and resource management. However, despite the recognized importance of digital literacy in school leadership, many principals in private secondary schools in Port Harcourt struggle to fully harness the potential of these tools.

Research indicates that a lack of digital literacy among school leaders can lead to inefficiencies in administrative processes, delayed decision-making, and inadequate communication, all of which can negatively impact the overall performance of the school (Ogunlade, 2021). Moreover, challenges such as limited access to technology, insufficient training, and resistance to change continue to hinder the effective integration of digital tools in school management. These gaps raise concerns about how well-equipped principals are to lead in the digital age and ensure the smooth operation of their schools.

Given the pivotal role that principals play in shaping the success of their schools, it is crucial to investigate the extent to which their digital literacy impacts their administrative effectiveness. Therefore, the problem that this study sought to address is the perceived relationship between principals' digital literacy and the effective administration of private secondary schools in Port Harcourt Metropolis.

### **Purpose of the Study**

The purpose of the study was to examine a relationship between principals' digital literacy and effective administration of private secondary schools in Port Harcourt metropolis, Rivers State. Specifically, the study seeks to achieve the following objectives:

1. find out the relationship between principals' basic ICT skills and effective administration of private secondary schools in Port Harcourt metropolis, Rivers State;
2. ascertain the relationship between principals' use of data management and analysis and effective administration of private secondary schools in Port Harcourt metropolis, Rivers State;
3. determine the relationship between principals' digital communication skills and effective administration of private secondary schools in Port Harcourt metropolis, Rivers State;

### **Research Questions**

The following research questions guided the study:

1. What is the relationship between principals' basic ICT skills and effective administration of private secondary schools in Port Harcourt metropolis, Rivers State?
2. What is the relationship between principals' use of data management and analysis and effective administration of private secondary schools in Port Harcourt metropolis, Rivers State?
3. What is the relationship between principals' digital communication skills and effective administration of private secondary schools in Port Harcourt metropolis, Rivers State?

### **Hypotheses**

The following null hypotheses were tested at 0.05 level of significance:

1. There is no significant relationship between principals' basic ICT skills and effective administration of private secondary schools in Port Harcourt metropolis, Rivers State.
2. There is no significant relationship between principals' use of data management and analysis and effective administration of private secondary schools in Port Harcourt metropolis, Rivers State.
3. There is no significant relationship between principals' digital communication skills and effective administration of private secondary schools in Port Harcourt metropolis, Rivers State.

### **Methodology**

This study employed correlational research design. This study was carried out in Port Harcourt Metropolis of Rivers State, Nigeria. The population of the study was 718 school administrators in government approved private secondary schools in Port Harcourt Metropolis. The sample of the study was 143 respondents comprising 103 principals in Obio/Akpor and 40 principals in private secondary schools in Port Harcourt Local Government Areas respectively. The proportionate stratified sampling technique was adopted in selecting 20% of the population of schools in Obio/Akpo LGA to arrive at 103 principals and 20% of the population of schools in Port Harcourt LGA to arrive at 40 principals.

The instruments for data collection in this study were two sets of self-designed questionnaires. The questionnaires are titled "Principals' Digital Skills Questionnaire" (QAMQ) and "Effective School Administration Questionnaire"(ESAQ). The first instrument had two sections which were

Sections “A” and “B”. Section A is designed to collect biodata from respondents while Section B had statement items drawn from the research questions of the study. The second instrument was designed to measure effective administration of private secondary schools. The instrument was designed using a 4-point summated rating scale of: Strongly Agree (SA) = 4, Agree (A) = 3, Disagree (D) = 2 and Strongly Disagree (SD) = 1. The face and content validity of the instruments were determined by three experts, one from Educational Management and two others from Measurement and Evaluation in Rivers State University. The internal consistency of the instrument was established using the Cronbach Alpha method. By this method 20 copies of the questionnaire were administered on 20 principals in private senior secondary schools in Emohua Local Government Area which is outside the study area. Reliability coefficients of 0.71, 0.70 and 0.82.

The data collected for the study were analysed using Pearson Product Moment Correlation Coefficient (PPMCC) statistics. The research questions were answered based on the value and direction of the correlation coefficient, (positive and high, positive but low, or negative and high or negative but low or moderate). Values of 0.1-0.4 were counted as low correlation, values of 0.5 were considered moderate correlation while 0.6-1.0 were considered high correlation.

Similarly, the hypotheses were tested for significance of relationship at 0.05 level of significance. This was further tested by transforming the coefficient of correlation ( $r$ ) to  $t$  in order to establish the significance or otherwise of the  $r$ - value.

## Results

**Research Question 1:** What is the relationship between principals’ basic ICT skills and effective administration of private secondary schools in Port Harcourt metropolis, Rivers State?

**Table 1: PPMC Analysis on Relationship between Principals’ Basic ICT Skills and Effective Administration of Private Secondary Schools**

Variable	N	$\sum X$	$\sum Y$	$\sum X^2$	$\sum Y^2$	$\sum XY$	r-cal	Remarks
Principals’ ICT Skills (X)	Basic 140	882.14	2037.40					

2213.01 0.88 High Positive

Effective Administration (Y)	140	987.10	3118.32
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The analyses from Table 1 revealed that the correlation value of r is 0.88. This value is high and positive which implies that there is a significant relationship between principals' basic ICT skills and effective administration of private secondary schools in Port Harcourt metropolis, Rivers State, Rivers State. In other words, this means that principals' acquisition of basic ICT skills leads to more effective administration of public senior secondary schools.

**Research Question 2:** What is the relationship between principals' use of data management and analysis and effective administration of private secondary schools in Port Harcourt metropolis, Rivers State?

**Table 2: PPMC Analysis on Relationship between Principals Use of Data Management and Analysis and Effective Administration of Public Senior Secondary Schools.**

Variable	N	$\sum X$	$\sum Y$	$\sum X^2$	$\sum Y^2$	$\sum X\sum Y$	r <sub>cal</sub>	R <sub>crit</sub>	Remarks
Data Management and Analysis (X)	140	912.02	2822.03			2786.05	0.83	0.195	High Positive
Effective Administration (Y)	140	1201.03	3123.02						

The analyses from Table 2 revealed that the correlation value of r is 0.83. This value is high and positive which implies that there is high and positive relationship between principals' use of data management and analysis and effective administration of private secondary schools in Port Harcourt metropolis, Rivers State. This implies that the adoption of data management and analysis by principals lead to more effective administration of public senior secondary schools.



**Research Question 3:** What is the relationship between principals’ digital communication skills and effective administration of private secondary schools in Port Harcourt metropolis, Rivers State?

**Table 3: PPMC Analysis on Relationship between Digital Communication Skills and Effective Administration in Private Secondary Schools**

Variable	N	$\sum X \sum Y$	$\sum X^2 \sum Y^2$	$\sum X \sum Y$	Rcal	Remarks
Digital communication skills (X)	140	850.05	2542.10	2466.10	0.85	High positive
Effective Administration(Y)	140	1058.11	3318.04			

The analyses from Table 3 revealed that the correlation value of r is 0.85. This value is high and positive which implies that there is high and positive relationship between digital communication skills and effective administration of private secondary schools in Port Harcourt metropolis, Rivers State. This indicates that the adoption of digital communication skills by principals lead to effective administration in private secondary schools.

**Test of Hypotheses**

**H<sub>01</sub>:** There is no significant relationship between principals’ basic ICT skills and effective administration of private secondary schools in Port Harcourt metropolis, Rivers State.

**Table 4: T-test Analysis between Principals’ Basic ICT Skills and Effective Administration of Privat Secondary Schools.**

Variable	N	$\sum X$	$\sum X^2 \sum Y^2$	$\sum X \sum Y$	Df	A	r <sub>cal</sub>	t <sub>cal</sub>	t <sub>crit</sub>	RMKS
		$\sum Y$	$Y^2$	$Y$						
Principals’ basic ICT skills (X)	14	882.14	2037.4							
	0		0							

			2213.0	13	0.0	0.88	26.10	1.96	Sig.
			1	8	5				Reject
									H <sub>0</sub>
Effective	14	987.10	3118.3						
Administration (Y)	0		2						

Table 4 shows Pearson correlation summary between principals' basic ICT skills and effective administration of private secondary schools in Port Harcourt Metropolis Rivers State. The analysis on the table revealed that the sum and sum of squares for principals' basic ITC knowledge are 882.14 and 2037.40 while that of effective administration are 987.10 and 3118.32 respectively. The sum of product of scores on the two variables (principals' basic ITC knowledge and effective administration) is 2213.01. The t-cal value is 26.10 which is greater than the critical t-value (1.96) at 138 degree of freedom under 0.05 level of significance. The null hypothesis of no significant relationship between principals' basic ICT skills and effective administration of private secondary schools in Port Harcourt Metropolis Rivers State was rejected. This implies that there is a positive relationship between principals' basic ICT skills and effective administration of private secondary schools.

**H<sub>02</sub>:** There is no significant relationship between principals' use of data management and analysis and effective administration of private secondary schools in Port Harcourt metropolis, Rivers State.

**Table 5: T-test Analysis between Principals' Use of Data Management and Analysis and Effective Administration of Private Secondary Schools.**

Variable	N	$\sum X$	$\sum X^2$	$\sum X \sum Y$	Df	A	$r_{cal}$	$r_{cri}$	$t_{cal}$	$t_{crit}$	RMKS
Principals' use of data management and analysis (X)	14	912.02	2822.0								
	0		3								
				2786.0	13	0.0	0.83	0.19	27.21	1.96	Sig.
				5	8	5		5			Reject

Effective	14	1201.03	3123.0
Administration (Y)	0		2

Table 5 shows Pearson correlation summary between principals' use of data management and analysis and effective administration of private secondary schools in Port Harcourt Metropolis Rivers State. The analysis on the table revealed that the sum and sum of squares for Principals' use of data management and analysis are 912.02 and 2822.03 while that of effective administration are 1201.03 and 3123.02 respectively. The sum of product of scores on the two variables (Principals' use of data management and analysis and effective administration) is 2786.05. The correlation coefficient is 0.83. However, the t-calculated value is 27.21 which is greater than the critical t- value of 1.96 at 138 degree of freedom under 0.05 level of significance. Therefore, the null hypothesis of no significant relationship between principals' use of data management and analysis and effective administration of private secondary schools in Port Harcourt Metropolis Rivers State was rejected. This implies that there is a positive relationship between principals' use of data management and analysis and effective administration of private secondary schools in Port Harcourt Metropolis Rivers State.

**H<sub>03</sub>:** There is no significant relationship between principals' digital communication skills and effective administration of private secondary schools in Port Harcourt metropolis, Rivers State.

**Table 6: T-test Summary Analysis between Principals' Digital Communication Skills and Effective Administration of Private Secondary Schools**

Variable	N	$\sum X$	$\sum X^2$	$\sum X \sum Y$	Df	A	$r_{cal}$	$r_{cri}$	$t_{cal}$	$t_{crit}$	RMKS
Principals' Digital Communication Skills (X)	14	850.05	2542.1								
	0		0								
				2466.1	13	0.0	0.85	0.19	30.12	1.96	Sig.
				0	8	5		5			Reject

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Effective	14	1058.11	3318.0
Administration(Y)	0		4

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Table 6 shows Pearson correlation summary between principals' digital communication skills and effective administration of private secondary schools in Port Harcourt Metropolis, Rivers State. This analysis in the table revealed that the sum and sum of squares for principals' digital communication skills are 850.05 and 2542.10 while that of effective administration are 1058.11 and 3318.04 respectively. The sum of product of scores on the two variables (principals' digital communication skills and effective administration) is 2466.10. The correlation coefficient is 0.85. However, the t-calculated value is 30.12 which is greater than the critical t-value of 1.96 at 138 degree of freedom under 0.05 level of significance. Therefore, the null hypothesis of no significant relationship between principals' digital communication skills and effective administration of private secondary schools in Port Harcourt Metropolis, Rivers State is rejected. This implies that there is a positive relationship between principals' digital communication skills and effective administration of private secondary schools in Port Harcourt Metropolis, Rivers State.

### **Discussion of Findings**

The finding of the study for research question one revealed that there is a high positive relationship between principals' acquisition of basic ICT skills and effective administration of private secondary schools in Port Harcourt metropolis, Rivers State. The corresponding hypothesis one revealed that there is a positive relationship between the principals' basic ICT skills and effective administration of private secondary schools in Port Harcourt metropolis, Rivers State. This is in line with the findings of Zhang and Zhang, (2024), which revealed that ICT proficiency allows principals to enhance data management, making student and staff records more accessible and reducing errors in administrative operations. The use of digital tools in scheduling, resource allocation, and performance tracking helps administrators make informed decisions, which positively impacts the school's performance and enhances administration. Similarly, the findings in a study by Mulinge, (2024) revealed that principals with strong ICT

capabilities are better at managing teacher performance and fostering a culture of continuous improvement in their schools.

The findings of the study for research question two revealed that there is a high and positive relationship between the principals' use of data management and analysis and effective administration of private secondary schools in Port Harcourt metropolis, Rivers State. The corresponding hypothesis two further revealed that there is a significant relationship between principals' use of data management and analysis and effective administration of private secondary schools in Port Harcourt metropolis, Rivers State. This is in line with the findings of Schildkamp et al. (2019) which revealed that principals who regularly engage in data-driven decision-making processes demonstrate higher levels of instructional leadership and are more successful in implementing school improvement initiatives. Dunn et al. (2021) also found that principals who are proficient in using these systems are better able to identify trends in student performance, allocate resources more effectively, and tailor instructional strategies to meet individual student needs. This data-informed approach to leadership has been shown to have a positive impact on overall school effectiveness and student achievement.

The findings of the study for research question three revealed that there is a high and positive relationship between principals' digital communication skills and effective administration of private secondary schools in Port-Harcourt metropolis, Rivers State. The corresponding hypothesis three also revealed that there is a significant relationship between the principals' digital communication skills and effective administration of private secondary schools in Port-Harcourt metropolis, Rivers State. This finding is in line with the findings of Mandinach and Gummer (2021) which revealed that effective administration in schools is largely contingent upon the principal's ability to communicate efficiently with staff, students, parents, and external stakeholders. Digital communication skills enable principals to navigate platforms such as emails, school management systems, and social media to enhance communication. Furthermore, Gürkan and Pauli (2022) emphasizes that digital tools also provide avenues for data-driven decision-making, where principals can collect, analyze, and disseminate information more efficiently, thus improving administrative decisions.

## **Conclusion**

Based on the findings of the study, it was concluded that there are strong and positive relationships between principals' acquisition of basic ICT skills, use of data management and analysis, digital communication skills and effective school administration. These findings align with existing literature, emphasizing the transformative impact of digital proficiency on school leadership, operational efficiency, and educational outcomes. As schools increasingly rely on digital tools to meet administrative and instructional needs, equipping principals with the necessary digital literacy competencies is essential for fostering accountability, decision-making, and overall school effectiveness.

### **Recommendations**

Based on the findings of the study, the following recommendations were made:

1. Education authorities and school proprietors should implement targeted training programmes to improve principals' acquisition of basic ICT skills. These programs should focus on practical applications such as managing digital records, scheduling, and using tools for performance tracking. Regular workshops and certifications in ICT proficiency should be made mandatory for all school administrators.
2. School principals should be trained in advanced data management and analysis techniques to enable data-driven decision-making. Schools should provide access to data analysis software and training on how to utilize student performance data, resource allocation metrics, and staff performance evaluations to drive school improvement initiatives.
3. Public and Private schools should invest in developing principals' digital communication skills by offering training on the use of platforms such as email, school management systems, and social media. These skills should be incorporated into professional development programmes, emphasizing the use of digital tools for effective communication with all stakeholders, including parents and external agencies.

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