



PRINCIPALS' DIGITAL LITERACY AS CORRELATE OF EFFECTIVE SECONDARY SCHOOL ADMINISTRATION IN ABIA STATE



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Abstract

The paper sought to examine principals' digital literacy as correlate of effective secondary school administration in Abia State, Nigeria. Two specific objectives, two research questions and two null hypotheses guided the study. The study employed a correlational research design. The population of the study was 1,911, made up of 248 principals and 1,663 teachers in 248 public secondary schools in Abia state. The sample of the study comprised of three hundred and thirty-one respondents (331). This consist of 43 principals and 288 teachers drawn from 43 sampled schools in the three education zones of the state. The sample size was determined using Taro Yamane formula. Two sets of questionnaires; Principals' Digital Literacy Questionnaire (PDLQ) and Effective Secondary School Administration Questionnaire (ESSAQ) were developed and used for data collection for the study. Reliability coefficients of .79 and .91 were obtained for principals' digital literacy and effective secondary school administration respectively, which indicated that the instrument was highly valid and reliable for the study. Out of the 331 copies of the two instruments administered respectively, 315 copies of each of the instruments representing approximately 95% rate of return were well-filled by the respondents and were used for data analysis. The data collected was analyzed using Pearson Product Moment correlation to answer research questions and linear regression to test the hypotheses at .05 level of significance. Findings revealed that revealed that the coefficient of relationship between principals' digital communication literacy and effective secondary school administration in Abia State was very high and positively correlated. Also, findings revealed that principals' technical literacy to a high extent relates to effective school secondary administration in Abia State. The study recommended that principals should ensure adequate and regular use of digital communications to ensure free-flow of communication to enable staff and students express themselves appropriately without bias. This would enable principals share information with staff, student and stakeholders in order to reduce unnecessary managerial burdens and rules, and ultimately to promote positive school climates, and effective school administration among others.

Keywords: *Principals' Digital Literacy, Effective Secondary School Administration.*

Introduction

Effective secondary administration is the desire and responsibility of principals. In the administration of secondary school, the principal is the executive head and very instrumental to the success or failure of the school. Little wonder why Unuigbe (2021) opined that it is the responsibility of the principal to ensure effective management and attainment of educational goals and objectives. Thus, it is safe to say that principals are administrative heads saddled with production and maintenance of standard administration of secondary education. The new millennium is filled with dramatic global

transformation in technology, education, information, economy and social activities which pose immense challenges to effective school administration.

Similarly, the world is increasingly being digitized strongly and deeply, especially in the explosive context of the industrial revolution. Like other educational system in the world, Nigerian educational system, is not left out with the determination not to miss the opportunity that the digital revolution brings with the principle of leaving no one behind. With this trend and determination, educational administrators have to live and work in a digital environment and the internet-connected world. In recent years, secondary schools in Nigeria have undergone enormous changes with the digitalization of many of its spheres at the information level, the communication level, the level of knowledge acquisition and even the level of the establishment of social relations. This implies that accessing, managing and transforming information in the school system has also changed due to digital technologies (Ayhan, 2023). To meet this challenge, principals are in a strong position to contribute significantly due to the natural close link between technologies and secondary school administration.

Correspondingly, digital literacy is the fundamental tools in today's society and play a crucial role in both personal and professional life. It seems to be the key element towards achieving institutional goals, since new technologies have a lot to offer to this world of creativity. In this regard, Connecticut State Library (2019) defined digital literacy as the capacity to effectively and critically navigate, evaluate and create information as well as communicate meaningfully across technology, language, social, cultural and intellectual barriers using a range of emerging digital technologies. In consonance to the above definition, Ezeani and Oludele (2022) defined digital literacy as the physical, psychomotor and sensory capabilities needed in handling and manipulating digital technologies for performing organizational functions in order to bring about desired results. More so, Emeasoba, Akudolu and Agbo (2022) viewed digital literacy as the use of digital technologies for communication, collaboration and professional development so as to enhance active engagement. The bottom line of the various definitions is encapsulated in the observation by Arthur (2023) who submitted that digital literacy refers to the confident and critical usage of digital technologies for information, communication and basic problem solving. In this study, the researchers defined principals' digital literacy as the capabilities of principals to fulfil specific tasks, greater interaction, high competitiveness and resource optimization through the use of digital technologies.

Subsequently, Gaytan, Ignacio and Montoya (2023) reiterated that digital literacy goes beyond its impact on administrative and operational processes. But rather it incorporates educational trends, new pedagogies and technologies for didactic purposes. In this regard, Ayhan (2023) opined that digital literacy has brought about many innovations to education and has changed standardized contents and applications. Commenting further, Kyle (2024) explained that principals must be attentive to digital changes in the environment and society to ensure that institutional goals are met. This perhaps has highlighted the need to develop digital literacy for principals. More so, the transition from the analog to the digital world in both processes and products of principals is part of their journey towards digital transformation. This scenario requires principals' proactive approach to new skills, competencies and expertise development while transforming themselves to ensure secondary schools readiness for technological revolutions in this 21st century. In this study, the researchers' attention is on some components of digital literacy such as; principals' digital communication literacy and principals' technical literacy.

Digital communication literacy according to Weinberger (2021) is defined as a fundamental skill for principals to encompass their digital ability to effectively convey information, ideas and concepts to teachers, students and other stakeholders. Nordstorm and Jarvela (2021) viewed digital communication literacy as using digital resources to plan, organize, and carry out administrative processes in the school. Supporting this view, Koyuncuoglu (2022) defined digital communication literacy as the ability of principals to effectively communicate using digital tools and technologies in an educational context.

Relatively, Erstad (2020) observed that digital communication literacy enables new forms of collaboration and communication and influences principals, teachers, students and stakeholders in many

ways such as: a participatory culture, access to information, opportunities for communication, and content production. The development of e-mail, chat, sms and online communities has created new conditions for communication and communicative competence as a skill for the 21 century. Kalinga and Ndibalema (2023) added that principals with digital communication literacy should be proficient in using various online communication tools such as email, zoom meeting, whatsapp, telegram and other messaging platforms, discussion forums and video conferencing tools to interact and collaborate with teachers, students and stakeholders. Corroborating this assertion, Bevan (2024) affirmed that principals should be able to create engaging and informative digital platform to effectively convey information to staff and students.

Conversely, principals' technical literacy encompasses their proficiency and ability to effectively utilize technology and other educational tools in school administration (Gigli, 2022). Redddin (2024) viewed technical literacy as capabilities to continuously, effectively, and ethically access, interpret, act on, and communicate multiple types of data from state, local, classroom, and other sources to improve educational outcomes in a manner appropriate to educators' professional roles and responsibilities. Macion (2022) pointed out that technical literacy include; using and installing a variety of software, making simple connections of computers, installing computer peripherals, creating multimedia presentations using scanners, creating multimedia presentations using digital cameras, using computers for word processing, website designing and maintenance and using computers for accessing electronic mail.

Additionally, Murphey (2022) reported that technical competent principals are skilled at utilizing educational technologies such as online platforms, multimedia resources and interactive tools. This includes using tools for collaboration, virtual laboratories and library, simulations and other interactive methods to improve school administration. Corroborating this assertion, Reynolds (2024) posited that technically competent principals are adept at explaining complex concepts in a clear and understandable way, knowledgeable about the latest advancements in educational trends and can effectively manage students' data digitally. Similarly, Dutta and Nessa (2022) in their study found out that administrators have basic knowledge about technical literacy. But they are not well versed about the new technological skills like weblogs, website design, Learning Management System (LMS), smart classroom, cloud based computing, courseware designing among others. Therefore, refresher or orientation courses must be regularly conducted for all principals to learn how to integrate new technologies in an effective way in school administration (Dutta & Nessa, 2022).

Notably, the Nigerian education system has made significant progress in fostering digital literacy in schools. However, further efforts ought to be made to address the digital literacy gaps among principals in public secondary schools in Abia State. This is to ensure that no one is left behind in the pursuit of the nation's digital economic achievements. Although previous empirical studies have assessed the challenges faced by teachers and students in adapting to a new educational landscape during and after the pandemic era, one of the main research gaps yet to be addressed to the best of the researchers' knowledge is examining principals' digital literacy as correlate of effective secondary school administration in Abia State. It is against this backdrop that the sought to investigate principals' digital literacy as correlate of effective secondary school administration in Abia State.

Statement of the problem

Digital literacy is the ability to fulfil specific tasks, greater interaction, high competitiveness and resource optimization through the use of digital technologies. With the advancement in digital technologies, principals' are expected to be digitally literate and competent in order to bring about change and preparing both teachers and students to embrace digital changes in the current educational trend. Despite the prevailing world trend where digital technologies and innovations remain competitive globally, it is most unfortunate that most principals in public secondary schools in Abia State, Nigeria, are faced with the challenge of adopting digital technologies in improving school administration.

Regrettably, the researchers observed that there is a public outcry of principals' inability to use digital devices or technologies for school administration which is suspected to be as a result of their

poor digital literacy. This has resulted to poor file management, poor communication channels, poor instructional delivery practices, inefficient resources management, among others. It appears that poor digital literacy of principals' seems to have caused analog mode of school administration in the 21st century world of digitalization. This situation is worrisome and needs urgent attention. The statement of the problem put in question form is: What is the extent of relationship between principals' digital literacy and effective secondary school administration in Abia State?

Purpose of the study

The purpose of this study was to examine principals' digital literacy as correlate of effective secondary school administration in Abia State, Nigeria. Specifically, the study sought to:

Ascertain the extent to which principals' digital communication literacy relate to effective secondary school administration in Abia State.

Determine the extent to which principals' technical literacy relate to effective secondary school administration in Abia State.

Research questions

The following research questions were answered in this study:

What is the extent to which principals' digital communication literacy relate to effective secondary school administration in Abia State?

To what extent does principals' technical literacy relate to effective secondary school administration in Abia State?

Hypotheses

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

H0₁: There is no significant relationship between principals' digital communication literacy and effective secondary school administration in Abia State.

H0₂: There is no significant relationship between principals' technical literacy and effective secondary school administration in Abia State.

Methodology

The study employed a correlational survey research design. The population of the study was 1,911, made up of 248 principals and 1,663 teachers in 248 public secondary schools in Abia state. (Abia State Secondary Education Management Board, 2023). The sample of the study was three hundred and thirty-one respondents (331). This consisted of 43 principals and 288 teachers drawn from 43 sampled schools in the three education zones of the state. The sample size was determined using Taro Yamane formula. The sample was drawn using multistage procedure. Two sets of questionnaires; Principals' Digital Literacy Questionnaire (PDLQ) and Effective Secondary School Administration Questionnaire (ESSAQ) were developed and used for data collection for the study. Reliability coefficients of .79 and .91 were obtained for principals' digital literacy and Effective Secondary School Administration respectively, which indicated that the instrument was highly valid and reliable for the study. Out of the 331 copies of the two instruments administered respectively, 315 copies of each of the instruments representing approximately 95% rate of return were well-filled by the respondents and were used for data analysis. The data collected was analyzed using Pearson Product Moment correlation to answer research questions and linear regression to test the hypotheses at .05 level of significance. The strength of relationship of the variables was decided or interpreted using Rumsey (2016) correlation coefficient scale. The extent or strength of relationship of the variables was decided or interpreted using Rumsey (2016) correlation coefficient scale, which stated that: $\pm .70$ to 1.00 = Strong/High Extent Relationship, $\pm .40$ to 0.69 = Moderate/Medium Extent Relationship and $\pm .00$ to 0.39 = No correlation/Weak/Low Extent Relationship. To this end, Rumsey (2016) asserted that correlation coefficients can range from -1.00 to $+1.00$ with positive numbers used to identify a positive relationship and negative numbers being used to identify a negative relationship while no linear association is indicated with a correlation coefficient of 0.00 .



Results

Research question 1:

What is the extent to which digital communication literacy relate to effective secondary school administration in Abia State?

Table 1: Correlation matrix of relationship between principals' digital communication literacy and effective school secondary administration

		PDCL	ESA
PDCL	Pearson	1	.874
	N	315	315
	R ²	(0.764)	
		76.4%	
PDCL	Pearson	.874	1
	N	315	315

PDCL= Principals' Digital Communication Literacy, ESA= Effective Secondary School Administration

Data in table 1 showed a correlation (r) value of .874 which is positive and within the coefficient limit of range of 0.80 and above indicating very high extent relationship. This result showed that to a very high extent principals' digital communication literacy relates to effective secondary school administration. The coefficient of determination (R²) of 0.764 indicated that 76.4% of effective school administration in Abia State could be accounted for by principals' digital communication literacy.

Hypothesis 1

There is no significant relationship between principals' digital communication literacy and effective secondary school administration in Abia State.

Data for testing hypothesis 1 are presented in table 2:

Table 2: Regression analysis of extent of relationship between principals' digital communication literacy and effective school secondary administration

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	5204.133	1	5204.133	88.205	.001 ^b
Residual	8916.509	314	28.39		
Total	14120.642	315			

Data in table 2 reveals a significant probability (P) - value of 0.001 which is less than the alpha value of 0.05. Since the P-value is less than 0.05 alpha level, the hypothesis of no significant relationship was rejected and the alternate upheld. Therefore, there is a significant relationship between principals' digital communication literacy and effective secondary school administration in Abia State.

Research Question 2

To what extent does principals' technical literacy relate to effective secondary school administration in Abia State?

Data for answering research question 2 are presented in table 3:

Table 3: Correlation matrix of relationship between principals' technical literacy relate to effective school secondary administration

		PTL	ESA
PTL	Pearson	1	.789
	N	315	315
	R ²	(0.623)	
		62.3%	
	Pearson	.789	1
	N	315	315

PTL= Principals' Technical Literacy, ESA= Effective Secondary School Administration

The data in table 3 revealed a correlation (r) value of .789 which is positive and within the coefficient limit of range of 0.60 to 0.80 indicating high extent relationship. This result showed that principals' technical literacy to a high extent, relates to effective secondary school administration. The coefficient of determination (R²) of 0.623 indicates that 62.3% of effective secondary school administration in Abia State could be accounted for by principals' technical literacy.

Hypothesis 2

There is no significant relationship between principals' technical literacy and effective secondary school administration in Abia State.

Data for testing hypothesis 2 are presented in table 4

Table 4: Regression analysis of the extent of relationship between principals' technical literacy and effective school secondary administration

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	6075.591	1	6075.591	219.185	.000 ^b
Residual	8703.609	314	27.719		
Total	14779.20	315			

Data in table 4 showed a probability (P) - value of 0.000 which is less than the alpha value of 0.05. Since the P-value is less than 0.05 alpha level, the hypothesis of no significant relationship was rejected. Therefore, there is a significant relationship between principals' technical literacy and effective secondary school administration in Abia State.

Discussion of findings

The findings in research question 1 revealed that the coefficient of relationship between principals' digital communication literacy and effective secondary school administration in Abia State was very high and positively correlated. Similarly, the corresponding hypothesis indicated that principals' digital communication significantly relate to effective school administration. The finding of the study is in tandem with Erstad (2020) who observed that digital communication literacy enables new forms of collaboration and communication and influences principals, teachers, students and stakeholders in many ways such as: a participatory culture, access to information, opportunities for communication, and content production. This finding was in consonance with Kyle (2024) who explained that principals must be attentive to digital changes in the environment and society to ensure that institutional goals are met. In agreement with this findings, Bevan (2024) affirmed that principals should be able to create engaging and informative digital platform to effectively convey information to staff and students.

The findings in research question 2 revealed that principals' technical literacy to a high extent relates to effective school secondary administration in Abia State. More so, the corresponding

hypothesis affirmed that principals' technical literacy significantly relate to effective secondary school administration in Abia State. The finding of the study is in consonance with the findings of Reynolds (2024) who posited that technically competent principals are adept at explaining complex concepts in a clear and understandable way, knowledgeable about the latest advancements in educational trends and can effectively manage students' data digitally. The finding is in agreement with the findings of Dutta and Nessa (2022) who in their study found out that administrators have basic knowledge about technical literacy. But they are not well versed about the new technological skills like weblogs, website design, Learning Management System (LMS), smart classroom, cloud based computing, courseware designing among others. As such, refresher or orientation courses must be regularly conducted for all principals to learn how to integrate new technologies in an effective way in school administration.

Conclusion

It is however expected that principals' digital literacy such as digital communications literacy and technical literacy would promote effective secondary school administration in Abia State. Thus, principals' should incorporate educational trends, new pedagogies and technologies for didactic purposes that would promote effective school administration.

Recommendations

Based on the findings and conclusions of the study, the following recommendations were made: Principals should ensure adequate and regular use of digital communications to ensure free-flow of communication to enable staff and students express themselves appropriately without bias. This would enable principals share information with staff, student and stakeholders in order to reduce unnecessary managerial burdens and rules, and ultimately to promote positive school climates, and effective school administration.

Principals should be technically competent and proficient in the use of technological tools for effective secondary school management.

Ministry of Education should sponsor principals to participate in conferences, seminars and workshops on digital literacy. This would keep principals abreast of the latest trends in digitalization and the use of digital technologies for effective school administration.

References

- Arthur, T. (2023). *Digital skills of administrators: A systematic approach*. Greenwich: Longpin Publishers.
- Ayhan, Y. (2023). Impact of technological tools on organizational performance in Kenya. *Journal of Computer Science*, 3(2), 71-84.
- Bevan, M. T. (2024). A method of phenomenological interviewing. *Qualitative Health Research*, 34(1), 136–144.
- Connecticut State Library, (2019). *Digital literacy*. <https://libguides.etstatelibrary.org>.
- Dutta, A. & Nessa. N. (2022). Technological competencies of teachers in teaching learning process and the librarians' role to enhance technological skills. *Library Philosophy and Practice*, 14(1), 77-89.
- Eneasoba, N. C., Akudolu, C. A. & Agbo, R. C. (2022). Utilization of digital skills for teaching and learning of Business Education in public Universities in South South, Nigeria. *Nigerian Journal of Association of Business Educators of Nigeria*, 9(1), 79-90.
- Erstad, J. (2020). Information and communication technology strategies: A way forward. *Policy and Administration Research*, 10 (7), 124 – 134.
- Ezeani, N. S. & Oludele, L. y. (2022). Digital competencies as correlates of secretarial personnel efficiency in Osun State Polytechnic, Iree. *Nigerian Journal of Association of Business Educators of Nigeria*, 9(1), 55-67.
- Gaytan, S.F., Ignacio, A. and Montoya, M. S. R. (2023). Digital transformation and digital literacy in higher education institutions through a systematic study of literature. *Journal of Humanities and Social Sciences Communication*, 14(3), 41-52.



- Gigli, S. T. (2022). *Effective digital communications in organizations*. New Delhi: Purkus Press.
- Kalinga, T. & Ndibalema, P. (2023). Teachers' technological competencies in enhancing teaching and learning in secondary schools in Tanzania. *Educational Technology Quarterly* 2(1), 1-15.
- Kalinga, T. & Ndibalema, P. (2023). Teachers' technological competencies in enhancing teaching and learning in secondary schools in Tanzania. *Educational Technology Quarterly* 2(1), 1-15.
- Koyuncuoglu, T. (2022). Impact of artificial intelligence in classroom settings. *Turkish Journal of Education*, 7(2), 112-121.
- Macion, E. P. (2022). Technological Competence of The Information Communication Technology (ICT) Trained Teachers and Their Teaching Performance. *International Journal of Advanced Multidisciplinary Studies*, 1(1), 123-136.
- Murphey. R. O. (2022). The Effects of technologies on successful service quality implementation: A South African Perspective. *Journal of Arts and Humanities*, 1 (1), 49-59.
- Nordstorm, A. L. & Jarvela, P. (2021). *Digitalization and innovations in organizations*. Manchester: MIT Publishers.
- Reddin, O. L. (2024). The relation between 21st-century skills and digital skills: A systematic literature review. *Computers in Human Behaviours*, 72, 577-588.
- Weinberger, E. R. (2021). Promoting teachers digital competencies in schools. *International Journal of Research Publication and Reviews*, 8(3), 3422-3432.