



DIGITAL DIVIDE AND ITS IMPACT ON EDUCATIONAL PLANNING AND SECONDARY SCHOOL ADMINISTRATION IN RIVERS STATE



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Abstract

The digital divide, characterized by disparities in access to digital technologies and the internet, has become a significant barrier to effective educational planning and administration in developing regions, including Rivers State, Nigeria. This empirical study investigates the extent to which the digital divide influences educational planning and secondary school in Rivers State, guided by two objectives, research questions and hypotheses. This study was anchored on the Technological Determinism Theory, which postulates that technological changes fundamentally shape societal structures and human behaviors, thereby framing the analysis of how technological inequalities impact educational outcomes. Employing a descriptive survey research design, the study sampled 297 principals and educational planners from the Ministry of Education using census sampling technique. Data were gathered using two validated structured questionnaires Digital Divide Impact Questionnaire (DDIQ) and Educational Planning Questionnaire (EPQ), with reliability coefficients of DDIQ = 0.88, and EPQ = 0.84. A total of 286 valid responses were retrieved and used for the analysis of the study, using mean score and standard deviation to answer the research questions and Pearson's Product Moment Correlation to test the hypotheses at the 0.05 level of significance. The findings revealed among others that significant disparities in digital access adversely affect administrative and planning purposes, educational planning activities, data management, staff scheduling and resource allocation, and use of digital presentations or tools, among others. The study also revealed that there is no significant relationship between access to digital tools and educational planning in secondary schools in Rivers State. The study recommended among others that the Rivers State Ministry of Education should prioritize the provision of internet-enabled devices and broadband access in secondary schools.

Keywords: Digital Divide, Impact, Educational Planning, School Administration, Digital Technologies.

Introduction

Education is a fundamental driver of social progress, economic development, and human capital advancement. In recent decades, digital technologies have revolutionized the educational sector, enhancing the efficiency of teaching, learning, and administrative practices (Demissie et al., 2022). However, the emergence of the digital divide—the unequal access to and use of information and communication technologies (ICTs)—has presented new challenges, particularly for developing countries like Nigeria. In this context, the disparity in digital literacy and technological infrastructure has become a key constraint to achieving quality education and effective educational planning.

In Nigeria, educational planning and administration have historically struggled with a range of systemic challenges including poor data management, under-resourced infrastructure, and inadequate policy implementation (Ololube, 2013). With its growing reach, the phrase "digital divide," which was originally used to describe people who do not have equitable access to digital technology, is now beginning to be recognized as a determining factor for digital competencies (Owens-Ibie & Aondover, 2024). With the growing global emphasis on digital transformation, the ability of educational systems to integrate ICT into planning processes has become a litmus test for sustainable development in the education sector (Iivari et al., 2020). Unfortunately, the digital divide exacerbates existing inequities, undermining the potential benefits of digital tools in planning and managing education.

Rivers State, located in the South-South geopolitical zone of Nigeria, is among the country's most educationally vibrant regions. It boasts a high concentration of secondary schools and a diversified educational structure. Despite these advantages, the region faces persistent digital challenges, including inadequate access to computers, limited internet penetration, erratic power supply, and a lack of digital competencies among educators and school administrators (Aondover et al., 2023). These challenges impair the functionality and responsiveness of school systems to data-driven educational planning.

Ololube (2009) cited in Osiesi (2023) defined educational planning refers to the systematic arrangement of actions and resources toward achieving educational goals. It encompasses decision-making, resource allocation, staff development, school mapping, and performance evaluation. Secondary school administration, on the other hand, involves the organization and coordination of all school activities aimed at achieving instructional and non-instructional goals (Yildiz, 2022). The increasing complexity of educational systems necessitates the use of ICT tools for data analysis, student information management, communication, monitoring, and decision-making (Aydin, 2021). Hence, the absence or limited access to digital resources poses a serious threat to school performance and policy effectiveness.

The digital divide is not merely a technological gap—it reflects broader socio-economic disparities that affect institutional capacity, staff training, and access to educational opportunities. Research shows that the absence of ICT integration into educational planning can lead to poor decision-making, reduced teacher effectiveness, and inefficient administration (Jamil, 2021; Aondover et al., 2022). This study thus explores the extent to which the digital divide affects the educational planning process and the quality of administration in secondary schools in Rivers State.

Moreover, the current global education landscape, amplified by the impact of the COVID-19 pandemic, further highlights the urgent need to bridge the digital divide. Schools with access to digital resources adapted quickly to online learning and administrative digitalization, while those without were left behind. In Nigeria, the post-pandemic period has further exposed the gaps in digital preparedness, especially within the public school system.

This study is guided by the need to understand and address these disparities from an empirical standpoint. It explores how limited ICT infrastructure, digital illiteracy, and policy gaps influence school planning, management practices, and educational outcomes in secondary schools (Manco-Chavez et al., 2020). The research is framed by the Technological Determinism Theory, which offers a theoretical lens through which to understand the transformative power of technology—and its absence—on social systems, including education.

Empirical evidence on how the digital divide affects educational planning and school administration in Nigeria remains limited. While some studies have addressed ICT use in teaching and learning, fewer have explored the administrative dimension of digital exclusion, especially in secondary schools. There is also a scarcity of location-specific data that would assist stakeholders in tailoring interventions to the unique challenges faced by schools in Rivers State. This study, therefore, seeks to bridge this knowledge gap by providing empirical insights into the nature, extent, and impact of the digital divide on secondary school administration and educational planning in Rivers State.

Statement of the Problem

Over the last decade, the Nigerian education system can be said to have witnessed a global push towards digitalization. This shift has emphasized the importance of technology in achieving equitable, efficient, and inclusive education. In secondary school administration, digital tools ought to play vital roles in school mapping, curriculum development, record keeping, student performance tracking, and resource allocation. In educational planning, real-time data and analytical tools are essential for forecasting, budgeting, and policy implementation. However, the reality in Rivers State, like many other parts of Nigeria, is that a considerable number of schools and administrators still lack adequate access to digital technologies. The core problem lies in the digital divide—defined as the socio-economic and geographic inequalities in access to information and communication technologies. In many parts of Rivers State, especially in rural and riverine areas, school administrators and planners operate in environments with poor internet connectivity, irregular electricity supply, limited access to computer systems, and low digital literacy. These disparities impede the planning processes, compromise the implementation of policies, and reduce the efficiency of administrative operations.

Although the Nigerian government has made commendable efforts toward ICT integration in education through policies such as the National Policy on ICT in Education, actual implementation remains inconsistent and uneven. Many secondary school principals still rely on manual methods of data collection, budgeting, communication, and student record keeping. This not only slows down administrative tasks but also increases the chances of errors, limits information dissemination, and hinders data-driven decision-making. Additionally, most secondary school administrators and education planners in Rivers State have not received adequate training in the use of modern ICT tools. There is also a dearth of digital infrastructure such as smart boards, administrative software, e-libraries, and reliable data storage systems. Consequently, educational planning is often based on outdated information or poorly organized records, leading to ineffective resource distribution, delayed responses to educational needs, and misalignment between plans and actual school needs.

This digital disparity becomes even more alarming considering the high expectations placed on educational administrators in the 21st century. As global standards evolve, schools are expected to function in a digitally connected environment where students, teachers, and administrators can seamlessly interact through various platforms. The lack of digital integration in school administration creates a gap between educational policy and practice and between urban and rural institutions. The ripple effects of this digital divide include poor stakeholder engagement, uncoordinated school development initiatives, lack of transparency in school governance, and inefficient monitoring and evaluation mechanisms. In essence, while ICT holds the potential to transform educational planning and secondary school administration, the persistent digital divide in Rivers State stifles this potential and threatens the realization of Sustainable Development Goal 4—quality education.

Objectives of the Study

The main objective of this study was to investigate the impact of the digital divide on educational planning and secondary school administration in Rivers State. The specific objectives were to:

1. Determine the extent to which access to digital tools influences educational planning in secondary schools in Rivers State.
2. Evaluate the challenges posed by the digital divide, and how they impacted educational planning in secondary schools in Rivers State.

Research Questions

To guide the investigation, the following research questions are posed:

1. How does access to digital tools influence educational planning in secondary schools in Rivers State?
2. What are the challenges posed by the digital divide and how they impact educational planning in secondary schools in Rivers State?

Hypotheses

The following null hypotheses were formulated for the study:

H₀₁: There is no significant relationship between access to digital tools and educational planning in secondary schools in Rivers State.

H₀₂: There is no significant relationship between the challenges posed by digital and educational planning in secondary schools in Rivers State.

Literature Review

Theoretical Background

This study is underpinned by the Technological Determinism Theory, propounded by Marshall McLuhan in 1964. The theory posits that technology is the primary driver of societal change, shaping how individuals think, act, and organize themselves. McLuhan asserted that the medium through which information is conveyed influences society more than the content itself.

In educational contexts, technological determinism suggests that access to digital tools and resources can transform how educational systems are managed and how learning is delivered. Scholars like Castells (2000) and Warschauer (2003) expanded on this theory, arguing that unequal access to technology leads to unequal access to information, which then reinforces socio-economic inequalities. In Nigeria, Okwudishu (2015) applied the theory to study ICT use in rural schools and found that technological inaccessibility impedes institutional efficiency and learning outcomes.

The relevance of this theory to the current study lies in its emphasis on technology as a transformative force. It frames the digital divide not just as a technical problem, but as a structural determinant of educational inequity. By applying this theory, the study underscores how disparities in digital access influence administrative behavior, planning processes, and educational outcomes.

Conceptual Review

A. The Digital Divide

The term "digital divide" describes the difference in access to information and communication technology (ICT) between those who have sufficient access and those who have inadequate or no access (Aondover et al., 2023). The digital divide refers to the disparity between individuals, groups, and institutions in terms of access to, use of, and competence with digital technologies (UNESCO, 2020). This divide is multifaceted and often categorized into three dimensions:

1. **Access Divide** – Differences in access to internet connectivity, computers, smartphones, and other digital tools.
2. **Use Divide** – Inequalities in the frequency and quality of ICT usage, often influenced by socio-economic or geographic factors.
3. **Competence Divide** – Gaps in digital skills and technological literacy that affect the ability to effectively use ICT tools.

According to some academics, the digital divide is a major issue for social justice in the twenty-first century. They have used the term "digital poverty" to refer to this situation (Setthasuravich & Kato, 2020). ICT is also thought to be one of the most effective instruments for achieving the Sustainable Development Goals (SDGs), an initiative started by the UN. Its efficient application has been highlighted as a way to contribute to the targets of the SDGs, especially Goal 10: "Reduced Inequalities" (United Nations, 2020). The digital divide is driven by factors such as income level, urban-rural disparities, infrastructure availability, government policies, and institutional readiness. In Nigeria, especially in rural regions of Rivers State, limited access to electricity, affordable internet, and ICT infrastructure has worsened digital exclusion.

B. Educational Planning

Educational planning refers to the process of setting goals, allocating resources, and designing strategies to achieve quality education. It includes school mapping, budgeting, staff training, and data-driven decision-making (Osiesi, 2020). The quality of the school, which is a reflection of the general

performance of the instructors, pupils, and school administrators, is determined by the educational planning (Ololube & Kpolovie, 2013). Educational planners regulate and determine the extent to which educational resources and duties can be distributed among individuals and groups (Chance & Williams, 2015). Moreover, planning provides members of an educational institution with direction and assistance for outputs and service delivery (McNamara, 2016). Digital tools play a pivotal role in modern educational planning, enabling planners to gather, analyze, and forecast data efficiently. When planning is driven by accurate and timely data—enabled by ICT—it becomes more responsive to educational demands. The absence of these tools often results in inefficient policies, poor forecasting, and misallocation of resources.

C. Secondary School Administration

Secondary school administration involves the coordination of teaching, personnel, curriculum, and student affairs to achieve educational objectives. Effective administration relies on tools for communication, data management, record keeping, and performance evaluation. In a digital environment, administrators can use Learning Management Systems (LMS), Education Management Information Systems (EMIS), and administrative software for smoother school operations. The digital divide undermines these opportunities by constraining technological access and administrator competence (Gregory & Jegede, 2021).

To address the escalating issues with underfunding, inadequate infrastructure, inadequate teachers, overcrowding in classes, poor monitoring and supervision, poor school administration, corruption, insecurity, unstable educational policies, political interference and instability, and lack of effective planning, the Nigerian educational system needs regular and standard planning and management processes (Gregory & Jegede, 2021). Government and stakeholders' oriented and sponsored projects and intervention programmes are prematurely aborted or abandoned because of the weak or non-existing planning and administration apparatus in place.

Empirical Review

Several empirical studies have addressed the intersection of ICT, digital divide, and educational management, offering valuable insights for this study.

Vitalis et al. (2025) conducted a study examining the digital divide in Nigeria with a focus on media-related disparities. The researchers highlighted how unequal access to digital platforms, technologies, and content affects information dissemination, civic engagement, and media usage in the country. Utilizing the Diffusion of Innovation Theory, the study underscored that despite an increase in mobile phone penetration, a significant segment of the population—especially individuals in rural areas and the elderly—still lacks adequate digital literacy skills. This gap limits their ability to engage with online educational content, news platforms, and digital public services. The authors emphasized that digital illiteracy continues to be a critical obstacle to inclusive access to information and participation in socio-political processes. They concluded that unless Nigeria addresses the interconnected challenges of infrastructure deficits, economic barriers, and skill shortages, the digital divide—particularly within the media context—will continue to hinder social inclusion and educational equity.

Okocha and Edafewotu (2022) conducted a study to explore the nature of the digital divide in Nigeria and investigate potential strategies for addressing it. Utilizing a qualitative research design anchored in the Diffusion of Innovation theory, they collected data through focused group discussions. A purposive sampling method was used to select 30 participants representing Nigeria's six geo-political zones, and the discussions were held over a three-week period. The findings revealed that disparities in digital access are largely driven by poverty and uneven infrastructure distribution, especially between rural and urban areas. Additionally, the study identified the digital divide as a politically and institutionally reinforced issue. The researchers emphasized that addressing this divide requires a comprehensive and inclusive strategy aimed at fostering equitable and sustainable socio-economic development. They concluded that bridging the digital gap is essential for Nigeria to keep pace with global digital trends and to reduce internal and continental disparities in digital access and usage.

Methodology

The research design used to carry out the study was a descriptive survey research design. The study's population consisted of 297 respondents. It comprised of 247 principals and 50 educational planners (including officials from the Ministry of Education) in Rivers State (Rivers State Senior Secondary Schools Board, 2023/2024). The sample size consisted of 297 respondents, since the entire population was small and manageable. The technique of census sampling was employed.

Two questionnaires designed by the researcher were used for data collection. They include the Digital Divide Impact Questionnaire (DDIQ) and Educational Planning Questionnaire (EPQ). The 20-item and 10-item questionnaire respectively were rated on a 4-point Likert scale ranging from Strongly Agree (SA) = 4, to Strongly Disagree (SD) = 1; with a criterion mean of 2.5. Face and content validity were established by experts in Educational Management and Measurement and Evaluation. The instrument's reliability was assessed using the Cronbach's Alpha method, yielding reliability coefficients of DDIQ = 0.88, and EPQ = 0.84.

The questionnaires were administered physically to sampled schools and education offices, with the help of trained research assistants. A total of 286 valid responses were retrieved, giving a response rate of **96.30%**. The research questions were answered using the mean score and standard deviation, and the hypotheses were tested at a significance level of 0.05 using the Pearson Product Moment Correlation.

Results

Research Question 1: How does access to digital tools influence educational planning in secondary schools in Rivers State?

Table 1: Mean and std. dev. of how the access to digital tools influence educational planning in secondary schools in Rivers State

S/N	Items	Respondents (n=286)		
		$\bar{x}$	SD	Remark
.1	My school has access to computers for administrative and planning purposes	2.15	0.95	Disagree
.2	Internet access is readily available for educational planning activities in my school	2.01	0.91	Disagree
.3	I use digital tools to collect and manage student data efficiently	2.30	0.97	Disagree
.4	Access to digital tools helps in making informed decisions during school planning	3.37	0.66	Agree
.5	Digital tools are used for staff scheduling and resource allocation in my school	2.06	0.95	Disagree
.6	The availability of ICT enhances my ability to monitor school operations	2.04	0.96	Disagree
.7	Access to educational software improves lesson planning and curriculum review	2.96	0.97	Agree
.8	Educational planning meetings often involve the use of digital presentations or tools	2.29	1.05	Disagree
.9	I regularly access online resources for school planning purposes	2.05	0.93	Disagree
.10	The lack of digital tools in my school negatively affects educational planning	3.33	0.62	Agree
Grand Mean		2.46		

Criterion Mean = 2.5, Mean: 1.0-2.49 = Disagreed, 2.5-4.00 = Agreed.

Table 1 shows how the access to digital tools influences educational planning in secondary schools in Rivers State. The result revealed that majority of the respondents agreed to items 4, 7, and 10

having mean scores that are equal to or greater than the mean criterion (2.50). On the other hand, majority of the respondents disagreed to items 1-3, 5, 6, 8, & 9, having mean scores that are less than the mean criterion (2.50). The grand mean of 2.46 is an indication that majority of the respondents do not have adequate access to digital tools, which may have had adverse influence on the educational planning in secondary schools in Rivers State.

Research Question 2: What are the challenges posed by the digital divide and how they impacts educational planning in secondary schools in Rivers State?

Table 2: Mean and std. dev. of the challenges posed by the digital divide and how they impacts educational planning in secondary schools in Rivers State

S/N	Items	Respondents (n=286)		
		$\bar{x}$	SD	Remark
.11	Inadequate ICT infrastructure limits our ability to plan effectively in my school	3.14	0.60	Agree
.12	Poor internet connectivity affects data reporting and decision-making	2.88	0.84	Agree
.13	Lack of power supply is a major barrier to using digital tools for planning	3.04	0.93	Agree
.14	Many school administrators lack the digital literacy needed for effective planning	3.47	0.67	Agree
.15	Budgetary constraints hinder the acquisition of necessary digital tools.	3.00	0.79	Agree
.16	Policy gaps contribute to unequal access to digital resources in schools	3.12	0.70	Agree
.17	Teachers are not adequately trained to use ICT for planning purposes	2.98	0.67	Agree
.18	There is a wide gap between urban and rural schools in terms of digital access	3.03	0.56	Agree
.19	The digital divide leads to delayed implementation of school improvement plans	3.36	0.71	Agree
.20	Government support for bridging the digital divide in education is insufficient	3.30	0.59	Agree
Grand Mean		3.13		

Criterion Mean = 2.5, Mean: 1.0-2.49 = Disagreed, 2.5-4.00= Agreed.

Table 2 shows the challenges posed by the digital divide and how they impacts educational planning in secondary schools in Rivers State. The result revealed that majority of the respondents agreed to items 11- 20 having mean scores that are equal to or greater than the mean criterion (2.50). The grand mean of 3.13 is an indication that majority of the respondents faced substantial challenges posed by the digital divide and have adverse impacts on the educational planning in secondary schools in Rivers State.

Hypothesis 1: There is no significant relationship between access to digital tools and educational planning in secondary schools in Rivers State.

Table 3: Summary of PPMC analysis on the relationship between access to digital tools and educational planning in secondary schools in Rivers State

Correlations

		Access to Digital tools	Educational Planning
Access to Digital tools	Pearson Correlation	1	0.05
	Sig. (2-tailed)		0.43
	n	286	286
Educational Planning	Pearson Correlation	0.05	1
	Sig. (2-tailed)	0.43	
	n	286	286

The result of Table 3 show that there is no significant relationship between access to digital tools and educational planning in secondary schools in Rivers State ($r = 0.05$, $p > 0.05$). Since the p-value of the correlation analysis is greater than the alpha level of 0.05, thus hypothesis one is retained at the 0.05 level of significance.

Hypothesis 2: There is no significant relationship between the challenges posed by digital and educational planning in secondary schools in Rivers State.

Table 4: Summary of PPMC analysis on the relationship between the challenges posed by digital and educational planning in secondary schools in Rivers State

Correlations

		Challenges	Educational Planning
Challenges	Pearson Correlation	1	0.75*
	Sig. (2-tailed)		0.00
	n	286	286
Educational Planning	Pearson Correlation	0.75*	1
	Sig. (2-tailed)	0.00	
	n	286	286

*. Correlation is significant at the 0.05 level (2-tailed).

The result of Table 4 show that there is significant relationship between the challenges posed by digital and educational planning in secondary schools in Rivers State ($r = 0.75$, $p < 0.05$). Since the p-value of the correlation analysis is less than the alpha level of 0.05, thus hypothesis two is retained at the 0.05 level of significance.

Discussion of Findings

This study investigated the impact of the digital divide on educational planning and secondary school administration in Rivers State. The result from research question one revealed that majority of the respondents do not have adequate access to digital tools, which may have had adverse influence on the educational planning in secondary schools in Rivers State. The result shows that access to digital tools plays a vital role in improving educational planning. Furthermore, the result of hypothesis one revealed that there is no significant relationship between access to digital tools and educational planning in secondary schools in Rivers State. These are consistent with the study by Vitalis et al. (2025), which revealed that despite an increase in mobile phone penetration, a significant segment of the population—especially individuals in rural areas and the elderly—still lacks adequate digital literacy skills. This gap limits their ability to engage with online educational content, news platforms, and digital public services.

The result from research question two revealed that majority of the respondents faced substantial challenges posed by the digital divide and has adverse impact on the educational planning in secondary schools in Rivers State. The result shows that access to digital tools plays a vital role in improving educational planning. Furthermore, the result of hypothesis two revealed that there is significant relationship between the challenges posed by digital and educational planning in secondary schools in Rivers State. These are consistent with the study by Okocha and Edafewotu (2022), which revealed that disparities in digital access are largely driven by poverty and uneven infrastructure distribution, especially between rural and urban areas. Additionally, the study identified the digital divide as a politically and institutionally reinforced issue.

Conclusion

The digital divide remains a fundamental barrier to achieving efficient educational planning and secondary school administration in Rivers State. This study established that disparities in digital access, infrastructure, and digital competence among educational planners and administrators significantly affect their capacity to carry out effective planning and management functions. The results underscore the urgent need for a holistic digital transformation in the educational sector of Rivers State.

Closing the digital divide is not merely a technological upgrade—it is a strategic imperative for improving school performance, policy effectiveness, and equity in education. As the world increasingly adopts digital governance and educational systems, Rivers State cannot afford to lag behind. Deliberate efforts must be made by stakeholders to democratize access to digital tools and enhance capacity-building initiatives. This will ensure that educational planning is data-driven, inclusive, and responsive to the needs of both urban and rural school populations. Ultimately, bridging the digital divide is essential for achieving sustainable educational development and administrative excellence in the 21st century.

Recommendations

1. The Rivers State Ministry of Education should prioritize the provision of internet-enabled devices and broadband access in secondary schools.
2. Education policymakers must monitor the digital divide and design inclusive policies that consider the realities of digitally underserved schools.

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