

Digital Technology as a Tool for Inclusive Educational Management in South-South Nigerian Universities

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Abstract:

This research looks at how South-South Nigerian public institutions utilize digital technology as a tool for inclusive educational administration. The research used a descriptive survey approach. 80,382 teaching and non-teaching employees from federal and state-owned institutions in the states of Akwa Ibom, Bayelsa, Cross River, Delta, Edo, and Rivers made up the study's population. However, the research was restricted to two universities—one federal and one state-owned—due to accessibility and closeness. To ensure sufficient representation, a sample size of 398 respondents was calculated using the Taro Yamane method at a significance level of 0.05. To guarantee that teaching and non-teaching personnel were included proportionately, stratified random selection was used. The Digital Technology and Inclusive Educational Management Questionnaire (DTIEMQ), a structured questionnaire with a 4-point Likert scale, was used to gather data. Expert review was used to determine the instrument's validity, and Cronbach Alpha was used to ensure its reliability. The result was a coefficient of 0.80, which indicates satisfactory internal consistency. In order to address research issues, data were analysed using mean and standard deviation, and hypotheses were evaluated using an independent t-test using SPSS version 27.0 at a significance level of 0.05. The results showed poor infrastructure and low levels of digital knowledge, yet digital technologies have tremendous promise for inclusion. The focus of the conclusion was on systemic change via policy alignment, infrastructural development, and capacity creation. One of the suggestions made is that in order to improve inclusive educational management outcomes, the government should concentrate

on ongoing investments in digital infrastructure, ongoing staff training, and the integration of assistive technologies with the provision of useful ICT support systems.

Keywords: Digital Technology, Inclusive Educational Management, South-South Nigerian Universities.

Introduction

One of the most effective tools for social change, economic empowerment, and national growth is still education. The notion of inclusive education is enshrined in Nigeria's National Policy on Education, which affirms every citizen's right to a high-quality education regardless of background, aptitude, or situation (Federal Republic of Nigeria, 2014). However, Nigeria's reality as a multicultural, multiethnic, and diversified country poses specific difficulties in realizing this goal, especially at higher education institutions in the South-South geopolitical zone. However, the 21st century's advent of digital technology presents previously unheard-of chances to close current gaps and guarantee that no student is left behind in the educational management process.

According to Ohajunwa et al. [1], inclusion in the educational environment covers more than just being physically present in mainstream settings. It also includes meaningful involvement, appropriate assistance provision, and the basic acknowledgment of every student's entitlement to a high-quality education. In order to accommodate a range of learning needs and skills, true inclusion requires a systemic change in educational methods, policies, and cultures, challenging conventional ideas of normality. The quality of educational experiences, the suitability of curriculum and methodology, and the degree to which educational settings support rather than impede learning for students with disabilities are all aspects of access to education that go beyond simple enrollment [2]. Like its counterparts around the country, South-South Nigerian universities cater to a very diversified student body that includes people of all ethnicities, social backgrounds, physical ability, and educational demands. Deliberate institutional policies, flexible pedagogical techniques, and, increasingly, the purposeful deployment of digital technologies that might overcome conventional obstacles to participation are all necessary for managing this diversity inclusively.

Information and communication technology advancements have played a major role in the worldwide transformation of higher education administration and management. Digitalization has started to change how universities in Nigeria organize, plan, and provide educational services [3]. from data-driven decision-making to online learning environments and electronic student record management. The field of educational administration is changing as a result of digital technologies. The crucial concern is still whether these technological advancements are being used for inclusion as well as efficiency, guaranteeing that all students—including those from marginalized backgrounds and those with disabilities—are treated fairly.

In certain parts of Nigeria, such as universities in the South-South region, where institutional infrastructure deficiencies, socioeconomic disparities, and cultural attitudes toward disability and difference intersect to create multiple layers of exclusion, inclusive educational management is particularly difficult [4]. Some of these obstacles may be removed if digital technology is carefully incorporated into school management systems. Assistive technology, inclusive e-management systems, and accessible digital platforms may help the university community better meet the requirements of different student populations and provide learning environments where all students can succeed. According to Ohajunwa et al. [1] and Jamaica & Godspower-Chike [5], the incorporation of digital tools into inclusive educational management thus signifies a fundamental reorientation of how South-South Nigerian universities understand and fulfill their social responsibilities, rather than just a technological advancement. Therefore, this article explores the potential, difficulties, and policy and practice implications of digital technology as a tool for inclusive educational management in South-South Nigerian institutions.

Problem Statement

Most people agree that education is a basic human right and a potent driver of social and economic advancement. But only when its management systems are purposefully created to be inclusive, equal, and sensitive to the needs of all students will the promise of education be completely realized. This is still a major and mostly unsolved issue in South-South Nigerian institutions. Universities still face structural issues that jeopardize fair educational administration, notwithstanding the increasing focus on inclusive education throughout the world and the quick spread of digital technology. While digitalization has revolutionized administrative and pedagogical practices in many higher education institutions, its implementation in Nigerian universities has primarily put efficiency ahead of inclusivity, leaving behind students from marginalized socioeconomic backgrounds and those with disabilities.

The underlying issue at the core of this issue is that it is almost hard to incorporate digital technology as a useful tool for inclusive educational administration when academics and university administrators have little to no familiarity with it. A university community that lacks digital literacy is unable to promote digital inclusion, provide accessible learning spaces, or implement assistive technology that meet the requirements of a wide range of students. Therefore, academic staff's lack of digital literacy acts as a fundamental barrier that makes all other attempts at inclusive educational administration essentially futile. This is made worse by the ongoing lack of infrastructure, insufficient institutional policies, and low awareness of assistive technologies, all of which have led to a substantial disconnect between the goals of inclusive educational management and the actual experiences of diverse student populations throughout the South-South region. In light of this, the purpose of this research was to determine if digital technology might be used in South-South Nigerian universities as a tool for inclusive educational administration.

Aim and Objectives of the Study

The purpose of this research is to determine if digital technology can be used in South-South Nigerian universities as a tool for inclusive educational administration. In particular, the goals are to:

1. Determine how much digital literacy among academic staff members supports inclusive educational management in South-South Nigerian institutions.
2. Evaluate if digital infrastructure is sufficient and available to support inclusive educational management in South-South Nigerian institutions.
3. Assess the degree to which South-South Nigerian institutions employ digital technology, particularly assistive technologies, as a tool for inclusive educational practices.

Research Questions

1. To what extent does academic staff's digital literacy promote inclusive educational management in South-South Nigerian universities?
2. To what extent does the availability and adequacy of digital infrastructure promote inclusive educational management in South-South Nigerian universities?
3. To what extent does the use of digital technologies (including assistive technologies) as a tool for inclusive educational practices in South-South Nigerian universities?

Hypotheses (H₀)

1. The mean evaluations of respondents from federal and state universities about the degree to which academic staff digital literacy supports inclusive educational management in South-South Nigerian universities do not vary significantly.
2. The mean evaluations of respondents from federal and state universities about the degree to

which the availability and sufficiency of digital infrastructure support inclusive educational management in South-South Nigerian universities do not vary significantly.

3. When it comes to how much the employment of digital technologies—including assistive technologies—promotes inclusive educational management in South-South Nigerian institutions, the mean assessments of respondents from federal and state universities do not vary significantly.

Theoretical Framework

Digital Divide Theory

This research on digital technology as a tool for inclusive educational administration in South-South Nigerian institutions is best supported by the Digital Divide Theory. As information and communication technologies—especially the internet—grew in popularity in the late 20th century, researchers noticed that different socioeconomic groups and geographical areas had different access to digital resources. This led to the development of the idea [6]. The hypothesis has recently expanded to include variations in digital skills, use habits, and the capacity to reap significant advantages from technology, having initially concentrated on physical access to computers and internet. The digital gap in Nigerian education shows itself as uneven utilization of educational tools, unequal access to infrastructure, and low digital competency among academic personnel. Due to the inability of institutions with insufficient digital capability to adequately assist different learners, these gaps seriously impede the implementation of inclusive educational management.

Research from Northeast Nigeria demonstrates that limiting access to technology limits educational chances and perpetuates marginalization [7]. In a same vein, digital inequality continues to influence media consumption and information access nationwide, widening structural disparities [8]. Students' academic performance is also affected, especially in computer-based tests where insufficient exposure to digital technologies results in subpar results [9]. In order to achieve equitable university education in the South-South region of Nigeria, it is necessary to bridge the gaps in digital literacy, infrastructure, and technology use. This is made possible by basing this study on the Digital Divide

Theory.

Conceptual Clarification

Digital Technology

In order to enhance communication, learning, and administration in a variety of human endeavours, digital technology refers to the use of electronic tools, systems, devices, and resources that create, store, or process data in binary form. Digital technology in the context of education refers to a wide variety of advances that have radically changed how information is produced, accessed, distributed, and managed. According to Adeoye [10], educational institutions are progressively using electronic technologies to improve administrative, teaching, and learning processes in the digital technology age. A centralised digital space for course materials, assessments, and learner interaction is provided by Learning Management Systems (LMS), which are software platforms that let teachers create, deliver, and monitor instructional content in both online and blended learning environments. Hardware and software solutions that help people with disabilities access educational opportunities by filling in the gaps caused by cognitive or physical constraints are referred to as assistive technology.

Geographically separated students may participate concurrently in virtual classrooms, which are online settings that mimic in-person education with interactive whiteboards, real-time video conferencing, and collaboration tools. To improve student engagement and understanding, digital multimedia learning incorporates text, audio, video, animation, and graphics into educational materials. In contrast, data management systems are organised platforms that gather, arrange, store, and retrieve academic and institutional data, facilitating decision-making and enhancing

administrative effectiveness [11]. The digital infrastructure of contemporary education is made up of several technologies taken together. Adeoye et al. [12] confirmed that utilising these technologies is essential to overcoming the obstacles of digital transformation in Nigeria's education sector, and John and Tamunomiebi [13] added that digitising higher education management offers both major obstacles and revolutionary possibilities for institutional development and international competitiveness.

One of the main pillars supporting inclusive educational management in university settings is the digital literacy of academic personnel. Academic staff are better equipped to create and deliver teaching that meets the varied learning requirements of all students, including those with disabilities and other disadvantaged groups, when they are proficient in using digital tools, platforms, and systems. According to Adeoye et al. [14], unlocking the potential of education in Nigeria's Industry 4.0 era necessitates intentional efforts to overcome obstacles to digital transformation, such as providing academic staff with the necessary digital skills to effectively serve diverse student populations. The use of digital technology in higher education runs the danger of maintaining rather than eliminating current disparities in the absence of such literacy.

Additionally, the quality of instructional results and educational management choices is strongly impacted by academic staff's ability to use digital technologies. According to Uzorka et al. [15], academic staff must effectively traverse digital difficulties and seize new possibilities to promote fair learning environments as part of educational leadership in the digital era. Digital-literate staff members are better equipped to use data-driven tools, virtual classrooms, and learning management systems to track student achievement and address individual needs. Abana and Egbeji [16] went on to say that intentional capacity-building among academic staff is essential for attaining equitable results and that the politics of digitalization in Nigerian education greatly influence how educational institutions are governed. When taken as a whole, these viewpoints confirm that digital literacy is more than just a technical skill; rather, it is a revolutionary facilitator of inclusive educational administration in South-South Nigerian institutions, bridging the gap between policy intention and classroom reality for all types of learners.

Use of Digital Technologies as a Tool for Inclusive Educational Management

In South-South Nigerian institutions, the use of digital technologies—especially assistive technologies—is revolutionizing inclusive teaching methods. Screen readers, speech-to-text software, captioning tools, and adaptive learning platforms are examples of assistive technology that are particularly designed to eliminate obstacles that keep students with impairments from fully engaging in academic life. According to Hodkinson [17], the core goal of inclusion in educational settings is to guarantee that every student, regardless of ability or background, has meaningful access to learning opportunities. Digital technologies offer useful means of operationalizing this ideal in academic settings. A dedication to social justice and fair access is shown by the incorporation of such instruments into institutional practice.

According to Ohajunwa et al. [1], technology is a crucial link between policy commitments and the real-world experiences of students with disabilities, and incorporating disability issues into teaching and research within higher education is crucial for creating truly inclusive institutions. Universities may construct tiered support structures that concurrently meet a variety of student requirements by using digital multimedia learning, virtual classrooms, and data management systems in addition to assistive technology. Ifejika [18] said that focused technology interventions inside educational institutions may significantly counteract these systematic exclusions and that persons with disabilities in Nigeria continue to confront obstacles to social inclusion. In order to create fair learning settings, Patil [19] reiterated that incorporating innovation and technology into educational administration frameworks is crucial. When taken as a whole, these viewpoints demonstrate that the intentional use of digital and assistive technologies is a potent and essential tool for integrating inclusive teaching methods in South-South Nigerian universities, so long as their implementation is

supported by thoughtful policy, sufficient funding, and institutional dedication to equity.

Review of Related Empirical Studies

A research by Eziamaka et al. [20] looked at how teachers' work performance in secondary schools in Ebonyi State, Nigeria, related to the digitization of educational administration techniques. Growing concerns regarding the degree to which digital technologies used in school administration and management result in quantifiable gains in teacher effectiveness and instructional delivery served as the impetus for the research. Using structured questionnaires as the main tool for data collection, the researchers used a correlational study design, recruiting participants from secondary school instructors across Ebonyi State. The study's conclusions showed a strong positive relationship between teachers' job performance and digitalized educational management practices. This suggests that when school management systems are digitalized, teachers gain from more efficient administrative procedures, better channels of communication, and easier access to educational materials, all of which improve their professional output. The research also found that bureaucratic bottlenecks that had previously prevented instructors from concentrating on their primary teaching duties were lessened by digital platforms. However, the researchers also identified enduring issues that mitigated the benefits of digitalization, such as poor digital infrastructure, inadequate training for teaching personnel, and irregular power supplies. The research came to the conclusion that maximizing the performance advantages of educational digitalization in Nigerian secondary schools requires consistent institutional investment in digital management systems together with intentional teacher capacity-building initiatives. This study is directly related to the current inquiry because it provides empirical evidence that integrating digital technology into educational management has quantifiable effects on staff performance. This finding aligns with the inclusive management concerns of South-South Nigerian universities.

An empirical study by Abdulkareem and Lennon [21] examined how the digital divide affected Nigerian students' performance on the computerized Unified Tertiary Matriculation Examination (UTME). The study was motivated by growing worries that students from low-income, rural, and infrastructurally disadvantaged backgrounds who had not previously been exposed to digital tools and computer-based environments would face additional disadvantages as a result of the switch from paper-based to computer-based exams. The researchers collected data from a large sample of UTME candidates in various geopolitical zones in Nigeria using a quantitative study approach. They then analyzed performance differences in connection to students' levels of digital access and ability. The findings showed that students who faced severe digital divide issues—which are typified by restricted access to computers, the internet, and digital learning materials—performed significantly worse on the computerized test than their peers who had more access to technology. The research proved that the digital gap is a structural equity issue that perpetuates current socioeconomic disparities in educational evaluation systems, rather than only an access issue. Additionally, the results showed that the association between digital access and academic achievement was significantly moderated by gender, geographic region, and institutional type. In order to close the digital divide, the researchers suggested immediate policy changes, such as the inclusion of digital literacy instruction in pre-tertiary curricula, the expansion of broadband infrastructure in underprivileged areas, and the subsidization of digital equipment. This study is especially relevant to the current research because it offers solid empirical evidence that digital disparities directly impede inclusive educational participation, supporting the claim that digital literacy and infrastructure are necessary for equitable educational management.

In an empirical investigation of equity and social justice perspectives on disability inclusion within Nigerian service delivery systems, Azubuiké et al. [22] focused on how systemic and structural factors influence the inclusion or exclusion of people with disabilities from institutional participation. Even though the study was conducted in the context of healthcare services, its theoretical and empirical findings have important ramifications for inclusive educational management because both industries face similar difficulties with regard to institutional culture, resource limitations, policy

implementation, and attitudes. In order to provide rich, contextualized data on the lived experiences of people with disabilities navigating institutional systems in Nigeria, the researchers used a qualitative technique that included in-depth interviews and document analysis. The results showed that people with disabilities often face structural exclusion stemming from poor policy enforcement, inaccessible buildings and technology, and widespread stigmatization, all of which compromise their ability to meaningfully engage in institutional life. The research showed that institutions need to go beyond superficial accommodations in favor of radical structural change, and that equity and social justice frameworks are essential analytical tools for comprehending and resolving disability inclusion issues. The research also made the case that digital technologies have a great deal of potential to break down structural barriers and promote equitable participation when they are purposefully developed and implemented with disability inclusion as a top priority. The research came to the conclusion that community involvement, institutional accountability systems, and policy commitment are all necessary for true inclusion. These results provide a strong empirical basis for examining how digital technologies might function as tools of inclusive educational management in South-South Nigerian institutions, especially for employees and students with impairments.

Methodology

In order to investigate the use of digital technology as a tool for inclusive educational management in South-South Nigerian public institutions, this study used a descriptive survey research approach. Because it makes it possible to describe current circumstances and identify connections between the use of digital technology and inclusive educational management methods without changing factors, the design was suitable. 80,382 teaching and non-teaching employees from public universities in the South-South geopolitical zone of Nigeria—Akwa Ibom, Bayelsa, Cross River, Delta, Edo, and Rivers States—including both federal and state-owned establishments, made up the study's population. The University of Benin, University of Calabar, University of Port Harcourt, University of Uyo, Federal University of Petroleum Resources, Effurun, and Federal University Otuoke are among the federal institutions in the area. Rivers State University, Ignatius Ajuru University of Education, Ambrose Alli University, Delta State University, Abraka, Dennis Osadebay University, Akwa Ibom State University, Cross River University of Technology, Bayelsa Medical University, and Edo State University, Iyamho are among the state-owned universities. However, the research was restricted to one federal and one state-owned institution chosen among the states in the area because of accessibility, closeness, and convenience of data collecting.

The Taro Yamane method, which offered a scientifically sound foundation for choosing a representative sample from the population, was used to calculate the sample size. This guaranteed the representation's sufficiency and dependability. At a significance level of 0.05, the calculation yielded a total of 398 responses from the population of 80,382 employees. To guarantee equitable representation of both teaching and non-teaching personnel in the chosen institutions, a stratified random sample approach was used. The Digital Technology and Inclusive Educational Management Questionnaire (DTIEMQ), a structured questionnaire with a 4-point Likert scale, was used to gather data. While reliability was verified using Cronbach's Alpha, which produced a value of 0.80, showing adequate internal consistency, the validity of the instrument was proven by expert evaluation. Trained research assistants helped administer the instrument, and the results were analyzed using mean and standard deviation to address research objectives. Using SPSS version 27.0, the independent t-test was used to evaluate hypotheses at a significance level of 0.05. Respondents from the chosen institutions received a total of 398 questionnaires. Of these, 344 questionnaires (86.4%) were correctly completed and recovered as valid for analysis; the remaining 54 questionnaires (13.6%) were either not returned or were filled out improperly, therefore they were excluded from the study.

Result and Discussion

Research Question 1: To what extent does academic staff digital literacy promote inclusive educational management in South-South Nigerian universities?

Table 1. Descriptive statistics of mean scores and standard deviation of respondents on the extent to which academic staff's digital literacy promotes inclusive educational management in South-South Nigerian universities.

S/N	Statement	Federal Mean	Federal SD	State Mean	State SD	\bar{X} of \bar{X}	Remark
1	Proficiency in navigating digital tools and platforms	2.18	0.91	2.11	0.98	2.14	Low Extent
2	Capacity to design accessible digital instructional content	1.98	0.85	2.03	0.92	2.00	Low Extent
3	Use of LMS for inclusive instructional delivery	2.31	0.94	2.24	1.01	2.27	Low Extent
4	Digital communication and collaboration competencies	2.09	0.88	2.15	0.95	2.12	Low Extent
5	Data-driven decision-making competency for student support	2.22	0.90	2.18	0.97	2.20	Low Extent
	Grand Mean	2.16		2.14		2.15	Low Extent

The first research question examined how much digital literacy among academic staff members supports inclusive educational management in South-South Nigerian institutions. The study showed a grand mean of 2.15, which is less than the criteria mean of 2.50, as shown in Table 1. The ability to create accessible digital instructional material had an individual item mean of 2.00, while the usage of learning management systems for inclusive instructional delivery had an individual item mean of 2.27. All of these scores were below or extremely close to the criteria mean. The closely linked grand averages of 2.16 and 2.14 for federal and state respondents, respectively, show that academic staff members are often seen as having little to no digital literacy, regardless of gender. According to the grand mean of 2.15, academic staff's digital literacy now supports inclusive educational administration in South-South Nigerian institutions, according to respondents. This research indicates that the region's academic staff's digital competence is still woefully insufficient, which poses a serious obstacle to the implementation of inclusive educational management techniques in these establishments.

Research Question 2: To what extent does the availability and adequacy of digital infrastructure promote inclusive educational management in South-South Nigerian universities?

Table 2. Descriptive statistics of mean scores and standard deviation of respondents on the extent to which the availability and adequacy of digital infrastructure promotes inclusive educational management in South-South Nigerian universities.

S/N	Statement	Federal Mean	Federal SD	State Mean	State SD	\bar{X} of \bar{X}	Remark
6	Availability of computers and digital devices for staff and students	2.41	0.97	2.35	1.02	2.38	Low Extent
7	Reliability and adequacy of internet connectivity on campuses	1.89	0.93	1.94	0.99	1.91	Low Extent
8	Consistent power supply to sustain digital operations	1.72	1.01	1.68	1.05	1.70	Low Extent

9	Adequacy of institutional software and network systems	2.28	0.95	2.21	0.98	2.24	Low Extent
10	Regular maintenance and upgrading of digital infrastructure	2.05	0.92	2.11	0.96	2.08	Low Extent
	Grand Mean	2.07		2.06		2.06	Low Extent

The second research question looked at how much inclusive educational management is supported in South-South Nigerian institutions by the availability and sufficiency of digital infrastructure. Table 2's analysis yielded a grand mean of 2.06, which is significantly lower than the criteria mean of 2.50. This suggests that respondents had a low degree of confidence in the availability and sufficiency of digital infrastructure in South-South Nigerian institutions to support inclusive educational management. Consistent power supply for digital activities was the most severely evaluated item, with the lowest mean of 1.70, indicating the region's serious electrical issues. A relatively low mean of 1.91 was also obtained for internet connection adequacy and reliability. Grand averages of 2.07 and 2.06 were reported by federal and state respondents, respectively, indicating consistent agreement across genders that institutional digital infrastructure is still woefully insufficient. Therefore, the grand mean of 2.06 indicates that there is not enough digital infrastructure in South-South Nigerian institutions to adequately support and promote inclusive educational management methods.

Research Question 3: To what extent does the use of digital technologies (including assistive technologies) promote inclusive educational management in South-South Nigerian universities?

Table 3. Descriptive statistics of mean scores and standard deviation of respondents on the extent to which the use of digital technologies (including assistive technologies) promotes inclusive educational management in South-South Nigerian universities.

S/N	Statement	Federal Mean	Federal SD	State Mean	State SD	\bar{X} of \bar{X}	Remark
11	Assistive technologies can support students with disabilities when properly deployed	2.78	0.88	2.82	0.91	2.80	High Extent
12	Virtual classrooms can enhance inclusive access if the infrastructure is adequate	2.65	0.94	2.71	0.97	2.68	High Extent
13	Digital multimedia tools have the potential to support diverse learners	2.72	0.90	2.68	0.93	2.70	High Extent
14	Data management systems can improve inclusive administration when staff are trained	2.58	0.96	2.61	0.99	2.59	High Extent
15	Digital technologies promote inclusion only when staff literacy and infrastructure are in place	2.81	0.87	2.85	0.90	2.83	High Extent
	Grand Mean	2.71		2.73		2.72	High Extent

The third research question examined how much inclusive educational management in South-South Nigerian institutions is supported by the use of digital technologies, particularly assistive technology. According to Table 3, the grand mean of 2.72 was higher than the criteria mean of 2.50, suggesting that respondents believe digital and assistive technologies have the ability to support inclusive educational administration, although conditionally. The assertion that digital technologies promote inclusivity only when academic staff literacy and digital infrastructure are in place had the highest item mean of 2.83, which is a highly informative result. Data management systems for inclusive administration had the lowest mean of 2.59, while the item on assistive technology aiding students with impairments when appropriately implemented had the highest mean of 2.80. Grand means for Federal and State responders were 2.71 and 2.73, respectively. The respondents' High Extent that digital and assistive technologies hold meaningful potential for inclusive educational management was confirmed by the overall grand mean of 2.72. However, this potential is explicitly contingent upon the prior availability of academic staff digital literacy and adequate digital infrastructure, both of which the results of Research Questions One and Two confirm are currently lacking in South-South Nigerian universities.

Hypothesis One: There is no significant difference in the mean ratings of respondents from federal and state universities on the extent to which academic staff's digital literacy promotes inclusive educational management in South-South Nigerian universities.

Table 4. t-test of difference between the mean ratings of respondents from federal and state universities on the extent to which academic staff's digital literacy promotes inclusive educational management.

Status	N	\bar{X}	SD	Df	t-cal	t-tab	P-value	Decision
Federal University	196	2.17	0.91	342	1.09	1.96	0.27	Accept H_0
State University	148	2.13						

The first hypothesis examined whether the degree to which academic staff's digital literacy supports inclusive educational administration differs significantly between respondents from federal and state institutions. Federal university respondents reported a mean of 2.17, while state university respondents recorded a mean of 2.13, both of which were significantly below the criteria mean of 2.50, as Table 4 illustrates. At a 0.05 level of significance with 342 degrees of freedom, the computed t-value of 1.09 is lower than the tabulated t-value of 1.96, and the p-value of 0.27 is higher than the 0.05 significance level. As a result, the null hypothesis was approved. This result confirms that inadequate digital competency is a systemic issue that is consistently encountered across both categories of South-South Nigerian universities. It shows that respondents from both federal and state universities share a similar and consistent perception that academic staff's digital literacy is grossly insufficient for promoting inclusive educational management.

Hypothesis Two: There is no significant difference in the mean ratings of respondents from federal and state universities on the extent to which the availability and adequacy of digital infrastructure promote inclusive educational management in South-South Nigerian universities.

Table 5. t-test of difference between the mean ratings of respondents from federal and state universities on the extent to which the availability and adequacy of digital infrastructure promotes inclusive educational management.

Status	N	\bar{X}	SD	Df	t-cal	t-tab	P-value	Decision
Federal University	196	2.09	0.96	342	1.15	1.96	0.25	Accept H_0

The second hypothesis looked at whether respondents from federal and state universities had significantly different opinions about the availability and sufficiency of digital infrastructure in fostering inclusive educational management. Federal university respondents reported a mean of 2.09 and state university respondents recorded a mean of 2.03, both significantly below the criteria mean of 2.50, as shown in Table 5. The p-value of 0.25 verifies the lack of statistical significance, and the computed t-value of 1.15 is less than the essential tabular value of 1.96 at the 0.05 significance level with 342 degrees of freedom. As a result, the null hypothesis was approved. This finding demonstrated that, regardless of institutional category or governance structure, respondents from both federal and state universities in South-South Nigeria unanimously believe that the digital infrastructure in these institutions is woefully inadequate, and that this infrastructure deficiency constitutes a shared, systemic barrier to inclusive educational management.

Hypothesis Three: There is no significant difference in the mean ratings of respondents from federal and state universities on the extent to which the use of digital technologies (including assistive technologies) promotes inclusive educational management in South-South Nigerian universities.

Table 6. t-test of difference between the mean ratings of respondents from federal and state universities on the extent to which the use of digital technologies (including assistive technologies) promotes inclusive educational management.

Status	N	\bar{X}	SD	Df	t-cal	t-tab	P-value	Decision
Federal University	196	2.74	0.89	342	1.28	1.96	0.20	Accept H_0
State University	148	2.69						

The third hypothesis examined whether respondents from federal and state universities differed significantly in how they assessed digital and assistive technology as tools for inclusive educational management. According to Table 6, state university respondents had a mean of 2.69 and federal university respondents had a mean of 2.74, both of which slightly above the criteria mean of 2.50. The p-value of 0.20 indicates no statistical significance, and the computed t-value of 1.28 is less than the tabulated critical value of 1.96 at the 0.05 significance level with 342 degrees of freedom. As a result, the null hypothesis was approved. This result shows that respondents from both federal and state universities agree that digital and assistive technologies have the potential to support inclusive educational management, but only under certain conditions—that is, if academic staff's digital literacy is improved and digital infrastructure is made sufficiently accessible—two requirements that the results of Hypotheses One and Two confirm are currently unmet in South-South Nigerian universities.

Discussion of Findings

Academic Staff's Digital Literacy and Inclusive Educational Management

The study's grand mean of 2.15, which is lower than the criteria mean of 2.50, showed that respondents' perceptions of how much academic staff members' digital literacy now supports inclusive educational administration in South-South Nigerian institutions are inadequate. According to this research, most academic staff members at these institutions have little to no meaningful digital competency, making it difficult for them to use assistive technologies, learning management systems, or digital tools in ways that would promote inclusive educational management. With a t-calculated value of 1.09 below the crucial value of 1.96, the hypothesis test revealed no significant difference between respondents from federal and state universities, demonstrating that this shortcoming is systemic and consistent across institutional categories. This result is consistent with Adeoye et al.

[23], who noted that academic staff cannot effectively serve diverse and marginalised student populations without intentional digital training and capacity-building. They identified inadequate digital competency among educational personnel as one of the primary challenges undermining Nigeria's transition to Industry 4.0-compliant education. In a similar vein, Abana and Egbeji [24] confirmed that the politics of digitalisation in Nigerian educational management have frequently given infrastructure acquisition precedence over the development of human capital, leaving academic staff ill-prepared to convert available digital tools into inclusive management outcomes. When taken as a whole, these academic viewpoints support the current conclusion that academic staff members' lack of sufficient digital literacy is a serious institutional failing that seriously jeopardises inclusive educational management in South-South Nigerian institutions.

Availability and Adequacy of Digital Infrastructure and Inclusive Educational Management

Research Question Two's analysis produced a grand mean of 2.06, which is much lower than the criteria mean of 2.50. This confirms respondents' poor perception that South-South Nigerian colleges have sufficient digital infrastructure to support inclusive educational administration. Consistent power supply (mean score of 1.70) and internet connection dependability (mean score of 1.91) received the lowest ratings, indicating the significant energy and telecommunications deficiencies that define the institutional environment in the area. The hypothesis test yielded a t-calculated value of 1.15, which is less than the tabulated value of 1.96, indicating that both federal and state institutions share the same impression of inadequate infrastructure. This result is in line with Akinwale's [25] identification of inadequate infrastructure as a pervasive threat to institutional effectiveness in Nigeria. Akinwale argues that institutions cannot provide equitable services to all students, especially those with disabilities who rely most heavily on technology-enabled support systems, without consistent investment in physical and technological infrastructure. Additionally, Vitalis et al. [26] demonstrated that the digital divide in Nigeria has significant institutional ramifications, as individuals on the disadvantaged side of the divide are routinely denied access to the advantages of digital education. The current findings confirm that this reality is still severe in South-South Nigerian universities. If inclusive educational management is to go beyond aspirational rhetoric, the convergence of these empirical and scholarly positions confirms that the persistent inadequacy of digital infrastructure in these institutions is a structural barrier that needs to be urgently addressed through intentional policy intervention and sustained governmental investment.

Utilizing Inclusive Educational Management and Digital Technologies, Including Assistive Technologies

The results of Research Question Three showed a grand mean of 2.72, which is slightly higher than the criterion mean of 2.50. This suggests that respondents have a High Extent, albeit with obvious conditionality, belief that digital and assistive technologies can support inclusive educational management in South-South Nigerian universities. Importantly, the item with the highest mean of 2.83 made it clear that digital technologies only encourage inclusion in the presence of digital infrastructure and academic staff literacy. This finding directly connects the potential of digital technologies to the deficiencies verified in Findings One and Two. There was no discernible difference between respondents from federal and state universities in this conditional evaluation, according to the hypothesis test's t-calculated value of 1.28. This result is consistent with Hodgkinson's [27] assertion that digital and assistive technologies are powerful tools for inclusive education, but only when they are backed by supportive institutional conditions, such as qualified staff and operational infrastructure, without which their implementation produces little significant inclusion. Similarly, Ohajunwa et al. [28] found that the use of technology to effectively integrate students with disabilities into higher education depends not only on the availability of devices but also on the infrastructure, staff capabilities, and institutional will to use them consistently and purposefully. Therefore, the current findings confirm that although respondents acknowledge the transformative potential of digital and assistive technologies for inclusive educational management, this potential

remains largely unrealized in South-South Nigerian universities due to the compounding lack of adequate digital infrastructure and digital literacy among academic staff, both of which must be addressed concurrently for technology-enabled inclusive management to become a workable institutional reality [29][30][31].

Conclusion

This research demonstrated the need of reorienting South-South Nigerian university systems toward inclusive, technologically enabled educational administration. More than just policy statements are needed to achieve meaningful inclusion; intentional alignment of institutional structures, technical resources, and human potential is required. Therefore, universities need to adopt a comprehensive transformation plan that incorporates strategic leadership commitment, functional infrastructure, and the development of digital competence. The pursuit of inclusive educational management will continue to be dispersed and essentially ineffectual if these interrelated components are not strengthened. Proactive governance, steady financing, and accountability systems that guarantee the implementation, maintenance, and ongoing improvement of digital projects are essential for sustainable growth. Institutional cultures that promote creativity, flexibility, and responsiveness to a range of student demands are equally crucial. Universities may provide settings where all students, regardless of background or ability, are fairly supported by giving these aspects top priority. In the end, coordinated, long-term efforts that convert digital potential into useful and quantifiable educational results are essential to the region's realization of inclusive educational management.

Recommendations

Based on the findings, the following recommendations were made:

1. The government should prioritise sustained investment in reliable electricity and high-speed internet to strengthen digital infrastructure in South-South Nigerian universities.
2. Universities should implement continuous digital literacy training programmes to equip academic staff with the competencies required for effective inclusive educational management practices.

Institutional policies should promote integration of assistive technologies and establish functional ICT support systems to enhance inclusive educational management outcomes.

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