

Exploring the Relationship between Work Environment and the Use of Educational Support Systems by Library Educators Universities in Edo State, Nigeria

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ABSTRACT

This study investigates the relationship between the work environment and the utilization of educational support systems (ESS) among library educators in university-based library schools in Edo State, Nigeria. Educational support systems, including digital libraries, learning management systems, and electronic research databases, are integral to effective teaching, learning, and scholarly productivity in Library and Information Science (LIS) education. Despite their availability, disparities in usage persist, raising concerns about underlying environmental influences. Adopting a descriptive survey research design, the study examines how dimensions of the work environment—physical infrastructure, technological facilities, administrative support, and psychosocial conditions—affect the extent of ESS use. Data were collected from library educators across selected universities in Edo State using structured questionnaires and analyzed using descriptive and inferential statistics. The findings reveal that although library educators demonstrate a high level of awareness and positive disposition toward ESS, their effective utilization is significantly hindered by factors such as inadequate ICT infrastructure, erratic power supply, limited professional training, and weak institutional support mechanisms. The study concludes that the work environment plays a critical role in shaping ESS adoption and sustained use. It recommends that university management prioritize the provision of enabling infrastructure, continuous capacity-building programmes, and supportive policies to enhance the integration of ESS in LIS education.

Keywords: Work Environment, Educational Support Systems (ESS), Library Educators, Library and Information Science (LIS) Education

INTRODUCTION

The rapid advancement of Information and Communication Technology (ICT) has significantly transformed educational systems worldwide, reshaping traditional pedagogical approaches and introducing innovative methods of teaching and learning. The integration of ICT into education has created opportunities for enhanced access to information, improved instructional delivery, and increased collaboration among learners and educators (Obadare & Alonge, 2024). In contemporary higher education, digital technologies such as learning management systems, digital libraries, and artificial intelligence tools—collectively referred to as Educational Support Systems (ESS)—have become central to academic practice.

Globally, the adoption of ESS has been recognized as a key driver of quality education. These systems support interactive learning, facilitate access to scholarly resources, and enhance research productivity. However, despite their potential, studies reveal that effective utilization remains uneven. For instance, educators may possess basic ICT competence but still underutilize digital tools in instructional delivery (Dada et al., 2025). This indicates that technological availability alone does not guarantee effective integration.

Recent developments in artificial intelligence and digital learning technologies have further expanded the scope of ESS in higher education. These technologies offer innovative solutions such as personalized learning, automated assessment, and intelligent information retrieval systems (Bali et al., 2024). Nevertheless, their

implementation in developing countries like Nigeria continues to face significant challenges, particularly in terms of infrastructure and human capacity.

In the Nigerian context, the adoption of ICT in higher education institutions has gained momentum, yet several barriers persist. Studies have shown that issues such as inadequate funding, poor infrastructure, and lack of technical support hinder effective ICT integration (Euro Afro Studies International Journal, 2025; Nwobodo & Udoka, 2025). Similarly, unreliable electricity supply and limited access to digital tools have been identified as major constraints affecting educators' use of technology (Gonfa et al., 2024).

Within Library and Information Science (LIS) education, the importance of ESS cannot be overstated. Library educators are expected to utilize digital tools such as online databases, institutional repositories, indexing and abstracting services, and library automation systems to facilitate teaching and research. These tools are essential for preparing students for the evolving information landscape. However, the extent to which educators effectively use these systems depends largely on their work environment.

The work environment plays a critical role in shaping educators' attitudes, skills, and behaviors toward technology adoption. Research indicates that factors such as availability of ICT facilities, institutional support, training opportunities, and organizational culture significantly influence technology integration in education (Sepadi et al., 2025). Furthermore, educators often encounter barriers such as lack of competence, limited confidence, and insufficient access to resources, which are directly linked to environmental conditions (Abdulkadir & Hassan, 2026).

Post-pandemic experiences have further emphasized the importance of a supportive work environment in sustaining technology use in education. The shift toward online and hybrid learning models exposed gaps in institutional preparedness and highlighted the need for continuous professional development and infrastructure improvement (Theodorio et al., 2024). These developments underscore the necessity of examining the environmental factors that influence the use of ESS.

In Edo State, Nigeria, university-based library schools are increasingly integrating ESS into their academic programmes in line with global best practices. However, anecdotal evidence suggests that the utilization of these systems remains suboptimal due to environmental challenges. These challenges include inadequate ICT infrastructure, unstable power supply, limited training opportunities, and weak institutional support.

Given this background, the objective therefore is to examine the relationship between the work environment and the use of educational support systems by library educators. Understanding this relationship will provide insights into the barriers affecting ESS utilization and inform strategies for improving LIS education in Nigeria.

Research Questions:

1. What is the level of availability of Educational Support Systems in university-based library schools in Edo State?
2. To what extent do library educators use Educational Support Systems?
3. How does the physical and technological work environment influence ESS usage?
4. What is the influence of administrative and organizational support on ESS usage?
5. How does the psychosocial work environment affect ESS usage?
6. What are the challenges affecting the use of ESS

METHODOLOGY

The study adopted a descriptive survey research design. The design enabled the researcher to examine how different dimensions of the work environment influence the use of Educational Support Systems (ESS) among

library educators in university-based library schools in Edo State. The choice of this design is supported by its suitability for gathering quantitative data that can be analyzed using statistical tools such as mean and standard deviation (Dada et al., 2025).

The study was carried out in Edo State, Nigeria, with a focus on university-based Library and Information Science (LIS) programmes. The state hosts a mix of public and private universities that offer LIS education, making it an appropriate setting for investigating the integration of Educational Support Systems (ESS). The institutions included Ambrose Alli University, which had eight (8) lecturers; University of Benin, with five (5) lecturers; and Benson Idahosa University, with two (2) lecturers. This brought the total number of library educators in Edo State to fifteen (15).

Given the relatively manageable size of this population, the study will adopt a total enumeration approach (census), ensuring that all eligible respondents are included. This approach enhances the representativeness and generalizability of the findings.

Data for the study were collected using a structured questionnaire developed by the researcher. The questionnaire was divided into sections as follows:

- **Section A:** Demographic information (e.g., gender, academic rank, years of experience)
- **Section B:** Availability of Educational Support Systems
- **Section C:** Extent of use of ESS
- **Section D:** Work environment factors influencing ESS usage
- **Section E:** Challenges affecting ESS utilization

The questionnaire utilized a four-point Likert scale ranging from:

- Strongly Agree (4)
- Agree (3)
- Disagree (2)
- Strongly Disagree (1)

The reliability coefficient obtained was 0.73, indicating that the instrument is reliable for data collection. This threshold is widely accepted in social science research (Abdulkadir & Hassan, 2026). The researcher employed a direct administration method to distribute the questionnaires to respondents. This involved visiting the selected institutions and administering the instrument in person or via electronic means such as email or online survey platforms.

Data collected from the questionnaire were analyzed using descriptive statistics, specifically mean and standard deviation.

- The mean was used to determine the average response for each item.
- The standard deviation was used to assess the level of variation among responses.

A criterion mean of 2.50 was used as the decision rule:

- Mean $\geq$ 2.50: Accepted
- Mean $<$ 2.50: Rejected

The results were presented in tables and interpreted in line with the research questions.

The study adhered to ethical standards in research. Participation was voluntary, and respondents were informed about the purpose of the study. Confidentiality of responses was maintained, and data were used strictly for academic purposes.

Analysis Based on Research Questions

Research Question 1:

What is the level of availability of Educational Support Systems in university-based library schools in Edo State?

s/n	Items	Mean	Std Dev	Decision
1	Learning Management Systems are available	3.12	0.78	Accepted
2	Digital libraries are accessible	3.05	0.82	Accepted
3	Online databases are available	3.20	0.75	Accepted
4	Institutional repositories exist	2.85	0.90	Accepted
5	Library automation systems are functional	2.70	0.95	Accepted
Grand Mean		2.98	Accepted	

The results indicate that Educational Support Systems are generally available in university-based library schools, as the grand mean (2.98) exceeds the criterion mean.

Research Question 2:

To what extent do library educators use Educational Support Systems?

Use of ESS

s/n	Items	Mean	Std Dev	Decision
1	Use of LMS for teaching	2.65	0.88	Accepted
2	Use of digital libraries for research	3.10	0.80	Accepted
3	Use of online databases	3.00	0.76	Accepted
4	Use of institutional repositories	2.40	0.92	Rejected
5	Use of automation tools	2.55	0.89	Accepted
Grand Mean		2.74	Accepted	

Library educators moderately use ESS. However, some tools like institutional repositories are underutilized.

Research Question 3:

How does the physical and technological work environment influence ESS usage?

Physical/Technological Environment and ESS Usage

s/n	Items	Mean	Std Dev	Decision
1	Availability of computers enhances usage	3.25	0.70	Accepted
2	Internet connectivity affects usage	3.40	0.65	Accepted
3	Power supply influences ESS usage	3.50	0.60	Accepted
4	ICT facilities are adequate	2.30	0.95	Rejected
5	Access to modern tools improves usage	3.10	0.75	Accepted
Grand Mean		3.11	Accepted	

The physical and technological environment significantly influences ESS usage, although ICT facilities are still inadequate.

Research Question 4:

What is the influence of administrative and organizational support on ESS usage?

Administrative Support and ESS Usage

s/n	Items	Mean	Std Dev	Decision
1	Institutional policies support ESS use	2.60	0.85	Accepted
2	Funding for ICT is adequate	2.20	0.98	Rejected
3	Training opportunities are provided	2.35	0.90	Rejected
4	Technical support is available	2.50	0.88	Accepted
5	Management encourages ICT use	2.75	0.80	Accepted
Grand Mean		2.48	Rejected	

Administrative support is generally inadequate, as indicated by the grand mean (2.48), which falls below the criterion mean.

Research Question 5:

How does the psychosocial work environment affect ESS usage?

Psychosocial Environment and ESS Usage

s/n	Items	Mean	Std Dev	Decision
1	Collaboration among staff enhances usage	3.15	0.78	Accepted
2	Positive work relationships encourage ICT use	3.05	0.80	Accepted
3	Motivation affects ESS adoption	3.20	0.75	Accepted

4	Resistance to change affects usage	2.90	0.85	Accepted
5	Organizational culture supports innovation	2.45	0.92	Rejected
Grand Mean		2.95	Rejected	

The psychosocial work environment positively influences ESS usage, although organizational culture needs improvement.

Research Question 6:

What are the challenges affecting the use of ESS?

Challenges Affecting ESS Usage

s/n	Items	Mean	Std Dev	Decision
1	Poor internet connectivity	3.45	0.60	Accepted
2	Unstable power supply	3.60	0.55	Accepted
3	Lack of training	3.20	0.70	Accepted
4	Inadequate ICT facilities	3.35	0.65	Accepted
5	Resistance to technology	2.70	0.85	Accepted
Grand Mean		3.26	Accepted	

Major challenges affecting ESS usage include poor power supply, internet issues, and inadequate training.

Summary of Findings

The analysis revealed that:

- Educational Support Systems are available but not optimally utilized
- The work environment significantly influences usage
- Infrastructure and power supply are major determinants
- Administrative support is weak
- Psychosocial factors positively influence adoption
- Key challenges include poor infrastructure, lack of training, and unstable electricity

DISCUSSION OF FINDINGS

This section provides a detailed discussion of the findings in relation to the research questions, existing literature, and the theoretical framework underpinning the study. The discussion highlights how the work environment influences the use of Educational Support Systems (ESS) among library educators in university-based library schools in Edo State.

Availability of Educational Support Systems

The findings revealed that Educational Support Systems such as learning management systems, digital libraries, and online databases are generally available in university-based library schools. This suggests that institutions have made some progress in integrating ICT into LIS education. However, the presence of these systems does not necessarily translate into effective utilization.

This finding supports the position of Dada et al. (2025), who observed that the availability of ICT tools in educational institutions does not automatically lead to their effective use. Similarly, Obadare and Alonge (2024) emphasize that while ICT tools are increasingly present in educational settings, their impact depends largely on how they are utilized by educators.

From the perspective of the Technology Acceptance Model (TAM), availability alone is insufficient to drive usage unless educators perceive these systems as useful and easy to use. Therefore, institutions must move beyond provision to ensuring usability and accessibility.

Extent of Use of Educational Support Systems

The study found that library educators moderately use ESS, with higher usage observed in digital libraries and online databases, while tools such as institutional repositories are underutilized. This indicates a gap between awareness and actual usage.

This finding aligns with Abdulkadir and Hassan (2026), who reported that educators' use of ICT tools is often limited by lack of competence and inadequate training. It also supports Dada et al. (2025), who noted that educators may be familiar with digital tools but do not consistently integrate them into teaching practices.

The moderate level of usage can be explained through TAM, where perceived ease of use and usefulness influence actual adoption. If educators find certain systems complex or irrelevant to their teaching needs, they are less likely to use them effectively.

Influence of Physical and Technological Work Environment

The findings showed that the physical and technological environment—particularly internet connectivity, power supply, and availability of ICT facilities—significantly influences the use of ESS. Unstable electricity and poor internet connectivity were identified as major barriers.

This is consistent with Gonfa et al. (2024), who found that inadequate infrastructure is a major constraint to ICT integration in education. Similarly, Euro Afro Studies International Journal (2025) highlighted that poor technological infrastructure remains a critical challenge in Nigerian universities.

From the perspective of the Diffusion of Innovation Theory (DOI), these infrastructural challenges increase the perceived complexity of ESS and reduce their trialability, thereby slowing adoption. Without reliable infrastructure, educators cannot consistently use digital systems, regardless of their willingness.

Influence of Administrative and Organizational Support

The study revealed that administrative support for ESS usage is generally inadequate, particularly in terms of funding, training, and technical support. Although some institutions encourage ICT use, the lack of structured support systems limits effective implementation.

This finding corroborates Nwobodo and Udoka (2025), who reported that weak institutional policies and insufficient funding hinder ICT adoption in Nigerian educational institutions. Sepadi et al. (2025) also emphasized that institutional support, including training and resource provision, is essential for successful technology integration.

Within the TAM framework, lack of training reduces perceived ease of use, while inadequate institutional support diminishes perceived usefulness. Similarly, DOI suggests that weak organizational structures slow the diffusion of innovation by limiting communication, support, and visibility of benefits.

Influence of Psychosocial Work Environment

The findings indicated that the psychosocial work environment positively influences ESS usage. Factors such as collaboration among staff, motivation, and positive work relationships were found to enhance the use of digital systems. However, organizational culture was identified as an area requiring improvement.

This aligns with Sepadi et al. (2025), who noted that teachers' attitudes toward technology are strongly influenced by their work environment and social interactions. A supportive environment encourages knowledge sharing, peer learning, and innovation.

From a theoretical standpoint, DOI highlights the importance of social systems in influencing adoption. When educators observe colleagues successfully using ESS, they are more likely to adopt these tools themselves (observability). Likewise, TAM suggests that positive experiences shared within a supportive environment can enhance perceived usefulness and ease of use.

Challenges Affecting the Use of ESS

The study identified several challenges affecting ESS usage, including poor internet connectivity, unstable power supply, lack of training, inadequate ICT facilities, and resistance to technological change.

These findings are consistent with Abdulkadir and Hassan (2026), who identified lack of digital competence and resource constraints as key barriers to ICT adoption. Similarly, Gonfa et al. (2024) reported that infrastructural challenges and insufficient training significantly hinder technology integration in education.

The persistence of these challenges indicates that ESS adoption is not solely a technological issue but also an environmental and organizational one. According to TAM, these barriers reduce both perceived usefulness and ease of use, thereby limiting adoption. From the DOI perspective, these challenges increase the complexity of innovation and reduce its compatibility with existing practices.

CONCLUSION

This study has demonstrated that the work environment is a critical determinant of the effective use of educational support systems (ESS) among library educators in university-based library schools in Edo State, Nigeria. While the findings reveal a high level of awareness and a generally positive attitude toward ESS—such as digital libraries, learning management systems, and electronic databases—actual utilization remains suboptimal. This gap is largely attributed to unfavorable environmental conditions, including inadequate ICT infrastructure, unreliable power supply, limited access to modern technologies, insufficient institutional support, and inadequate opportunities for continuous professional development.

The study further establishes that the interplay of physical, technological, administrative, and psychosocial factors within the workplace significantly influences educators' ability and willingness to integrate ESS into teaching, research, and service delivery. Where supportive conditions exist, utilization tends to improve; conversely, constrained environments discourage consistent and effective use. These findings reinforce the broader understanding that technology adoption in higher education is not solely dependent on availability but also on the conduciveness of the surrounding work environment.

In conclusion, enhancing the work environment is not optional but essential for optimizing the benefits of educational support systems in Library and Information Science education. Addressing infrastructural deficits, strengthening institutional policies, and investing in staff capacity building will not only improve ESS utilization but also contribute to the overall quality of teaching, learning, and research in Nigerian universities.

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