

# LEVERAGE OF TECHNOLOGY ON EDUCATIONAL MANAGEMENT IN COLLEGES OF EDUCATION: A CASE OF FCE PANKSHIN, PLATEAU STATE, NIGERIA

**AKUH Esther Amina Ph.D<sup>1</sup>**  
amina.aku@fulokoja.edu.ng

**TOLORUNLEKE Emmanuel Adebayo Ph.D<sup>2</sup>**  
tolorunleke.adebayo@fulokoja.edu.ng  
Department of Educational Foundations, <sup>1&2</sup>  
Federal University Lokoja, Kogi State, Nigeria.

## Abstract

*The study investigated leverage of technology on management in Colleges of Education: A case of Federal College of Education, Pankshin, Plateau State, Nigeria. Descriptive research design was adopted for this study. The population of the study was 862 staff comprised of academic and non-academic staff in the College. Multi-stage sampling technique was used to select 50 staff in five departments of the College. Researchers' designed closed ended questionnaire was the instrument for data collection. A reliability co-efficient of 0.72 was obtained through test re-test method. In this study, adopted questionnaire was used as the instrument for data collection. The study used descriptive and inferential statistics of mean and standard deviation to analyze the data collected. The findings revealed that technology has had a profoundly positive impact on educational management in Federal College of Education, Pankshin, streamlining processes, enhancing teaching and learning and reducing examination misconduct, but there is still a need for improvement in leveraging technology to prevent fraud. Administrators have mixed perceptions about the use of technology in educational management, agreeing that it has improved communication but disagreed that it has reduced workload or increased transparency. The challenges of technology in educational management included inadequate training, limited access to technology infrastructure, insufficient technical support, difficulties in integrating technology with traditional practices and financial constraints. The College through Human Development unit should provide adequate training for administrators on technology use and integration to enhance their management practices. In view of the findings of this study conclusion were made and recommendations were proferes accordingly.*

**Keywords:** Technology, Educational Management, ICT and Education

## Introduction

In the modern educational environment, technological integration into educational management has become increasingly important especially in higher education institutions. Emerging technologies, which are still in the early stages of development and have not yet realized all of their potentials, offer enormous potential to improve management effectiveness and change educational processes (Mosweu & Chaterera-Zambuko, 2021). These technologies include;

artificial intelligence, mobile learning and information and communication technologies (ICTs), have the potential to revolutionize how educational institutions operate, communicate and deliver learning experiences.

The efficient running of institutions depends on their management. Planning, arranging, coordinating and regulating educational activities are just a few of the many tasks that fall under the umbrella of educational management. The intricacies of today's educational demands are frequently too complicated for the old approaches to educational institution management to handle. As such, leveraging emerging technologies have significant function on effectiveness of educational management systems (Ikediugwu, Eze & Agada, 2017 & Kurniawan, Purnama, Siminto, Riady & Zaakiyyah, 2024). According to Eze and Agada (2023), technology can improve productivity and efficiency in educational settings. For instance, the use of ICTs in educational management can streamline administrative processes, facilitate communication among stakeholders and enhance the quality of educational delivery. Tertiary institutions progressively utilize technology, to reduce the costs and improve the efficiency of educational administration. Technology can be used to enrich and deepen skills, helps to relate school experiences to work practices, helps to create economic viability and contributes to radical changes in school, strengthens teaching and provides opportunities for connections between the institution and the world (Elechi, 2023). By leveraging technology, educational institutions can streamline resource allocation and planning, make data-driven decisions and enhance teacher development and student performance monitoring. Technology can help with active involvement with external stakeholders, better physical facility management, and environmental change adaption. Despite the recognized benefits, many institutions face challenges effectively adopting and integrating these technologies.

The Federal College of Education (FCE) in Pankshin, Plateau State, Nigeria, serves as a pertinent case study for examining the leverage of technology in educational management. As a higher education institution, FCE Pankshin is tasked with preparing future educators and equipping them with the necessary skills and knowledge to thrive in a rapidly changing educational environment. The college's administration plays a critical role in ensuring that educational practices align with contemporary technological advancements. Despite the potential benefits of technology, there is a need to assess how it influences educational management in the College, the perception of administrators regarding the use of technology and challenges faced in adopting these technologies.

### **Statement of the Research Problem**

Despite the important roles of technology in education, it is observed that Federal College of Education, Pankshin struggles with the effective integration of emerging technologies in its management practices, resulting in operational inefficiencies and outdated administrative processes. The lack of tools such as information management systems and data analytics hinders the college's ability to streamline operations and negatively affects educational outcomes, including student and staff engagement. Additionally, there is limited awareness among administrators about the benefits of technology in enhancing decision-making and communication, creating resistance to adopting innovative practices. Insufficient training for staff along with a lack of necessary infrastructure further complicates the integration of technology. Inadequate communication among stakeholders contributes to fragmented efforts in

technology implementation, preventing alignment with the institution's strategic goals. The researchers aim to identify ways to improve educational management through effective technology integration in Federal College of Education, Pankshin.

### **Objectives of the Study**

The main objective of this study investigated leverage of technology on educational management in Federal College of Education, Pankshin, Plateau State, Nigeria. The specific objectives are:

- i. determined the influence of technology on educational management in Federal College of Education, Pankshin.
- ii. assessed the perception of administrators on the use of technology on educational management in Federal College of Education, Pankshin.
- iii. find out the challenges of technology on educational management in Federal College of Education, Pankshin

### **Research Questions**

- i. How does technology influence educational management in Federal College of Education, Pankshin?
- ii. What is the perception of the administrators towards the use of technology on educational management at Federal College of Education, Pankshin?
- iii. What are the challenges of technology on educational management in Federal College of Education, Pankshin?

### **Methodology**

The study utilized a descriptive research design of the survey type, which captures a comprehensive snapshot of a population at a specific time. This flexible and cost-effective design allows for generalization to a broader population when a representative sample is used, making it suitable for exploring the leverage of technology on management in Federal College of Education, Pankshin, Plateau State, Nigeria. The study's population included 862 employees from the Federal College of Education, Pankshin, comprising both academic and non-academic staff (College Gazette, 2022). A multi-stage sampling technique was employed. First, a simple random sampling method selected one higher institution from six recognized institutions in Plateau State. Next, another simple random sampling identified 50 management staff from five departments at FCE Pankshin. Finally, a convenient sampling technique was used to select ten management staff from each of the following five units: Educational Foundations, Academic Planning, Registry, Examinations and Records, and Students' Affairs Directorate. The data collection instrument was a closed-ended questionnaire titled "Leverage of Technology on Educational Management Questionnaire (LTEMQ)." It consisted of 20 items based on a four-point Likert scale, ranging from strongly agree (4 points) to strongly disagree (1 point). Data collected from the questionnaires were sorted, coded, and analyzed using SPSS version 23.0. Descriptive statistics, including mean and standard deviation, were employed to interpret the responses. A mean score of 2.50 was set as the threshold for acceptance; scores above this were deemed valid, while those below were rejected.

### Data Presentation

**Research Question One:**How does technology influence educational management in Federal College of Education, Pankshin?

**Table 1: Mean Responses showing the Influence of Technology on Educational Management in Federal College of Education, Pankshin**

SA	Items	SA	A	D	SD	N	$\bar{X}$	Std. Dev
1	Technology has improved student registration and record-keeping in the College.	20	15	10	5	50	3.05	0.99
2	Online resources have enhanced teaching and learning in the College.	25	15	5	5	50	3.40	0.85
3	Technology has increased efficiency in administrative tasks.	18	20	7	5	50	3.06	0.93
4	The use of technology in management practices increases the efficiency of administrative processes.	22	18	5	5	50	3.24	0.92
5	Technology has improved communication between staff and students.	30	10	5	5	50	3.50	0.78
6	6. Online assessments have not reduced exam malpractice in the College.	10	15	15	10	50	2.55	1.01
<b>Overall Mean (<math>\bar{X}</math>)</b>							3.11	0.91

Table 1 shows the mean scores and standard deviation on the influence of technology on educational management in Federal College of Education, Pankshin. The table presented six items (1, 2, 3, 4, 5 and 6) which their mean scores (3.05, 3.40, 3.06, 3.24, 3.50 2.55) were above the criterion mean scores of 2.50 and standard deviation (SD) of 0.99, 0.85, 0.93, 0.92, 0.78 and 1.01. The overall mean score for the influence of technology on educational management was 3.11 (SD = 0.91), indicating that, respondents view technology as beneficial in enhancing educational management practices in FCE Pankshin.

**Research Question Two:** What is the perception of the administrators towards the use of technology on educational management at Federal College of Education, Pankshin?

**Table 2: Mean Responses showing the Perception of Administrators on the Use of Technology on Educational Management in Federal College of Education, Pankshin**

SA	Items	SA	A	D	SD	N	$\bar{X}$	Std. Dev.
7	I feel that technology has not reduced my workload in managing educational activities.	8	6	21	15	50	2.42	1.02
8	I think that our College has adequate technology infrastructure to support educational management.	12	17	12	9	50	2.86	0.99
9	I am confident that I am adequately trained to use technology for educational management.	15	18	10	7	50	3.06	0.94
10	I think that technology has improved communication between staff and students.	13	21	8	8	50	3.10	0.85
11	I believe that the use of technology has not increase transparency in educational management.	11	4	19	16	50	2.38	1.07
12	I feel that technology has helped to reduce errors in educational management.	14	17	8	11	50	2.76	0.95
<b>Overall Mean (<math>\bar{X}</math>)</b>							2.77	0.97

Table 2 shows the mean scores and standard deviation on the perception of the administrators towards the use of technology in educational management at Federal College of Education, Pankshin. The table presents six items, of which items 8, 9, 10 and 12 have mean scores of 2.86, 3.06, 3.10, and 2.76, above the criterion mean score of 2.50, with standard deviations (SD) of 0.99, 0.94, 0.85, and 0.95. Therefore, these items were accepted. Items 7 and 11 received mean scores of 2.42 and 2.38 with standard deviations of 1.02 and 1.07 below the criterion mean score which were rejected. The overall mean score 2.77 (SD=0.97) above the criterion mean score indicates that the respondents accepted most of the items except two.

**Research Question Three:** What are the challenges of technology on educational management in Federal College of Education, Pankshin?

**Table 3: Mean Responses showing Challenges of Technology on Educational Management in Federal College of Education, Pankshin**

SA	Items	SA	A	D	SD	N	$\bar{X}$	Std. Dev
13	Inadequate training of staff on technology use.	21	15	6	8	50	3.06	0.95
14	Limited access to technology infrastructure (e.g. computers, internet)	19	17	10	5	50	3.04	0.92
15	Low cost of maintaining and upgrading technology infrastructure.	4	6	22	18	50	1.68	0.96
16	Difficulty in integrating technology with traditional management practices	19	20	5	6	50	3.06	0.90
17	Insufficient technical support for technology-related issues.	17	19	9	5	50	2.94	0.88
18	The high cost of Internet broadband.	15	17	10	8	50	2.68	0.95
19	Sufficient budget allocation for technology upgrades and training programme	6	12	13	19	50	1.80	0.99
20	Irregular power supply in the College affects e-learning skills for educational management.	14	23	10	3	50	2.66	0.97
<b>Overall Mean (<math>\bar{X}</math>)</b>							2.57	0.92

Table 3 shows the mean scores and standard deviations regarding the challenges of technology on educational management in Federal College of Education, Pankshin. The table presents eight items, of which items 13, 14, 16, 17, 18 and 20 have mean scores of 3.06, 3.04, 3.06, 2.94, 2.68 and 2.66 above the criterion mean score of 2.50 with standard deviations (SD) of 0.95, 0.92, 0.90, 0.88, 0.95. Therefore, these items were accepted, indicating that respondents perceive inadequate training, limited access to technology infrastructure, insufficient technical support and difficulties in integrating technology as significant challenges. Items 15 and 19 received mean scores of 1.68 and 1.80 below the criterion mean score of 2.50 leading to their rejection. This means that the respondents disagreed that low cost of maintaining/upgrading technology infrastructure and sufficient budget allocation for technology upgrades and training programme were not the challenges of technology on educational management. The overall mean score for the challenges of technology on educational management was 2.57 (SD = 0.92), suggesting that respondents recognize six significant challenges posed by technology in educational management in FCE Pankshin.

### Discussion of the Findings

Findings from Table 1 revealed that technology has had a profoundly positive impact on various aspects of educational management in Federal College of Education, Pankshin. Specifically, technology has streamlined student registration and record-keeping processes, enhanced the quality of teaching and learning, and increased the efficiency of administrative tasks. Additionally, technology has facilitated communication between staff and students, fostering a more connected and collaborative educational community. Moreover, technology has been effective in reducing examination misconduct, particularly through online assessments.

However, despite this progress, there is still a need for improvement in leveraging technology to prevent the forging of fake results or grades in the name of one's gratification.

This finding is consistent with Ajuwon (2018) who discovered that technology and innovation has influenced educational management in Nigerian universities. Student registration processes have become faster and administrative tasks, such as record-keeping and data management, have also become more efficient. This finding also tallies with McCarthy, Maor, McConney and Cavanaugh (2023) who stated that the utilization of technology in educational management is anticipated to foster the creation of a more open, transparent and responsive system that aligns with the evolving needs of society. Babalola, Akinwumi and Alegbeleye (2021) revealed that record management is a predictor of administrative effectiveness. However, Ahmed and Jibia (2013) in exploring the trend and development of ICT, observed that given the method of record keeping in our schools, there is the need for schools to utilize the various information systems available to their own advantage. Unfortunately, this does not seem to be the case as many staff lack requisite skills in the use of ICT. Ajuwon noted that integrating technology into educational management is still a work in progress. Despite the introduction of technology to reduce examination malpractice, the finding of Adebisi (2019) disagreed that technology alone may not be enough to completely eliminate examination malpractice, as human factors such as corruption and unethical behaviour can still undermine the system.

The findings in Table 2 showed that administrators in Federal College of Education, Pankshin, have mixed perceptions about the use of technology in educational management. While they agree that technology has improved communication between staff and students, they disagree that it has reduced their workload or increased transparency in educational management. There is limitation of technology in addressing the complex issues of educational management. Despite the use of technology, administrators may still have access to the data stored in the laptops or desktops and be able to alter them, thereby compromising the integrity of the educational management process. Administrators have a neutral stance on the sufficiency of technology infrastructure and their own training in utilizing technology for educational management. This indicates that they are neither satisfied nor dissatisfied with the current state of technology infrastructure and their own abilities to leverage it effectively. However, they concur that technology has been beneficial in minimizing errors in educational management. The findings of Eze, Chinedu and Nwankwo (2018) concurred that technology infrastructure is often sufficient for educational management needs. Eze, et al., argue that with adequate training, administrators can effectively leverage technology to improve their management practices, thus reducing workload and enhancing transparency. The study of Livingstone (2012) also posited that technology has the potential to streamline educational management processes significantly. Livingstone stated that the perception of increased workload is often due to inadequate training and resistance to change rather than inherent limitations of technology.

## **Conclusion**

Based on the findings of the study, it was concluded that technology has positively impacted educational management in Federal College of Education, Pankshin, streamlining student registration, enhancing teaching and learning and increasing administrative efficiency. Technology has also facilitated communication, reduced examination misconduct and minimized errors in records keeping. However, there are still challenges to be addressed, including inadequate training, limited access to technology infrastructure and the need for

cohesive strategies to integrate technology with traditional management practices. Additionally, financial constraints and the lack of proper technical support hinder effective technology utilization. To fully leverage technology's potential, the institution must address these challenges and provide adequate training, infrastructure and support to ensure a more open, transparent and responsive educational management system.

### Recommendations

Based on the findings of this study, the following recommendations are made:

- i. The College through Human Development unit should provide adequate training for administrators on technology use and integration to enhance their management practices.
- ii. Government should allocate sufficient funds to the College procurement department in order to provide adequate technology infrastructure to all staff to facilitate efficient educational management.
- iii. Examination and Records Department should develop and implement cohesive strategies to integrate technology with traditional management practices and address examination malpractice.

### References

- Adebisi, T. (2019). Exam malpractice in Nigerian tertiary institutions: A threat to quality education, *Journal of Educational Research and Review*, 7(3), 34-41.
- Ahmed, M. & Jibia, J. (2013). Application of information communication technology (ICT) and records keeping in schools. *International Journal of Innovative Research and Development*, 2(1), 300-310.
- Ajuwon, P. O. (2018). Impact of technology on educational management in Nigerian Universities. *Journal of Educational Management*, 31(1), 34-45.
- Babalola, Y.T., Akinwumi, O.O. & Alegbeleye, G.O. (2021). Influence of record management Practices on administrative effectiveness in public secondary schools in Lagos State, Nigeria. *International Journal of Development Strategies in Humanities, Management and Social Sciences*, 11(1), 13-29.
- Chia, J.T., Suwa, T. G. & Bakhulpup, L.J. (2024). Competency needs of special education lecturers on utilization of e-learning skills for inclusive education service in Federal College of Education, Pankshin. *Being a Paper Presented at the 34<sup>th</sup> Annual National Conference of National Association for Exceptional Children (NAEC)*, 7<sup>th</sup> – 10<sup>th</sup> August, 2024, Abuja.
- Cloete, A.L. (2017). Technology and education: Challenges and opportunities. *HTS Teologiese Studies/ Theological Studies* 73(4), a4589.
- Elechi, C.N. (2020). Levels of application of technologies for educational management in Nigerian Tertiary institutions. *IAA Journal of Education*, 6(1), 24-31.



- Eze, S.C., Chinedu, E.O. & Nwankwo, J.I. (2018). Technology infrastructure and its impact on educational management in Nigeria: A study of selected universities. *Journal of Educational Technology Systems*, 46(3), 345-360.
- Eze, T.A. & Agada, C.F. (2023). Leveraging on emerging technologies in the management of secondary education in Enugu State, Nigeria. *ESUT Journal of Education (EJE)*, 6 (2), 36-43.
- Ikediegwu, N.P., Eze, T.A. & Agada, F.C. (2017). Principals' perception of information and Communications technology (ICT) enabled education in secondary schools in Enugu State. *International Journal of Contemporary Applied Sciences*, 4(2), 21-28.
- Johnson, A.M., Jacovina, M.E., Russell, D.E. & Soto, C.M. (2016). Challenges and solutions when using technologies in the classroom. In S.A. Crossley & D.S. McNamara (Eds.) *Adaptive Educational Technologies for Literacy Instruction* (13-29). New York: Taylor & Francis.
- Kurniawan, D.R., Purnama, Y., Siminto, F., Riady, Y. & Zaakiyyah, H.K.A. (2024). Technology integration in educational management: Its impact on community participation. *Jurnal Terobosan Peduli Masyarakat (TIRAKAT)*, 1 (1), 10-20.
- Livingstone, S. (2012). The impact of digital technologies on educational management: A review of the literature. *Educational Management Administration & Leadership*, 40(1), 5-20.
- McCarthy, A.M., Maor, D., McConney, A. & Cavanaugh, C. (2023). Digital transformation in education: Critical components for leaders of system change. *Social Sciences & Humanities Open*, 8(1), 100479. <https://doi.org/10.1016/j.ssaho.2023.100479>.
- Mosweu, O. & Chaterera-Zambuko, F. (2021). *Blockchain technology for records management in Botswana and Zimbabwe*. Doi: 10.4018/978-107998-6650-3.ch003.
- Oyediji, B.O. (2020). Role of technology in enhancing educational management in Nigerian Colleges of Education. *Journal of College Education*, 14(2), 123-135.