Sapientia Global Journal of Arts, Humanities and Development Studies (SGOJAHDS), Vol.7 No.1 March, 2023; p.g. 463 – 470; ISSN: 2695-2319 (Print); ISSN: 2695-2327 (Online)

IMPACT OF TECHNOLOGY INTEGRATION ON THE EFFECTIVE ADMINISTRATION OF TERTIARY INSTITUTIONS IN ENUGU STATE

MADUKA CHIKA GENEVIEVE (PhD)
University of Nigeria, Enugu Campus
E-mail: chika.maduka@unn.edu.ng
Phone No: +2348063960018

ABSTRACT

This study investigated the impact of technology integration on the effective administration of tertiary institutions in Enugu State. Two research questions guided the study while two null hypotheses were tested at .05 level of significance. The researcher adopted a descriptive survey research design for this study. The population for the study was 2826 respondents which comprised 1944 male and 882 female academic staff among tertiary institutions in Enugu State. The sample for the study was 283 respondents. The sample size was obtained using stratified proportionate random sampling technique. The instrument for data collection was a researcher structured questionnaire titled "Impact of Technology Integration on the Effective Administration of Tertiary Institutions Question (ITIEATIQ)". The instrument was subjected to face validation by three experts from the field of education. The reliability co-efficient of the instrument was determined using Cronbach Alpha method. The computation yielded .84 for cluster 1, .82 for cluster 2. The instrument had an overall reliability index of .82 which indicated that the instrument was reliable and, therefore, considered appropriate for use. Mean and standard deviation were used to answer the research questions, while t-test statistic was used to test the hypotheses. The findings of the study showed that technology integration impact human resource management and instructional delivery to a great extent. The researcher recommended among others that government should allocate resources to invest in up-to-date technology infrastructure and software solutions that support HR management and instructional delivery. This ensures that the technology remains relevant and capable of meeting the evolving needs of the organization.

Keywords: Impact, Technology Integration, Effective Administration, Tertiary Institutions.

Introduction

Education lies at the heart of every society. Education is the bedrock of moral training and acquisition of relevant values, knowledge and skills for the purpose of becoming functional members of society (Chidi, Lucky & Ikechukwu, 2019). Education is the process of facilitating learning, or the acquisition of knowledge, skills, values, beliefs and habits. It is an instrument par excellence for national development (Federal Republic of Nigeria (FRN), 2013). Education lays the foundational knowledge and skills necessary for success, paving the way for individuals to pursue specialized fields and advanced learning in tertiary education.

Tertiary education refers to the level of education beyond secondary schooling, typically encompassing post-secondary education options such as universities, colleges, vocational schools, and technical institutes. According to the Federal Republic of Nigeria (FRN, 2013), tertiary education is the entity that comprises the post-secondary section of the national education system supported by universities, polytechnics and college of education, including

college of technology, specialized teachers training colleges, related colleges and entities as they may be affiliated with them. Tertiary education aims to provide advanced learning and specialized knowledge in various fields, leading to degrees, diplomas, or certifications. Tertiary education today is increasingly characterized by the seamless integration of technology, revolutionizing traditional learning approaches and empowering students with innovative tools and resources.

Technology refers to the application of scientific knowledge for practical purposes, particularly in industry, commerce, and everyday life. It encompasses a wide range of tools, systems, methods, and processes developed to solve problems, facilitate tasks, and enhance human capabilities. According to Okechukwu and Ukeh (2020); Anselem and Ukeh (2023), technology integration is very important in the education sector. This is because, tertiary institutions utilize learning management systems (LMS) such as Moodle, Canvas, or Blackboard to deliver course materials, assignments, quizzes, and grades electronically. These platforms provide a centralized location for students to access resources, participate in discussions, submit assignments, and communicate with instructors. Technology integration in the administration of tertiary education is paramount, as it streamlines processes, enhances communication, and empowers administrators to effectively manage resources and facilitate a dynamic learning environment for students.

Meanwhile, administration refers to the process of organizing and coordinating resources, people, and tasks within an organization to achieve its goals efficiently and effectively. It involves planning, decision-making, coordinating, and controlling various activities to ensure smooth functioning and optimal performance of the organization. Wali (2018), described school administration as the coordination of human, material, and time-based resources aimed at achieving predetermined goals within a school setting. Effective administration refers to the successful management and coordination of resources, processes, and personnel within an organization to achieve desired goals and objectives efficiently and with high quality outcomes. It involves proficient decision-making, strategic planning, clear communication, efficient delegation of tasks, proper resource allocation, and continual evaluation and improvement of processes. Effective administration hinges on the seamless coordination and optimization of resources, with human resource management serving as a critical pillar in ensuring organizational success through strategic personnel planning, development, and engagement.

Human Resource Management (HRM) is the strategic approach to managing an organization's workforce, encompassing recruitment, training, development, and retention of employees to achieve organizational goals (Siddique & Aslam, 2020). It involves aligning human capital with the organization's objectives and fostering a productive and positive work environment (Dessler, Chhinzer, & Cole, 2019). Human Resource Management (HRM) has undergone significant transformations over the years, and technology has played a pivotal role in driving these changes. In the modern era, the integration of technology into HRM processes has revolutionized the way organizations manage their workforce. Human resource management plays a pivotal role in shaping instructional delivery methodologies and ensuring their alignment with organizational goals and employee development strategies.

Instructional delivery refers to the methods, techniques, and strategies used by educators to present content and facilitate learning experiences for students. It encompasses various approaches such as lectures, discussions, demonstrations, hands-on activities, multimedia presentations, and online instruction. Instructional delivery refers to the methods and strategies employed by educators to impart knowledge and facilitate learning experiences in a classroom or instructional setting (Tucker, 2020). It encompasses various techniques such as lectures, demonstrations, discussions, and multimedia presentations aimed at engaging learners and enhancing comprehension (Ormrod, Schunk, & Gredler, 2020). Instructional delivery, particularly in the context of technology integration, can be influenced by gender dynamics, shaping how educators design and implement teaching strategies to accommodate diverse learning preferences and needs.

Gender refers to the socially constructed roles, behaviors, expressions, and identities that societies attribute to individuals based on their perceived sex. It encompasses a range of characteristics, including cultural, societal, and personal traits that are often associated with masculinity and femininity. Gender is distinct from biological sex, which refers to the physical attributes such as anatomy and chromosomes typically categorized as male or female. Gender disparity in technology usage persists, with women being underrepresented in STEM fields and facing barriers to access and participation (UNESCO, 2019). Studies show that cultural biases and societal expectations contribute to this gap, highlighting the need for comprehensive strategies to promote gender equality in technology (Stoet & Geary, 2018). It is based on the above background that this study examined the impact of technology integration in the effective administration of tertiary institutions in Enugu State.

Statement of the Problem

In the swiftly evolving contemporary landscape, the integration of technology holds pivotal importance across multiple spheres of society, notably within tertiary education. The integration of technology in tertiary institutions in Enugu State has brought about significant changes, impacting both human resource management and instructional delivery. However, there is a lack of comprehensive understanding regarding the extent of this impact. The problem arises from the potential mismatch between technological advancements and the capabilities of human resource management systems to effectively adapt. This disconnect could lead to inefficiencies in staff management, including issues such as training inadequacy and skill gaps. Additionally, there is a concern that the reliance on technology might inadvertently hinder personalized instructional delivery methods, affecting the quality of education. Furthermore, the unequal access to technology among staff and students may exacerbate disparities in educational outcomes. Insufficient infrastructure and support systems could impede the full realization of technology's potential benefits in administration and instruction. The rapid pace of technological evolution also poses a challenge in keeping up with current trends and best practices. Addressing these issues is crucial for optimizing the integration of technology in tertiary institutions and ensuring effective administration and instructional delivery in Enugu State.

Purpose of the Study

The main purpose of the study was to investigate the impact of technology integration in the effective administration of tertiary institutions in Enugu State. Specifically, the study sought to:

1. ascertain the impact of technology integration in the effective administration of tertiary institutions in Enugu State in the aspect of human resource management;
2. determine the impact of technology integration in the effective administration of tertiary institutions in Enugu State in the area of instructional delivery.

Research Questions

The following research questions guided the study:

1. To what extent does technology integration impact the effective administration of tertiary institutions in Enugu State, specifically concerning human resource management?
2. To what extent does technology integration impact the effective administration of tertiary institutions in Enugu State, particularly in the realm of instructional delivery?

Hypotheses

The hypotheses were formulated and tested at .05 level of significance:

H$_{O1}$: There is no significant difference between the mean ratings of male and female academic staff on the extent to which technology integration impact the effective administration of tertiary institutions in Enugu State as regards human resource management.

H$_{O2}$: There is no significant difference between the mean ratings of male and female academic staff on the extent to which technology integration impact the effective administration of tertiary institutions in Enugu State in terms of instructional delivery.

Research Method

The researcher adopted a descriptive survey research design for this study. Leedy and Ormrod (2013) clarified that the descriptive survey design is a methodology employed to investigate a population. The population for the study was 2826 respondents which comprised 1944 male and 882 female academic staff among tertiary institutions in Enugu State. The sample for the study was 283 respondents. The sample size was obtained using stratified proportionate random sampling technique. The instrument for data collection was a researcher structured questionnaire titled "Impact of Technology Integration in the Effective Administration of Tertiary Institutions Question (ITIEATIQ)". The items were structured on a four point rating scale of Very Great Extent (VGE) – 4 points, Great Extent (GE) – 3 points, Low Extent (LE) – 2 points and Very Low Extent (VLE) – 1 point. The instrument was subjected to face validation by three experts from the field of education. The reliability co-efficient of the instrument was determined using Cronbach Alpha method. The computation yielded .84 for cluster 1, .82 for cluster 2. The instrument had an overall reliability index of .82 which indicated that the instrument was reliable and, therefore, considered appropriate for use. Mean and standard deviation were used to answer the research questions, while t-test statistic was used to test the hypotheses. However, out of the 283 copies of questionnaire administered, the researcher with the help of two research assistants retrieved 269 (190 from male and 79 from female academic staff) copies which resulted to 95.05% return rate. The research questions were answered using mean and standard deviation while the hypotheses were tested with t-test statistic at .05 level of significance. In rating the mean scores, each response option had a numerical value based on real limit of numbers: VGE = 3.50-4.00; GE = 2.50-3.49; LE = 1.50-2.49; VLE = 0.00-1.49. The null hypothesis was not significant when the probability values were greater than .05, but significant when the probability values were less than .05.

Data Analysis and Results

Research Question 1: To what extent does technology integration impact the effective administration of tertiary institutions in Enugu State, specifically concerning human resource management?

Table 1: Mean ratings of male and female academic staff on the impact of technology integration on the effective administration of tertiary institutions in terms of human resource management

	ITEMS	Male Academic Staff- 190			Female Academic Staff - 79		
S/N	**Technology integration impacts human resource management by:**	$\overline{x}$	**SD**	**Dec**	$\overline{x}$	**SD**	**Dec**
1.	making it easier for HR to implement training and development programs for staff.	2.62	.91	GE	2.59	.92	GE
2.	streamlining recruitment in terms of automating job postings.	2.60	.90	GE	2.62	.93	GE
3.	implementing digital performance management systems to track employee performance.	2.55	.92	GE	2.57	.90	GE
4.	analysing data related to employee engagement.	2.53	.94	GE	2.50	.92	GE
5.	supporting HR in managing remote teams through virtual collaboration tools.	2.56	.90	GE	2.57	.95	GE
6.	facilitating communication between HR departments, faculty, staff, and students through email.	2.51	.92	GE	2.54	.90	GE
	Cluster Mean/SD	**2.56**	**.92**	**GE**	**2.57**	**.92**	**GE**

In the above Table, the male academic staff mean ranged from 2.51 to 2.62, while the female academic staff mean ranged from 2.50 to 2.62 respectively. The values of the cluster mean are 2.56 and 2.57 with standard deviations of .92 and .92 respectively. The outcome of the data analyzed shows that technology integration impacts on the effective administration of tertiary institutions in Enugu State, specifically concerning human resource management to a great extent.

Research Question 2: To what extent does technology integration impact the effective administration of tertiary institutions in Enugu State, particularly in the realm of instructional delivery?

Table 2: Mean ratings of male and female academic staff on the impact of technology integration on the effective administration of tertiary institutions in the aspect of instructional delivery

	ITEMS	Male Academic Staff- 190			Female Academic Staff - 79		
S/N	Technology integration impacts instructional delivery by:	$\overline{x}$	SD	Dec	$\overline{x}$	SD	Dec
7.	providing access to vast amounts of educational resources such as e-books.	2.54	.98	GE	2.57	.91	GE
8.	enabling flexible learning opportunities.	2.62	.95	GE	2.63	.94	GE
9.	facilitating interactive learning experiences through multimedia elements such as videos.	2.55	.94	GE	2.58	.99	GE
10.	enabling students to collaborate with peers and instructors regardless of their physical location.	2.60	.93	GE	2.59	.92	GE
11.	enabling academic staff to tailor instruction to individual student needs.	2.65	.98	GE	2.63	.93	GE
12.	providing instant feedback to students and instructors.	2.59	.91	GE	2.58	.95	GE
	Cluster Mean/SD	**2.59**	**.94**	**GE**	**2.57**	**.92**	**GE**

In the above Table, the male academic staff mean ranged from 2.54 to 2.65, while the female academic staff mean ranged from 2.57 to 2.63 respectively. The values of the cluster mean are 2.59 and 2.57 with standard deviations of .94 and .92 respectively. The outcome of the data analyzed shows that technology integration impacts on the effective administration of tertiary institutions in Enugu State, particularly in the realm of instructional delivery to a great extent.

Hypotheses

H$_{01}$: There is no significant difference between the mean ratings of male and female academic staff on the extent to which technology integration impact the effective administration of tertiary institutions in Enugu State as regards human resource management.

Table 3: Summary of t-test Analysis of the Mean Scores of male and female academic staff on the extent to which technology integration impact the effective administration of tertiary institutions in Enugu State as regards human resource management

Group	n	$\overline{x}$	SD	df	p-value	Decision
Male Academic Staff	190	2.56	.92	267	.092	H_{01} not rejected
Female Academic Staff	79	2.57	.92			

Data in Table 3 show that at 267 degree of freedom, the p-value was .092 which is greater than the .05 level of significance set for this study. The null hypothesis was, therefore, not rejected which signifies that there is no significant difference between the mean ratings of male and

female academic staff on the extent to which technology integration impact the effective administration of tertiary institutions in Enugu State as regards human resource management.

H_{02}: There is no significant difference between the mean ratings of male and female academic staff on the extent to which technology integration impact the effective administration of tertiary institutions in Enugu State in terms of instructional delivery.

Table 4: Summary of t-test Analysis of the Mean Scores of male and female academic staff on the extent to which technology integration impact the effective administration of tertiary institutions in Enugu State in terms of instructional delivery

Group	n	$\bar{x}$	SD	df	p-value	Decision
Male Academic Staff	190	2.59	.94	267	.089	H_{02} not rejected
Female Academic Staff	79	2.57	.92			

Data in Table 4 show that at 267 degree of freedom, the p-value was .089 which is greater than the .05 level of significance set for this study. The null hypothesis was, therefore, not rejected which signifies that there is no significant difference between the mean ratings of male and female academic staff on the extent to which technology integration impact the effective administration of tertiary institutions in Enugu State in terms of instructional delivery.

Discussion of Findings

The finding of the study showed that technology integration impacts on the effective administration of tertiary institutions in Enugu State, specifically concerning human resource management to a great extent. The finding is in accordance with Vohra, Shrivastava, Premi and David (2015), posited that technology improves the efficiency, innovation reduces the time help in easier functioning of the organisation. The finding also agrees with Karasek (2019), who posited that technology plays a significant role in the recruitment of staff.

The finding of the study showed that technology integration impacts on the effective administration of tertiary institutions in Enugu State, in terms of instructional delivery to a great extent. The finding is in accordance with Anselem and Ukeh (2023), who posited that technology plays a significant part during teaching and learning processes.

Conclusion

The findings of this study portrayed the significant impact of technology integration on the effective administration of tertiary institutions in Enugu State, particularly in the areas of human resource management and instructional delivery. The evidence presented suggests that technology plays an important role in enhancing efficiency and effectiveness in these critical areas. As educational institutions continue to evolve in response to the demands of the modern era, embracing technological advancements becomes imperative for staying relevant and meeting the needs of diverse stakeholders.

Recommendations

Based on the findings, the following recommendations were proffered:

1. Government should allocate resources to invest in up-to-date technology infrastructure and software solutions that support HR management and instructional delivery. This ensures that the technology remains relevant and capable of meeting the evolving needs of the organization.
2. The management of tertiary institutions should implement regular training sessions for staff to ensure they are proficient in using the technology integrated into HR processes and instructional delivery methods. This training should focus not only on technical skills but also on pedagogical strategies for effective teaching with technology.

REFERENCES

Anselem, A.A. & Ukeh, B.O. (2023). Effect of zoom technology on senior secondary students' academic achievement in word processing in Ogbia Local Government Area of Bayelsa State. *Journal of Association of Vocational and Technical Educators of Nigeria (JAVTEN), 28*(1), 262-272.

Besong, J.B. (2014). Principals' administrative effectiveness and staff productivity in selected secondary school in South West Region, Cameroon. *International Journal of Academic Research in Management,* 3(2), 155-166

Chidi, N., Lucky, A.J. & Ikechukwu, O.H. (2019). Personnel management practices adopted by principals in administration of secondary schools in Awka Education Zone, Anambra State, Nigeria. *Educational Process: International Journal, 8*(1), 32-43.

Dessler, G., Chhinzer, N., & Cole, N. (2019). *Human resource management in Canada (14th ed.).* Toronto, Canada: Pearson Canada.

Federal Republic of Nigeria (2013). *National policy on education* (6th edition).Yaba, Lagos: NERDC Press.

Karasek, A. (2019). The use of information technology in human resource management in American enterprises. *Annales Universitatis Mariae Curie-Skłodowska, sectio H – Oeconomia*, 53(2), 38-44.

Leedy, P.D. & Ormrod, J.E. (2013). *Practical Research: Planning and Design.* 10th Edition, Merrill/Prentice Hall, Boston.

Okechukwu, O. & Ukeh, B.O. (2022). Awareness of cloud computing services in tertiary institutions in Enugu State. *International Technology Research Journal, 8*(1), 27-34.

Siddique, M., & Aslam, H.D. (2020). Human resource management practices and employee performance: Moderating Role of Human Capital. *Pakistan Journal of Commerce and Social Sciences, 14*(3), 739-758.

Vohra, A., Shrivastava, A., Premi, R. & David, S. (2015). Impact of information and communication technology in HRM. *International Journal of Computer Science and Information Technology Research, 3*(2), 511-516.

Wali, W.I. (2018). Nigerian Police Force and administration of the school in the period of security challenges in Nigeria. *International Journal of Scientific Research in Education,* 11(1), 117-126.