

Availability and Extent of Utilization of Information and Communications Technology (ICT) Facilities for Human Resource Management Colleges of Education in Anambra State, Nigeria

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Abstract

This study investigated the availability and extent of utilization of Information and Communications Technology (ICT) facilities for human resource management in colleges of education in Anambra State, Nigeria. Six specific purposes, six research questions and six hypotheses guided the study. Descriptive survey design was adopted for the study. The population of the study comprised all 145 HODs in 145 departments in the two colleges of education in Anambra State; which was used as the sample for the study. Availability of ICT Facilities Checklist (AICTC), Utilization of Information and Communication Technology Facilities Rating Scale (UICTRS), and Extent of Utilization of Information and Communication Technology Facilities Rating Scale (EUICTRS) structured by the researcher were used for data collection. The instruments were face-validated by three experts in the Faculty of Education, Nnamdi University, Awka. Trial test was conducted to determine the internal consistency of the instrument. Internal consistency co-efficient of 0.85, 0.81, and 0.94 were obtained for availability of computers, internet services, and projectors respectively using Kuder-Richardson (K-R21) formula; while internal consistency co-efficient of 0.87, 0.91, and 0.89 were obtained for utilization of computers, internet services, and projectors respectively. Data collected were analyzed using frequency counts, percentage, mean, standard deviation, chi-square and t-test. The p-value was used to determine the significant difference at 0.05 level of significance for all hypotheses. The findings of the study revealed that ICT facilities (computers and internet services) are available, utilized and are utilized to a high extent in colleges of education in Anambra State. The findings also showed that projectors are not available, not utilized and are utilized to a low extent in the institutions. From the result of hypotheses, no significant difference was established in the responses of HODs on all the variables of the study. Thus, the study concluded that while colleges of education in Anambra State demonstrate a high utilization of ICT facilities such as computers and internet services, the availability and utilization of projectors are notably low. Based on the findings, the study recommended among others that governments should prioritize funding for the development and maintenance of ICT infrastructure in colleges of education, ensuring reliable access to technology for both students and educators.

Keywords: Availability; Utilization; Information and Communications Technology; Facilities; Human Resource Management; Colleges of Education

Introduction

Globally, education is regarded as one of the most important investments a country can make for the socio-economic and political transformation. This is premised on the ability of education to make individuals become proactive, secure firm control over their lives and widen their range of available options. In this regards, Onyali and Nnebedum (2016) posited that the disparity in the development between developed and developing nations has been linked with education. This is perhaps why different countries accord recognition to education by investing heavily in this sub-sector. The United Nations Educational and Scientific Cultural Organization (UNESCO, 2020) considered education to be a basic human right and it is closely related to development in all segments which includes social and human development. Tertiary education involves all formal post-secondary education, including public and private universities, colleges of education, technical training institutes, and vocational schools. It is considered to be a major contributing factor to industrialization; political stability; national integration and unity; economic; and social stability of nations (Nebo, Nwankwo and Okonkwo, 2015). Tertiary education is instrumental in fostering growth, reducing poverty, and boosting shared prosperity. This means that tertiary education is the best means for developing national consciousness and very important in the development of high level manpower for driving the techno-economic advancement of any serious nation. Tertiary education in Nigeria aims to provide advanced academic and professional training to students across a wide range of disciplines. The Nigerian tertiary education system is structured into various levels, including universities, polytechnics, and colleges of education. Colleges of Education are institutions that specialize in providing teacher education and training programmes. They focus on preparing individuals to become educators, teaching them the necessary skills, knowledge, and pedagogical techniques required to effectively teach students at various levels, from early childhood to secondary education (Offorma and Chukwuma-Nosike, 2016). These colleges offer programmes such as bachelor's degrees in education, postgraduate diplomas in education, and even advanced degrees in educational leadership or curriculum development. The primary aims of the Colleges of Education in Nigeria according to the National Policy on Education (FRN, 2013) are to: prepare teachers for the country's basic education system through equipping them with the necessary knowledge, skills, and attitudes required to effectively teach various subjects at the primary and junior secondary levels; promote professionalism among teachers by providing them with a solid foundation in pedagogical principles, teaching methodologies, and classroom management techniques; and engage in research and innovation in the field of education, which includes conducting studies to improve teaching methods, curriculum development, and educational policies. In essence, colleges of education in Nigeria aimed to collectively contribute to the development of a well-trained and professional teaching workforce that can positively impact the education system and society as a whole in Nigeria. Admittedly, attainment of the primary objectives of colleges of education as specified in the policy document demands effective management of the human resources in the school organization.

Human resources are the staff and students in schools. They encompass all professionals, non-professionals and students involved in the operation of a school, such as administrators, teachers, counselors, librarians, custodians, and cafeteria workers, who play various roles in maintaining a conducive learning environment. Madudili (2022) viewed human resources as

individuals employed and serviced by an educational institution, including teachers, administrators, support staff, and students who contribute to the daily functioning of the school. Human resource management is concerned with how the school head provides leadership to the staff and students for the achievement of the organizational objectives as well as the satisfaction of the personnel in the school. This is an important role the school head performs Uzoehina (2016) described human resource management as the effective administration of the individuals who work within an educational institution. The scholar also held that human resource management is concerned with helping staff to meet the demands of their professional roles. This is based on the fact that if teachers must teach learners the requisite skills for learners to become global citizens, the teachers must be professionals of the highest standards. In the other hand, Chiemeka-Unogu (2018) maintained that human resource management is a field in education that focuses on the holistic development and support of staff and students in a college or university setting. It includes various services and activities such as staff recruitment, staff development, discipline, counseling, housing, career services, student organizations, and more. The goal is to enhance the overall staff and student experience, promote personal and academic growth, and address the diverse needs of staff and students. This field plays a crucial role in creating a positive and enriching campus environment. However, the utilization of Information and Communication Technology (ICT) facilities by HODs can help provide the needed quality human resources which will not only be productive but will also enable schools to sustain themselves in today's competitive environment without compromising standard.

Information and Communication Technology (ICT) is a broad term that encompasses technologies used to manage and communicate information. It includes various hardware, software, and networks that enable the acquisition, storage, processing, and transmission of data. Thus ICT could be seen as the combination of networks, hardware and software as well as the means of communication, collaboration and engagement that enable the processing, management and exchange of data, information and knowledge (Federal Ministry of Education, [FME], 2020). In the concept of ICT the words "Information Technology, (IT)" and "Communication" are particularly important. IT refers to the study or use of an electronic process for storing information and making it available. Communication on the other hand has been used synonymously with transmission, information sharing, correspondence, interaction, connection or conveyance in different places. It refers to the process of transmitting and receiving data, information, or messages using various technological tools and systems. This can include methods such as emails, text messages, voice or video calls, and data exchange over computer networks. It is line with this that ICT was defined by Agede (2020) as all digital tools, systems, and applications that facilitate the creation, manipulation, and exchange of information and communication. ICT plays a crucial role in our modern world and is a driving force behind advancements in fields like telecommunications, the internet, computer systems, and more. It has transformed the way we live, work, and communicates, making it an integral part of our daily lives. The use of ICT in education has paved the way for a more student-centred learning setting. ICT according to Jegede (2013) improves the quality of instruction by increasing the desire of the learner to explore, discover, and create unique solutions to learning problems. The teacher on the other hand is no longer seen as the primary source of information but with the use of ICT, he is now viewed as a support, collaborator, and a coach for students as they learn to gather and evaluate information for

themselves. In essence, the use of ICT changes the roles of both teachers and students in the teaching and learning processes. Although, ICT facilities recorded in literature are numerous, NOUN (2018) enumerated the following ICT facilities as been ideal and widely used in education for human resource management: computers, internets, projectors, interactive whiteboards, Learning Management Systems (LMS), tablets and e-Readers, educational software, audiovisual equipment, Virtual Reality (VR), smartphones, video conferencing tools, 3D printers, cloud storage, and social media. In this study, the first three aforementioned variables by NOUN (computers, internet services, and projectors) were adopted as internet facilities that could be utilized by HODs for human resource management in colleges of education in Anambra State.

Computers remain the focal point of ICT because it refers to the range of tools and techniques that are computer based; hence the benefits of ICT centre round the benefits derived from the use of computer. A computer according to NOUN (2018) is a programmable, multiuse machine that accepts data – raw facts and figures and processes, or manipulates it into information we can use. Its purpose is to speed up problem solving and increase productivity. In the 1950s and 1960s, computers were enormous machines affordable only by institutions. Today, they come in variety of shapes and sizes that can be classified according to their processing power. Kwacha (2017) defined computer as any machine or device which, under the control of a stored programme, can accept data in a prescribed form process the data and supply the results as information in a specified form. They can perform a wide range of tasks, from calculations and data processing to running applications, browsing the web, and more. Computers come in various forms, such as desktops, laptops, smartphones, and servers, and have become an integral part of modern life, impacting almost every aspect of society. They are useful in the management of human resources in the school such as: payroll processing, staff and students' record management, staff training and development, communication and collaboration among others (Osofisan, 2013). However, computers could improve access to information, communication, data management, and overall efficiency in managing human resources in colleges of education if connected to the internet facilities.

The Internets, also known as the “Net”, “Information Superhighway”, and “cyberspace”, are the collection of computer networks that links millions of computers and tens of millions of people worldwide. Computer on the Internet are linked together by a maze of interconnections sort of like a spider's web (Orlando, 2013). According to Williams and Avwiri (2016), the Internet – “the mother of all networks” is the heart of the Information Age. These networks link educational, commercial, nonprofit, and military entities, as well as individuals. The Internet can be seen as a ‘liberator’, ‘instructor’ and ‘assistant’ to every individual and organizations like schools that are conscious of providing and receiving information and utilizing these to manage human resources such as: job posting, online training, record keeping, students' admission and influence positively the society in which we live. Similarly, projector is another internet facility used in education for human resource management.

Projectors are important for providing a quality work environment that encourages effective human resource management in the school organization. Projector refers to an optical device that projects an image onto a surface, commonly a projection screen. It is used to project rays of light, especially an apparatus for projecting film on a screen. Justice et al. (2018) defined projector as an output device that can take images generated by a computer or Blu-ray player and

reproduce them onto a screen, wall, or other surface. In the context of human resource management in schools, Vitanova, Atanasova-Pachemska, Iliev and Pachemskad (2015) described projector as a visual aid tool that enables educators and human resources professionals to display and share information, presentations, and data with a large audience. Hence, projectors play important roles as ICT facilities in human resource management within educational institutions. However, studies by scholars have affirmed that instructions could be presented through the multimedia equipment thus, raising the standard or the quality of presentation. Through the use of ICT, quick and concise presentation is enhanced (Ezeifedigbo, 2022). Okolocha and Nwadiani (2015) reiterated that tertiary institutions are now taking the advantage of the benefits that ICT offers.

Most institutions have computerized their systems for use at examinations, student registration, staff attendance and time management, work scheduling and fostering, payroll processing, performance evaluation, payment of fees and other similar administrative operations are no longer handled manually (Rogina, 2012). According to Siddiquah and Salim (2017), ICT has made networking possible and has reduced the bottleneck of accessing information regarding admission and other related functions. School management no longer need to be on the necks of examining bodies like West African Examinations Council (WAEC) and National Examinations Council (NECO) to confirm students' results since this is done on-line. In the same vein, Unegbu, Ogugua, Nnadimele and Nse (2020) re-affirmed that individual students can access their results with the use of scratch cards. Lecturers/teachers can link up with their students at various locations at the same time. This is done through teleconferencing or videoconferencing; which is a very vital improvement that ICT offers in Distance Learning.

Statement of the Problem

Information and communication technology is already a vital factor in the successful development of education; therefore, teaching and learning for the new emerging societies require availability and effective utilization of ICT'S to facilitate instructional delivery. The Federal Republic of Nigeria in 2002, in line with the global best practices in the field of education came up with a national IT policy. The national IT policy's strategies for education include the integration of IT into the mainstream of education, training and the establishment of facilities for electronic and distance learning networks and ensuring internet connectivity among others in all levels of education; especially in tertiary level of education that is viewed as a critical component of human development worldwide. A level that provides trained individuals, who develop the capacity and analytical skills that drive local economies and are responsible for important decisions which affect every society. Despite these efforts by both government and non-governmental agencies in making ICT facilities readily available and accessible to schools, a preliminary visit to the colleges of education in Anambra State revealed that some vital areas of ICT utilization in teaching appear not to have been attended to. The implications of this scenario are far reaching to the area of education management in general and human resource management in particular. If HODs do not take full advantage of ICT in effective management of the human resources in their schools, the chances to expand educational opportunities or improve the quality of existing education could be lost. These concerns however raised the following questions: are ICT facilities adequately available in colleges of education in Anambra State for effective personnel management? To what extent are the available ICT facilities in colleges of education in Anambra State being utilized for personnel management? Hence, the problem of this study was to

investigate availability and extent of utilization of Information and Communications Technology facilities for human resource management in colleges of education in Anambra State.

Purpose of the Study

The main purpose of this study was to investigate availability and extent of utilization of Information and Communications Technology facilities for human resource management in colleges of education in Anambra State. In specific terms, the study sought to:

1. ascertain the availability of computers for human resource management in colleges of education in Anambra State;
2. find out the availability of internet services for human resource management in colleges of education in Anambra State;
3. determine the availability of projectors for human resource management in colleges of education in Anambra State;
4. ascertain the extent of utilization of computers for human resource management in colleges of education in Anambra State;
5. find out the extent of utilization of internet services for human resource management in colleges of education in Anambra State; and
6. determine the extent of utilization of projectors for human resource management in colleges of education in Anambra State.

Research Questions

The following questions were raised to provide answers for the study:

1. Are computers available for human resource management in colleges of education in Anambra State?
2. Are internet services available for human resource management in colleges of education in Anambra State?
3. Are projectors available for human resource management in colleges of education in Anambra State?
4. What is the extent of utilization of computers for human resource management in colleges of education in Anambra State?
5. What is the extent of utilization of internet services for human resource management in colleges of education in Anambra State?
6. What is the extent of utilization of projectors for human resource management in colleges of education in Anambra State?

Hypotheses

The following hypotheses were formulated for the study and tested at 0.05 level of significance:

1. FCOETU and NOCOEN HODs do not differ significantly on the availability of computers for human resource management.
2. FCOETU and NOCOEN HODs do not differ significantly on the availability of internet services for human resource management.
3. FCOETU and NOCOEN HODs do not differ significantly on the availability of projectors for human resource management.

4. There is no significant difference in the mean ratings of FCOETU and NOCOEN HODs on the extent of utilization of computers for human resource management.
5. There is no significant difference in the mean ratings of FCOETU and NOCOEN HODs on the extent of utilization of internet services for human resource management.
6. There is no significant difference in the mean ratings of FCOETU and NOCOEN HODs on the extent of utilization of projectors for human resource management.

Theoretical Framework

Theoretically, the study was anchored on Technology Acceptance Model (TAM) and Resource-Based View (RBV) Theory. TAM is designed to explain and predict the acceptance and adoption of new technologies or information systems by users. TAM posits that these factors directly influence a user's attitude and behavioral intention toward adopting a new technology, which in turn affects the actual usage of the technology. It's a straightforward model that helps explain and predict user acceptance of technology, making it valuable in the design, availability and utilization of Information and Communications Technology (ICT) in the management of school resources (human and material resources). The Resource-Based View (RBV) Theory is a framework used to analyze an organization's competitive advantage by focusing on its internal resources and capabilities. It suggests that an organization's success depends on its ability to leverage unique and valuable resources. The theory focuses on the strategic utilization of human resources to gain a competitive advantage. It helps schools identify and leverage their internal resources to gain a competitive advantage in providing quality education. It underscores the importance of treating educators and staff as valuable resources and strategically managing them through human resource management practices in schools to achieve and maintain a competitive edge in the education sector.

Methods

Descriptive survey research design was utilized for the study. According to Nworgu (2015), descriptive survey is the design which aims at collecting data on, and describing in a systematic manner the characteristic features or facts about a given population. The study was carried out in Anambra State, South-East, Nigeria using colleges of education. The population of the study comprised all the 145 heads of departments from the two colleges of education in Anambra State - Nwafor Orizu College of Education, Nsugbe and Federal College of Education Technical, Umunze. The entire population of the study was used due to the relatively manageable size; hence, the study adopted census technique. Structured rating scale titled "Availability of ICT Facilities Checklist (AICTC) and Extent of Utilization of Information and Communication Technology Facilities Rating Scale (EUICTRS)". The instrument was face validated by three experts in Faculty of Education Nnamdi Azikiwe University, Awka. The responses of the HODs were analyzed to measure the internal consistency of the items in Section B of the rating scale (i.e clusters I-III) and Section C of the rating scale (i.e clusters I-III). Internal consistency co-efficient of 0.85, 0.81, and 0.94 were obtained for availability of computers, internet services, and projectors respectively using Kuder-Richardson (K-R21) formula; while internal consistency co-efficient of 0.87, 0.91, and 0.89 were obtained for utilization of computers, internet services, and projectors respectively. The researchers administered the instrument to the respondents with the help of six research assistants. Descriptive statistics (frequency, percentage, mean and standard

deviation) were used to answer the research questions. In determining the availability of ICT, 50% and above was pegged as available and below 50% was regarded as not available; while in determining the agreement level of HODs, aggregate mean score was used to ascertain the mean score of principals' agreement level. For the purpose of this study, the mean score of 2.50 and above was grouped as Agree while those with 2.49 and below was grouped as Disagree. Chi-square and independent t-test was used for testing the null hypotheses at 0.05 level of significance. The p-value was used to determine the significance of the difference for all hypotheses. The decision rule was: a null hypothesis was not accepted where the calculated p-value was less than the stipulated level of significance (0.05). The reverse is the case where the calculated p-value was greater than the stipulated level of significance. All analyses were carried out using Statistical Package for Social Science (SPSS) Version 25.

Results and Findings

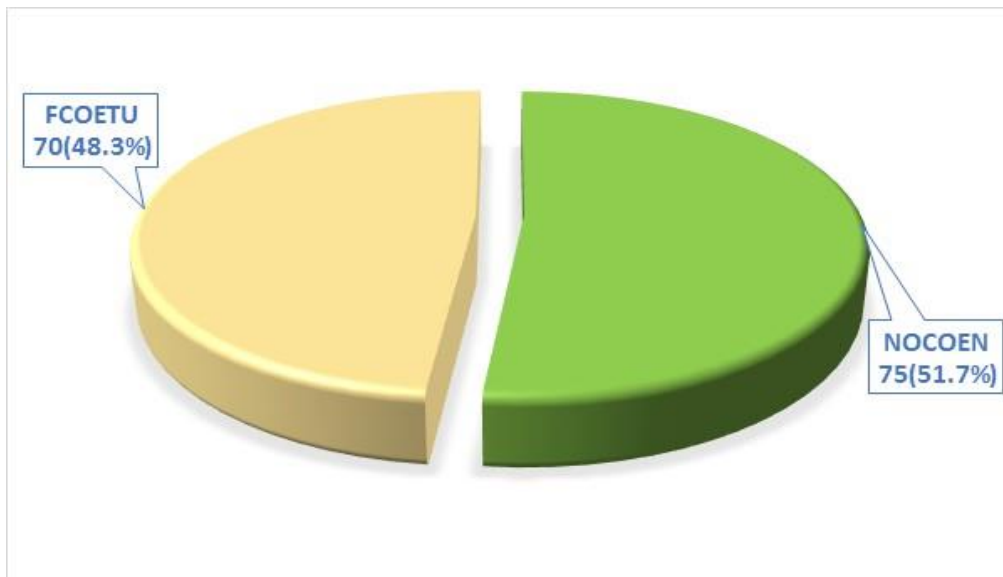


Fig 3: Institutions of the respondents
Source: Field Survey, 2023.

Figure 3 displays the location of the number of HODs in colleges of education in Anambra State. The outcome indicated that 75(51.7%) of the research participants were heads of departments in Nwafor Orizu College of Education (NOCOEN), Nsugbe, Anambra State while 70(48.3%) of the research participants were heads of departments in Federal College of Education Technical Umunze (FCOETU), Anambra State. This signifies that NOCOEN slightly has more departments and HODs than FCOETU.

Analysis of Research Questions and Test of Null Hypotheses

The following research questions were answered and null hypotheses tested at 0.05 level of significance.

Research Question One: Are computers available for human resource management in colleges of education in Anambra State?

Table 1: Frequency and percentage responses on the availability of computers for human resource management

S/N	ITEMS	NOCOEN (N = 70)				FCOETU (N = 68)				Remark
		Available Freq.	%	Not Available Freq.	%	Available Freq.	%	Not Available Freq.	%	
1	Availability of Computers	67	95.7	3	4.3	66	97.1	2	2.9	Available

Table 1 shows the frequency and percentage responses on availability of computers for human resource management in colleges of education in Anambra State. The analysis indicated that computers are available for human resource management in colleges of education as over 50% of the HODs (NOCOEN [95.7%] and FCOETU [97.1%]), affirmed that computers are provided for their departments for human resource management.

Hypothesis One:

H₀: FCOETU and NOCOEN HODs do not differ significantly on the availability of computers for human resource management.

H₁: FCOETU and NOCOEN HODs differ significantly on the availability of computers for human resource management.

Table 2: Chi-square analysis on the differences in FCOETU and NOCOEN HODs on the availability of computers for human resource management

Source of Variation	N (138)	Df	α	χ^2 Cal	χ^2 Crit.	P-value	Remark
NOCOEN	(N=70)	1	0.05	1.63	3.84	0.28	No Sig.
Aware	67(95.7)						
Not aware	3(4.3)						
FCOETU	(N=68)						
Aware	66(97.1)						
Not aware	2(2.9)						

The analysis in Table 2 shows that there is no significant difference in the responses of HODs in NOCOEN and FCOETU on the availability of computers for human resource management as the calculated p-value (0.28) is greater than the stipulated 0.05 level of

significance. The null hypothesis of no significant difference between the two groups was therefore upheld.

Research Question Two: Are internet services available for human resource management in colleges of education in Anambra State?

Table 3: Frequency and percentage responses on the availability internet services for human resource management

S/N	ITEMS	NOCOEN (N = 70)		FCOETU (N = 68)		Remark				
		Available Freq.	%	Not Available Freq.	%		Available Freq.	Not Available Freq.	%	
2	Availability of Internet Service	43	1.4	27	8.6	46	7.6	22	32.4	Available

The analysis in Table 3 presents the frequency and percentage responses on the availability of internet services for human resource management in colleges of education in Anambra State. The analysis revealed that over 50% of the HODs (NOCOEN [61.4%] and FCOETU [67.6%]) acknowledged the availability of internet facilities in their departments for human resource management.

Hypothesis Two:

H₀: FCOETU and NOCOEN HODs do not differ significantly on the availability of internet services for human resource management.

H₁: FCOETU and NOCOEN HODs differ significantly on the availability of internet services for human resource management.

Table 4: Chi-square analysis on the differences in FCOETU and NOCOEN HODs on the availability of internet services for human resource management

Source of Variation	N (138)	Df	α	χ^2 Cal	χ^2 Crit.	P-value	Remark
NOCOEN	(N=70)	1	0.05	2.05	3.84	0.19	No Sig.
Aware	43(61.4)						
Not aware	27(36.6)						
FCOETU	(N=68)						
Aware	46(67.6)						
Not aware	22(32.4)						

The chi-square analysis presented in Table 4 shows that no significant difference in the responses of HODs in NOCOEN and FCOETU on the availability of internet services for human resource management their institutions as the calculated p-value (0.19) is greater than the

stipulated 0.05 level of significance. The null hypothesis of no significant difference between the two groups was therefore upheld.

Research Question Three: Are projectors available for human resource management in colleges of education in Anambra State?

Table 5: Frequency and percentage responses on the availability of projectors for human resource management

S/N	ITEMS	NOCOEN (N = 75)		FCOETU (N = 75)		Remark				
		Available Freq.	Not Available %	Available Freq.	Not Available %					
3	Availability of Projectors	13	18.5	57	81.5	15	2.1	53	77.9	Not Available

The responses of HODs on the availability of projectors for human resource management in colleges of education in Anambra State are displayed in Table 5. The results showed that over 50% of the HODs (NOCOEN [18.5%] and FCOETU [22.08%]) confirmed that projectors are not available in their departments for human resource management.

Hypothesis Three:

H₀: FCOETU and NOCOEN HODs do not differ significantly on the availability of projectors for human resource management.

H₁: FCOETU and NOCOEN HODs differ significantly on the availability of projectors for human resource management.

Table 6: Chi-square analysis on the differences in FCOETU and NOCOEN HODs on the availability of projectors for human resource management

Source of Variation	N (138)	Df	α	χ^2 Cal	χ^2 Crit.	P-value	Remark
NOCOEN	(N=70)	1	0.05	3.29	3.84	0.08	No Sig.
Aware	13(18.5)						
Not aware	57(81.5)						
FCOETU	(N=68)						
Aware	15(22.1)						
Not aware	53(77.9)						

In Table 6, the item on the availability of projectors for human resource management in colleges of education in Anambra State had p-value (0.08) greater than the stipulated 0.05 level of significance. This stipulates that there is no significant difference in FCOETU and NOCOEN

HODs' responses on the availability of projectors for human resource management in colleges of education in Anambra State.

Research Question Four: What is the extent of utilization of computers for human resource management in colleges of education in Anambra State?

Table 7: Mean ratings and standard deviation of HODs on the extent of utilization of computers for human resource management in colleges of education in Anambra State

S/N	ITEMS	NOCOEN (N = 70)		Remark	FCOETU (N = 68)		Remark
		\bar{X}	SD	Remark	\bar{X}	SD	
	In my department computers are utilized:						
1	To maintain comprehensive digital records of all teaching staff.	3.35	0.74	HE	3.17	0.93	HE
2	To streamline the payroll process, ensuring accurate payment of salaries to teaching staff.	3.40	0.79	HE	3.05	0.93	HE
3	To mark teachers' attendance digitally, making it easier to monitor their movement.	3.19	0.71	HE	2.98	0.78	HE
4	To manage staff professional development programmes, including online courses.	3.40	0.79	HE	2.96	0.90	HE
5	To analyze data related to teacher evaluations, making it easier to conduct performance appraisals.	3.03	0.88	HE	2.77	0.87	HE
6	To maintain the security of personnel records by restricting access to unauthorized personnel.	2.68	0.84	HE	2.58	0.77	HE
7	To maintain comprehensive electronic student records, including personal information.	3.15	0.91	HE	3.07	0.76	HE
8	To Manage student' financial aid applications through computerized systems.	3.07	0.81	HE	3.38	0.87	HE
9	To categorize students' applications based on the admission requirements.	3.16	0.78	HE	3.36	0.86	HE
10	To Implement Learning Management Systems (LMS) for students' course materials.	3.35	0.74	HE	2.77	1.00	HE
	Average	3.18	0.80	HE	3.01	0.87	HE

Table 7 shows the mean ratings and standard deviation of HODs on the extent of utilization of computers for human resource management in colleges of education in Anambra State. The results indicated that the average mean scores of HODs in NOCOEN and FCOETU on the extent of utilization of computers for human resource management are 3.18 and 3.01 with corresponding standard deviations of 0.80 and 0.87 respectively. This implies that HODs in the colleges of education in the state agreed that computers are utilized at high extent for human resource management. Consequently, the standard deviation scores of 0.80 and 0.87 show that the mean extent computer utilization scores of HODs are clustered around the mean scores and this indicates homogeneity of colleges of education HODs' responses.

Hypothesis Four:

H₀: There is no significant difference in the mean ratings of FCOETU and NOCOEN HODs on the extent of utilization of computers for human resource management.

H₁: There is significant difference in the mean ratings of FCOETU and NOCOEN HODs on the extent of utilization of computers for human resource management.

Table 8: T-test comparison of FCOETU and NOCOEN HODs mean ratings on the extent of utilization of computers for human resource management

Source of Variation	N	Mean	SD	Df	α	T-Cal	T-Crit.	P-value	Remark
NOCOEN	70	3.18	0.80	136	0.05	-1.15	1.96	0.25	No Sig.
FCOETU	68	3.10	0.87						

The t-test analysis presented in Table 8 shows that there is no significant difference in the mean ratings of HODs of NOCOEN and FCOETU on the extent of utilization of computers for human resource management in colleges of education in Anambra State. This was shown by the calculated p-value (0.25) which is greater than the stipulated 0.05 level of significance. Therefore the null hypothesis of no significant difference between the two groups was upheld.

Research Question Five: What is the extent of utilization of internet services for human resource management in colleges of education in Anambra State?

Table 9: Mean ratings and standard deviation of HODs on the extent of utilization of computers for human resource management in colleges of education in Anambra State

S/N	ITEMS	NOCOEN (N = 70)		Remark	FCOETU (N = 68)		Remark	
		\bar{X}	SD	Remark	\bar{X}	SD		
	In my department internet services are utilized:							
11	To provide access for mental health resources through video conferencing.	2.13	0.48	LE	2.30	0.90	LE	

12	To post teaching vacancies which enable interested candidates to apply online.	2.69	0.71	HE	2.96	0.86	HE
13	By teachers to submit their job applications through online application forms.	2.91	0.81	HE	3.09	0.72	HE
14	To schedule interviews for potential candidates, including video interviews for remote applicants.	2.83	0.84	HE	2.79	1.05	HE
15	To provide online courses for teachers' professional development digitally.	3.02	0.89	HE	2.92	0.91	HE
16	To conduct online assessments for students thereby reducing paperwork.	2.52	1.04	HE	2.61	0.94	HE
17	To provide e-learning platforms that enhances resources accessibility remotely.	2.60	0.92	HE	2.91	0.84	HE
18	To facilitate communication among the human resources in the school.	3.08	0.64	HE	3.05	0.83	HE
19	To access online databases for background verification of candidates' qualifications.	2.32	0.75	LE	2.22	0.87	LE
20	By students to effectively complete their enrollment processes online.	2.88	0.91	HE	2.91	0.81	HE
	Average	2.70	0.80	HE	2.78	0.88	HE

The results displayed in Table 9 show the mean ratings and standard deviation on the extent of utilization of internet facilities for human resource management in colleges of education in Anambra State. The results revealed that the average mean scores of HODs in NOCOEN and FCOETU on the extent of utilization of computers for human resource management are 2.70 and 2.78 with corresponding standard deviations of 0.80 and 0.88 respectively. This affirms that the extent of utilization of internet services by HODs in the colleges of education for human resource management is high. Thus, the standard deviation scores of 0.80 and 0.88 shows that the mean extent internet services utilization scores of HODs are clustered around the mean scores and this indicates homogeneity of colleges of education HODs' responses.

Hypothesis Five:

H₀: There is no significant difference in the mean ratings of FCOETU and NOCOEN HODs on the extent of utilization of internet services for human resource management.

H₁: There is significant difference in the mean ratings of FCOETU and NOCOEN HODs on the extent of utilization of internet services for human resource management.

Table 10: T-test comparison of FCOETU and NOCOEN HODs mean ratings on the extent of utilization of internet services for human resource management

Source of Variation	N	Mea	SD	Df	α	T-Cal	T-Crit.	P-value	Remark
NOCOEN	70	2.70	0.80	136	0.05	-0.78	1.96	0.44	No Sig.
FCOETU	68	2.78	0.88						

In Table 10, the calculated p-value (0.44) of the items enumerated was greater than the stipulated 0.05 level of significance. This shows that there is no significant difference in the mean ratings of FCOETU and NOCOEN HODs on the extent of utilization of internet services for human resource management in colleges of education in Anambra State. Thus, the null hypothesis of no significant difference between the two groups was not rejected.

Research Question Six: What is the extent of utilization of internet services for human resource management in colleges of education in Anambra State?

Table 11: Mean ratings and standard deviation of HODs on the extent of utilization of computers for human resource management in colleges of education in Anambra State

S/N	ITEMS	NOCOEN (N = 70)			FCOETU (N = 68)		
		\bar{X}	SD	Remark	\bar{X}	SD	Remark
	In my department projectors are utilized:						
21	For professional presentations at conferences to showcase the institution's achievements.	1.95	0.85	LE	1.41	1.04	LE
22	To deliver professional development programmes for employees.	3.05	0.82	HE	2.85	1.09	HE
23	By teachers to collaboratively update the college's curriculum.	2.13	0.48	LE	2.32	0.95	LE
24	By educators to share lesson plans for other lecturers to utilize them.	2.25	0.76	LE	2.43	0.85	LE

25	To present data that relate to students' academic performance.	2.17	0.89	LE	2.04	0.92	LE
26	For presentations during parent-teachers' meetings to share students' progress.	2.26	0.84	LE	2.30	0.72	LE
27	To foster interactive learning environments where teachers can involve students more effectively.	2.11	0.96	LE	2.27	0.85	LE
28	In administrative purposes such as displaying college timetables to keep students informed.	1.89	1.02	LE	1.83	0.97	LE
29	To display visual aids to enhance the understanding of complex subjects.	3.10	1.02	HE	2.96	1.00	HE
30	By lectures to display images from various educational websites make learning more immersive.	2.00	1.00	HE	1.97	0.90	LE
Average		2.29	0.86	LE	2.24	0.93	LE

The mean and standard deviation scores in Table 11 show that the extent of utilization of projectors for human resource management by HODs in colleges of education in Anambra State is low. The mean and standard deviation scores of 2.29 and 2.24 with the standard deviation of 0.86 and 0.93 for HODs of NOCOEN and FCOETU respectively indicate a negative mean score among HODs towards effective utilization of projectors for human resource management in colleges of education in Anambra State. More so, the standard deviation scores of 0.82 designates that the mean extent of projectors utilization scores of HODs are clustered around the mean scores and this indicates homogeneity of colleges of education HODs' responses.

Hypothesis Six:

H₀: There is no significant difference in the mean ratings of FCOETU and NOCOEN HODs on the extent of utilization of projectors for human resource management.

H₁: There is significant difference in the mean ratings of FCOETU and NOCOEN HODs on the extent of utilization of projectors for human resource management.

Table 12: T-test comparison of FCOETU and NOCOEN HODs mean ratings on the extent of utilization of projectors for human resource management

Source of Variation	N	Mean	SD	Df	α	T-Cal	T-Crit.	P-value	Remark
NOCOEN	70	2.29	0.86	158	0.05	-0.49	1.96	0.63	No Sig.
FCOETU	68	2.24	0.93						

The analysis presented in Table 12 shows that there is no significant difference in the mean ratings of FCOETU and NOCOEN HODs on the extent of utilization of projectors for human resource management in colleges of education in Anambra State. This was shown by the calculated

p-value (0.63) which was greater than the stipulated 0.05 level of significance. Therefore the null hypothesis of no significant difference between the two groups was upheld.

Discussions of Findings

The analysis in Table 1 indicated that computers are available for human resource management in colleges of education in Anambra State. The analysis in Table 2 also showed that HODs in NOCOEN and FCOETU do not differ significantly in their response on the availability of computers for human resource management in colleges of education in Anambra State. Therefore, the two results showed that HODs in colleges of education in Anambra State irrespective of their institution admitted that computers are readily available in their departments for human resource management. The results above are in agreement with the results of an earlier study by Wordu, Jaja and Gideon (2022) which found that laptop computers, printers, radio and television sets, educational software are ICT resources available for enhancing teachers' instructional delivery in private secondary schools in Port Harcourt Metropolis, Rivers State. On the other hand, the results are not in agreement with Apagu and Wakili's (2015) study that examined the availability and utilization, the benefits and challenges of ICT facilities in teaching and learning of Vocational and Technical Education in Yobe State Technical Colleges. The study found that computers among other ICT facilities were lacking in technical colleges in the State; and teacher and students' exposure to ICT facilities was low despite the benefits of ICT in instructional delivery in technical colleges. Nwachukwu (2019) also found that very few ICT facilities are available for the teaching and learning of social studies in junior secondary schools in Awgu Local Government Area of Enugu State. The divergence in the findings of Apagu and Wakili's study and the present study may be because the former was carried out in Gombe State, a state in Northern Nigeria regarded as one of the less advantaged education wise; where quality teachers are in short supply irrespective of the huge resources allocated to education. Anambra State on the other hand is a State in South Eastern Nigeria which is among the most educated states in Nigeria, where priority is given to education and every effort humanly possible are made to provide both human and materials resource that will enhance its continuous provision for the citizens. More so, the divergence could be as a result of the level of education studied. Apagu and Wakili's study was conducted in secondary schools while the current study was conducted in tertiary institution where more emphasis are laid on the use of ICT facilities for producing advanced education and specialized knowledge in various fields.

On the extent of utilization of computers for human resource management in colleges of education in Anambra State, results in Table 7 showed that HODs agreed that they utilized computer to a high extent for human resource management. In table 8, the results showed that there is no significant difference in the mean ratings of HODs in NOCOEN and FCOETU on the extent of utilization of computers for human resource management in colleges of education in the State. The above results concur with Ajeigbe, Ogunsakin and Al-Hikmah (2015) study which revealed that computer studies teachers highly utilize computers in teaching of computer studies in secondary schools in Ife Central Local Government Area of Osun State. The findings also agree with the findings of a study carried out in Anambra State by Agogbua and Chukwudolue (2022) on the availability and utilization of Information and Communications Technology by secondary school teachers for global competitiveness. More so, the researchers found that there is no significant difference in the mean ratings of male and female teachers on the extent of utilization

of computers and other ICT facilities by secondary school teachers in Anambra State for global competitiveness. In contrary, the finding of this study is not in agreement with the study by Nwuke and Ucheju (2021) who examined the availability and utilization of ICT in secondary schools in Rivers State, Nigeria. Their study found that ICT are not accessible and utilize in secondary schools in Rivers State. The study observed that most secondary schools (private and public) do not adequately utilize computers and other ICT facilities for various instructional and administrative purposes. Thus, it has to be noted that though dissimilar results were obtained by aforementioned study, the difference in the findings may be attributed to chance. Clearly, some other reasons may be adduced for this. It could be the nature of educational policy, financial capacity or perception of the school administrators in the schools studied by Nwuke and Ucheju.

The frequency and percentage responses of HODs in Table 3 revealed that internet services are available for human resources management in colleges of education in Anambra State. In table 4, the results also revealed that HODs in NOCOEN and FCOETU do not differ significantly in their responses on the availability of internet services for human resources management in colleges of education in Anambra State. In disagreement with the findings of this study, Emeasoba and Nweke (2016) study on the level of availability and utilization of ICT facilities in teaching and learning of OTM in polytechnics in South Eastern States, Nigeria found that internet facilities, computer facilities, telecommunication facilities, and multimedia are available at a low extent. Similarly, Kehinde (2021) also found that many relevant ICT facilities such as internet resources, computers telecommunications among others were not available in state secondary school in Kwara State; that students have low access to available ICT facilities (internet resources, telecommunications, and computers) for learning. The disparities in the findings could have been caused by a number of factors. Citing Technology Acceptance Model (TAM), the unavailability of internet facilities can be attributed to the factors that are personal or circumstantial to the institutions and the administrators. It could also be that the administrators' perception on the usefulness and ease of use of internet service are negative, hence, there is no need to push for their provision. Similar to the findings of this study, Wordu, Jaja and Gideon (2022) found that internet facilities, computers, printers among other ICT resources are available for enhancing teachers' instructional delivery in private secondary schools in Portharcourt Metropolis, Rivers State. The study findings are also in congruence with Onu, Nuru and Babefemi (2023) study which established that ICT facilities such as internet facilities, computers, printers, cell phones, and telecommunications are moderately available in colleges of education in Northwest, Nigeria. The study further established that male and female teachers in the colleges of education in Northwest do not differ significantly on the availability of the facilities in their schools.

With respect to the extent of utilization of internet services for human resource management in colleges of education in Anambra State, the findings as shown in Table 9 revealed that HODs accepted that they utilized internet services to a high extent for human resource management in colleges of education in Anambra State. In Table 10, the results also revealed that there is no significant difference in the mean ratings of HODs in NOCOEN and FCOETU on the extent of utilization of internet services for human resource management in colleges of education in Anambra State. Similar to the results of this study, Alpana and Jonali (2022) found that all the school administrators highly utilize ICT facilities which include internet services for the smooth running of school activities in secondary schools of Assam, Kamrup District, India. In Ife Central

Local Government Area of Osun State, the findings of the study by Ajeigbe, Ogunsakin and Al-Hikmah (2015) also revealed that the extent of usage of ICT facilities which include internet facilities in teaching of computer studies in secondary schools is high. Their study further established that there is no significant difference in the mean ratings of public and private secondary school teachers on the extent of utilization of internet facilities in the teaching of computer studies. Nevertheless, findings of this study are not in concordance with the findings of Kedir (2023) and Nwana, Ofoegbu and Egbe (2017). In the study by Kedir (2023), it was discovered that internet and other ICT facilities were utilized at low extent. The study further found that there is no significant difference in perception among teachers and students on the use of internet and ICT facilities for teaching and learning purpose in secondary schools in Silti Worda in Silti Zone, Ethiopia. Nwana, Ofoegbu and Egbe (2017) also found that internet and other ICT facilities needed for the teaching of computer education are not been utilized by teachers in secondary schools in Anambra State. The inconsistency in the findings of the aforementioned studies and the present study may be because policy makers and administrators were not responsive and are resistant to change; as a result, ICT facilities are not provided in schools for effective utilization by the teachers.

The results in Table 5 indicated that projectors are not available for human resource management in colleges of education in Anambra State. The results in Table 6 also indicated that HODs in NOCOEN and FCOETU do not differ significantly in their responses on the availability of projectors for human resource management in colleges of education in Anambra State. The findings of this study on availability of projectors for human resource management in colleges of education in Anambra State are supported that of another study. Ayeni and Ogunbameru (2013) research on the level of availability and utilization of Information and Communications Technology (ICT) facilities for attainment of quality learning outcomes in secondary schools in Ondo State, Nigeria, found that computer sets, printers and bulletin boards are the most commonly available ICT facilities for the attainment of quality learning outcomes in Ondo State, Nigeria. Their study also found that other ICT facilities which include projectors are not available. The findings showed that students and teachers do not differ significantly in their response on the availability of projectors and other ICT facilities for attainment of quality learning outcome in secondary schools in Ondo State. Nonetheless, findings discordant with the present results were revealed by Wordu, Jaja and Gideon (2022) in a study on availability of ICT resources for enhancing teachers' instructional delivery in private secondary schools in Port Harcourt Metropolis, Rivers State. The study found that power point projectors, computers, printers and other ICT resources were available and adequate for enhancing teachers' instructional delivery in private secondary schools in Port Harcourt Metropolis, Rivers State. The disparity in the findings of Wordu, Jaja and Gideon and the findings of this study is rather surprising because one would have expected that projectors should have been massively provided in colleges of education owing to their importance and crucial position they occupy in achieving vision 2020 and the clamour for technology integration in education especially at the tertiary level. In any case, it could be that private secondary schools in Port Harcourt Metropolis, Rivers State prioritize interactive learning, visual aids, and multimedia presentation to enhance teaching methods; which can be achieved using projectors. In contrast, it could be that colleges of education in Anambra State might lack

projectors due to budget constraints, outdated infrastructure, or different educational approach that does not heavily rely on multimedia tools.

Regarding the extent of utilization of projectors for human resource management, the results as displayed in Table 11 showed that HODs consented that the extent of utilization of projectors for human resource management in colleges of education is low. Furthermore, the results as displayed in Table 12 showed that there is no significant difference in the mean ratings of HODs in NOCOEN and FCOETU on the extent of utilization of projectors for human resource management in colleges of education in Anambra State. The findings are corroborated by findings of other researchers. Firstly, in the study by Apagu and Wakili (2015), it was found that ICT facilities such as projectors educational software, computers among others are lacking in technical colleges in Yobe State and the extent of utilization of these facilities was low. Secondly, in another study by Nwana, Ofoegbu and Egbe (2017), it was also discovered that projectors and other ICT resources needed for teaching computer education in secondary schools in Anambra State are not been use by the teachers. However, the findings of this study do not concur with that of Agogbua and Chukwudolue (2022) study which investigated the availability and utilization of Information and Communications Technology (ICT) by secondary school teachers for global competitiveness in Anambra State, Nigeria. The result of this study revealed that ICT facilities which included projectors are available for secondary school teachers and to a great extent; teachers utilize these facilities for global competitiveness. Several reasons could have been responsible for the divergent results of the present and past studies. For instance, utilization of projectors requires availability of projectors in the institutions. May be the administrators in the present study are not keen on providing projectors due to financial constraints, varying technological proficiency among HODs and their staff, differences in infrastructure and resource availability. It could also be that the level of support from the school leadership and alignment of the technology with specific human resource management needs are not sufficient enough to inspire the provision and utilization of projectors in those institutions. Apparently, that is why Ogene (2020) recommended consistent implementation of training programmes and effective communication strategies for conveying human resource information through the use of projectors.

Conclusion

Based on the findings of the study, it is observed that, on one hand, HODs in colleges of education in Anambra State agreed that ICT facilities (computers and internet services) are available and utilized to a high extent for human resource management. On the other hand, projectors (ICT facility) are not available and are utilized to a low extent by the HODs in the institutions. Thus, the study concluded that that while colleges of education demonstrate a high utilization of ICT facilities such as computers and internet services, the availability and utilization of projectors are notably low. This suggests a potential gap or limitation in the integration of projector technology, which could be further explored to enhance educational resources and teaching methods in these institutions.

Recommendations

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

1. Governments should prioritize funding for the development and maintenance of ICT infrastructure in colleges of education, ensuring reliable access to technology for both students and educators.
2. Government and relevant commissions should continue implementing training and professional development programmes for HODs and lecturers to enhance their ICT skills, promoting effective integration of technology into the educational process.
3. School management should collaborate and foster partnerships with the private sector to provide colleges with up-to-date ICT equipment and resources, ensuring relevance to current global standards.
4. Policy makers should develop clear policy framework and flexible policies that encourage the use of ICT in education, addressing issues such as curriculum integration, data security, and digital literacy.
5. School administrators should ensure community involvement by engaging parents, local communities, and other stakeholders in discussions about the importance of ICT in education, fostering a supportive environment for its implementation.
6. School management should conduct periodic assessments to evaluate the functionality and effectiveness of ICT facilities, using feedback to make necessary improvements and upgrades.

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