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IMPACT OF INFORMATION COMMUNICATION TECHNOLOGY ON ACADEMIC PERFORMANCE OF STUDENTS, AT THE FEDERAL POLYTECHNIC, IDAH

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Abstract

This paper examined the Impact of Information Communication Technology on Academic Performance of Students at the Federal Polytechnic, Idah. Descriptive survey research was adopted for the study. The population comprises all the eligible 500 users of the library out of which two hundred and fifty (250) users were randomly selected. Random sampling technique was used to select the respondents. Structured questionnaire was used to collect data for the study, and analyzed with simple percentage and chi-square (x^2). The study revealed that the respondents had little knowledge of the availability of some of the ICT facilities. Users had varied reasons of using the ICT facilities. The study also revealed that means of accessing the facilities determined greatly the level of usage. And that they also encountered some hindrances in the process of making free use of the ICT facilities available. The research therefore concluded that, there was low level use of the ICT facilities in the institution. Finally, *the research made recommendation as follows. Effort must be intensified to create thorough awareness on the integration of ICT facilities into curricula activities of the school. Users must be prevailed upon to acquire more ICT skills to facilitate maximum usage. Training of information managers also needed to be consistent. ICT managers needed to collaborate with the authority concerned for necessary implementations of ICT improvement policy.*

Keywords: Academic, Awareness, Availability, Communication, Impact, Information, Performance. Technology.

Introduction

ICT has become an important source of innovation and improvement of efficiency for many sectors across the globe. ICT stands for Information and Communication Technology that provides access to information technology (IT). This includes: internet, wireless networks, cell phone and other communications medium. (Basri, 2018). ICT adoption in the institutions of higher learning is understood as a gradual switching not only in administrative activities like students' admission, registration and evaluation but also developing a customized Learning Management System (I.M.S) and transferring all the course and the related data onto it.

Word processing, Blogs, Wikis (what I know), Web creation and design, Emails, Drawing and graphics programs, Digital video, spreadsheets and Database, Web searching information literary skills, Computers, internet, word processors (web. 2.0) etc.

Adams (2016), described information technology as application of computers and telecommunications equipment to store, retrieved, transmit and manipulate data, often in the context of a business or other enterprise. The information communication technology has consistently been proven a powerful double – edge sword with a capacity for both overwhelming good and devastating evil, all depending on the skill

and values of the users' in harnessing its power in either side or both directions. Meladi & Awolusi (2019), referred ICT to a set of technological tools that are used to communicate, manage (input, transmit, disseminate and output) information, the tools include television, radio, internet, computers, social media and other computers software. However, I will like to describe ICT as the way in which technology processes and open door to knowledge information from telecommunication. Among the telecommunication gadgets are web, mobile phone, wireless network and so on.

Statement of the Problem

ICT has transformed the nature of education and the roles of students and teachers in an academic environment. The developed and underdeveloped countries of the world are paying more attention to the integration of ICT into their curriculum (Humblu & Tereen, 2021). I discovered that few or absence of research in this area in the institution. Hence the study on impact of ICT on academic performance of students in the Federal Polytechnic Idah

Objectives of the Study

The study aimed at finding out:

1. ICT facilities available for use in the institution
2. To identify the purpose of their using the ICT facilities
3. To highlight the ways and how students access the ICT facilities in the institution
4. To explore the Challenges faced by students in getting information

The following hypotheses were drawn to form the barometer for the research methodology

1. There is no significant relationship between the ICT facilities available for use and the users
2. There is no significant relationship between the ICT facilities and purpose of usage
3. There is no significant relationship between ICT facilities available and how the students access them.
4. There is no significant relationship between exploitation of the ICT facilities and the challenges encountered.

Review of Related Literature

Initially, information sources were dominated by print media based, such as books, newspapers, journals and offline government-based publication, but now information is available in more diverse forms such as databases and the internet. Humbi & Tareen (2021), opined that there has been a widespread belief that information and communication technologies (ICTs) can play a major role in transforming and modernizing our everyday lives, as well as educational structures and learning methods. In the education sector over the past few years, ICT has been significantly raising teaching and learning process. Therefore, the future learning environment will be impossible and difficult without ICT usage. They went ahead to list some importance of ICT application in the academic institution of higher learning to includes:

To improve teaching materials and make lesson more comprehensive, appealing and interactive; to boost teacher's teaching patterns and students' educational outcomes; lowering long-term educational cost; opened multiple doors of learning in educational environment; to help students availed their required information in a short time from anywhere; developed easy access to electronic

information i.e. electronic books/journals, databases, search engines, and web 2.0; helps students to innovate, enrich, accelerate and extend their skills to strengthen and change their learning pattern.

Ugwu & Kingsley (2021), posited that in the past few years the world has witnessed a phenomenal growth in communication technology, computer network and information technology. Development of new broadband, communication services and conveyance of telecommunications with computers have created numerous possibilities to the use of variety of new technology tools, for teaching and learning system. The abbreviation ICT stands for information and communication technology. This is a diverse set of technological tools and resources used to communicate, create, disseminate, store and manage information. They stated further, that information technology has the following characteristics:

Acquisition, storage, manipulation, management, transmission or receptions of data information; real means of accessing information; easy availability of updated information; connecting geographically dispersed regions; wider range of communication media; fundamentals facilities in many aspects of everyday life, both at home and in the work place. This has made it essential that all students gain the confidence and ability within the subject to prepare them for challenge of rapidly developing and changing technological world.

Ratheeweari (2018), averred that, ICT help to keep pace with the latest development, through the help of different technology. ICT offered multimedia of good teaching practices. ICT are making dynamic changes in the society. They are already influencing all aspects of life. The influences are felt more and more at schools, because ICT provide both students and teachers with more opportunities in adapting learning and teaching to individual needs, society is facing school aptly response to this technical innovation.

Das & Kumar (2020), stated that nowadays, Information and Communication Technology (ICT) becomes essential part of our life. In the 1960s, ICT was primarily introduced in the educational area. Since the inception, the students are utilized and benefited from ICT for their educational purpose. Meladi & Awolusi (2019), referred ICT to a set of technological tools that are used to communicate, manage, (input, transmit, disseminate and output). From their study, purpose of using ICT tools was be clearly stated as thus: For searching academic events; for compilation of assignment; to remain updated about trends of events; communication exchange; chats; feedback from the instruction; downloading research articles; reading e-mail and to occupy free time.

Lahtha (2021), asserted that, Technology has occupied a prominent position across the globe. It has come in to stay, but with its own advantages and disadvantages. Education is the process of facilitating learning or the acquisition of knowledge, skills beliefs and habits. Education frequently takes place under the guidance of educators, but the learners common – sense usage is what takes place during the process of teaching in the educational institutions. In the area of globalization and technological evolution, education is considered as a first, prominent step for easy human activity. Guided by the National Policy of ICT in school education, the education curriculum has been designed to create wider horizons for students and keep them informed of their career pursuits. The prevalence and rapid development of information communication technology has transformed human society from the information technology age to the knowledge age.

Appavoo (2020), defined ICT as all devices tools, content, resources, services, digital and those that can be deployed for realizing the goals of teaching learning,

enhancing access to reach resources, building of capacities, as well as management of the educational systems. This will not only include hardware devices connected to computers and software application but also interactive digital content, radio and television, services, web-based content repositories, interactive forums, learning management system and management information systems. Uche (2020) described some challenges of ICT application as thus: Leakage of privacy; lack of training on access to digital database; poor internet connectivity; receiving unwanted messages; some sites do not allow transfer of information etc.

Lahtha (2021), described accessibility of ICT as availability of IT in institutions of higher learning as the case may be in their labs, personal devices via Wi-Fi. Availability of online media via 24/7 access within the institution premises or outside the premises via Smartphone apps. Usage of ICT/ gadgets instead of the traditional chalk and board concept, usage of web matter for completion of assignments, usage of video conferencing for higher classes, monitoring of teachers and students, recording the attendance of student. It also refers to the usage of these resources for achievement of specified goals. Learning is a natural phenomenon and is natural to all organisms including both humans and animals. The process of acquiring new knowledge and new responses is the process of learning.

Methodology

Descriptive survey research design was adopted for the study. The population comprises all the users of the library. Random sampling technique was used to select respondents for the study. Therefore, 500 users patronise the library daily, out of which 250 users was selected for the study. Random sampling techniques was used to select the respondents. Questionnaire was the research instrument adopted for this study. The questionnaire was structured into two section A & B. Section A comprises respondents' bio data. Section B comprises of the question on the study impact of ICT on academic performance of the students. Two copies of the questionnaire were given to two senior researchers at the library and another copy was given to one English lecturer for validation. Their observation, correction and suggestion were taken into consideration. The researcher and few research assistants (SIWES Students) were used to administer the questionnaires and collected back the completed responses immediately they finished filling it. The responses of the respondents were collected and aggregated and presented with the use of simple percentages and chi-square.

Data Analysis

Research Hypothesis H_{01}: No significant relationship between the ICT facilities available for use and users.

Table 1: Data Presentation on Facilities Available for Use

S/N	Items	No. of Res.	Strongly Agreed	%	Agreed	%	Disagreed	%
1	Internet	250	150	60%	98	39%	02	1%
2	Phone/wireless network	250	110	44%	120	48%	20	8%
3	Word processing	250	114	47%	92	37%	44	18%
4	E-mails	250	50	20%	105	42%	95	38%
5	Blogs	250	25	10%	75	30%	150	60%
6	Wikis	250	25	10%	80	32%	145	58%
7	Digital video	250	30	12%	80	32%	140	56%
	Total		72	29%	93	37%	85	34%

$E = \frac{R_R \text{ X } C_T}{G_T}$

Where:

E = expected observation

R_T = Row total

C_T = Colum total

G_T = Grand Total

$X^2 = ? \left(\frac{(O-E)^2}{E}\right)$

= 517.77.

DF = (r - 1) (c - 1)

= (7 - 1) (3 - 1) = 12

q = 0.05

$X^2_{12.0.05}$ = 21.0.

Decision

X^2 = 517.77 > x212, 0.05 = 21.0, I therefore rejected H_{01} (the null hypothesis) and concluded that there is significant relationship between the ICT facilities available for use and users.

Research Hypothesis H_{02}: No significant relationship between the ICT tools and purpose of the usage.

Table 2: Data Presentation

S/N	Variables	No. of Response	Yes	%	No	%
1	To access research materials	250	180	72%	70	28%
2	To remain updated trends of events	250	150	60%	100	40%
3	For homework assignment	250	210	84%	40	16%
4	Reading for pleasure	250	230	92%	20	8%
5	Chats/E-mails	250	200	80%	50	20%
	Average total		194	78%	56	22%

Calculated X^2 = 85.61

$X^2_{84\ 0.05}$ = 9.5

Degree of freedom = (5 - 1) (2 - 1) = 4

Level of significance q = 0.05

Decision

Since $X^2 = 85.61 > X^2_{4,0.05}$. I therefore rejected the hypothesis of "no significant relationship between the ICT tools and the purpose of use'.

Research Hypothesis $H_{03:}$ No significant relationship between ICT facilities and how the students access them.

Table 3: Data Presentation on how Students Accessed ICT Facilities

S/N	Items	No. of Res.	SA	%	A	%	D	%	SD	%
1	E-library	250	120	48%	70	28%	50	20%	10	4%
2	School ICT	250	160	64%	20	8%	50	20%	20	8%
3	Dept. Library	250	90	36%	100	40%	50	20%	10	4%
4	Your phone	250	40	16%	50	20%	120	48%	40	16%
5	Student hostel	250	120	48%	50	20%	50	20%	30	12%
6	Common room	250	130	52%	40	16%	20	8%	60	24%
		-	110	44%	55	22%	57	23	28	11%

$E = \frac{R_R \text{ X } C_T}{G_T}$

Where:

E = expected observation

R_T = Row total

C_T = Colum total

G_T = Grand Total

$X^2 = ? \left(\frac{(O-E)^2}{E}\right)$

= 308.92

DF = (r - 1) (c - 1)

= (6 - 1) (4 - 1) = 15

q = 0.05

$X^2_{15.0.05}$ = 25.0.

Since X^2 calculated was 308.92 > $X^2_{15,0.05}$, I therefore reject Ho_2, that says: no significant relationship between ICT tools and how the students access them. That is, there is significant relationship between ICT tools and means by which the students accessed it for uses.

Research Hypothesis H_{04}: No significant relationship between exploitation of the ICT tools and challenges encountered.

Table 4: Data Presentation on Challenges Encountered

S/N	Items	No. of Res.	SA	%	A	%	D	%
1	Electricity failure	250	110	44%	60	24%	80	32%
2	Low ICT skills of users	250	80	32%	95	38%	75	30%
3	Lack of trained personnel	250	180	72%	50	20%	20	8%
4	Poor internet speed	250	200	80%	40	16%	10	4%
5	Unwanted messages	250	150	60%	70	28%	30	12%
	Average total	-	144	58%	63	25%	43	17%

Calculated $X^2 = 192.96$
$X^2_{8,0.05} = 15.5$
Degree of freedom (DF) = 8
Level of significance q= 0.05

Decision

Since $X^2 = 192.96 > X^2_{8,0.05} = 15.5$, I reject Ho_3 and conclude that there is very high relationship between the use of ICT tools and the problem

Summary

From the data obtained and analyzed, the following observation were made: The study revealed that there was great relationship between ICT facilities available for use and users because, of varied needs of users. This signify that there is great relationship between the ICT facilities and the users. It also indicates that what they see (or know is available) is what they will be eager to use. The finding of the study revealed that users'/students have diverse purposes for using the ICT facilities in the school. It was observed that users made use of ICT facilities they can easily accessed with minimum difficulties. The finding here revealed that users appreciate and embraced the facilities they can easily accessed over the clumsy facilities that is not easily accessible. From the finding, it was clearly indicated, that the users encountered some challenges in the process of using the ICT facilities in the institution. The study revealed that users encountered some challenges while using the ICT facilities especially at the e- library. This has been hampering the great impact that integration of ICT into teaching and learning could have made on education

Conclusion

From the result and discussion, the researcher concluded that there was low level of use of these ICT facilities, emphasizing on this study. Though this may be linked to poor reading culture of an average Nigeria. Nigerians are discovered to belief only in fire brigade approach to reading that is, when there is relative high demand for it, like when examination is drawn closer. Likewise, I will like to also conclude by saying that pervasiveness and inevitability of the application of information communication technology to our teaching and learning is incontrovertible. It has become a global standard and best practice.

Recommendations

Based on the conclusion of this study, therefore recommended that:

1. Effort should be intensified to create thorough awareness, on the integration of ICT facilities into curricula activities, in our various schools.
1. Users must be prevailed upon to acquire ICT skills intensively, to afford them the opportunity of using the tools effectively.
2. Training and retraining programs, should be organized consistently, for information managers to improve and update their knowledge on ICT facilities.
3. Information or ICT managers should endeavor liaise with authority concerned in the area of consistent update of the ICT facilities, to be able to meet up with the contemporary needs of the users.

Contributions to Knowledge

Integration of ICT to teaching and learning empowers teachers and learners' in transforming teaching and learning processes from being highly dominated teacher Centre to students'/ learners Centre. This transformation facilitates increased knowledge gains for learners, thereby exposes the learners to cotemporary issue in education for posterity's sake. It helps the students to develop: creativity, communication skills and other thinking skills. Acquisition of ICT skills by the students brings great benefit to them.

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