

ROLE OF INFORMATION TECHNOLOGY IN AN EDUCATIONAL SECTOR : A STUDY OF RAMAT -POLYTECHNIC, MAIDUGURI, NIGERIA

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ABSTRACT

The use of information technology has cut across all facets of human life and affected the way of handling issues positively. Many people are aware of computer skills and running activities but its acceptance as a working tool in organizations has not been ascertained. The fact that the role which computer plays in information technology is very vital for the smooth running and operations of an organization especially in Higher Education, cannot be denied. This study has attempted to identify the problems associated with the use of information technology tools in educational sector of Ramat Polytechnic (RAMPOLY) Maiduguri, Nigeria. It gives a clear picture of the advantages of applying information technology in the Universities. It also focuses on the use of computers by the non academic staff for their on-line research. The findings revealed that large percentage of the staff of Ramat Polytechnic are computer literate while small percentage are not. There is lack of information technological tools, inadequate personnel, ignorance, poor management, bad policies, lack of computers internet service, computer virus and inadequate power supply and unfavourable weather condition in Ramat Polytechnic, Maiduguri, Nigeria.

Keywords: Information, Information Technology, Nigeria, RAMPOLY, Education.

INTRODUCTION

The term "Information Technology" evolved in the 1970s. The concept however, can be traced to the world war 11 alliance of the military and industry in the development of electronics, computer and information theory. Information technology can be said to be a matter of concern with the furtherance of computer science and technology design development installation and implementation of information technology or information system. However, information technology is one of the main tools available to manage for coping with changes in knowledge more importantly today, information technology is the glue that hold the organization together, it is the instrument through which knowledge can be controlled and served as an arrow in the area of knowledge. (Madden and Rainnie 2004).

Therefore, utilizing computer hard ware and software will fasten the growth of the knowledge and its vision. In the last few decades there has been a revolution in the way education treats information and computer system, but today almost all leading universities are using information and information system as tools to facilitate educational system and policies, schools and ministries of education have developed a special category of information technology system to strategize and improve their educational system. (Kook 2005). In order to use information technology and computer as a study weapon, one must first understand where strategic opportunities for studies are likely to be found. The different modes of study and its environment have been used to identify area of the study where information system can provide advantages for students. Far back from now, there was little need for computer or technology in universities, lecturers generally did not need to know much on how data is collected, processed and distributed in their respective department and technology improvement was minimal, information itself was considered a face to face affair, but today students can't afford to ignore how information is handled by lecturers as technology has become the preferred method for attaining greater goal with little stress. This is possible only if proper handling and skilled techniques in operating this system are put in place in our organization and such institutions that strongly depend on various manipulations of data, therefore holding trust on computerization will enable them to achieve their goals. (Fiske and Hammond, 2007).

Kook (2005) is of the view that universities as an institution of higher learning use both information and information technology. This policy set forth the general rights and responsibilities and common uses of information technology in the school of technology education.

Vockell (1983), defined computer as an electro-mechanical device that is capable of handling large activities or data which is processed into information and is able to perform many tasks according to how it is programmed, while Sawyer and William (2001) defined computer as programmable multi-use machine that accept data or manipulates it into information. Computer has been defined in many ways by many

authors. To a child it is a box that contains game kits, to a teacher it is an educational package, to a mathematician it is a program that solves mathematical problem or equation while to an engineers it is a machine that helps in designing. Therefore, it's obvious that computer means different things to different people and professionals depending on how they use it.

The use of information technology has cut across all facets of human life and affected the way of handling issues positively. This is achievable through the use of computer internet and telephone services. Many people are aware of computer skills and running activities but its acceptance as a working tool in organizations has not been ascertained. The role which computer plays in information technology is very vital to the smooth running and operations of an organization, especially in RAM. POLY., school of technology education.

Objectives of the Study:

- To study the attitude of academic staff school of technology education towards the use of information technology tools.
- To identify the problems associated with the use of information technology tools in RAM. POLY.
- To study the extent to which the internet is used for sourcing and disseminating information.
- To study the extent to which computers are used for data processing in the study area.
- To study how information technology tools can be used to solve both academic and non-academic problems.

Research Questions:

To achieve the aims and objectives of the research work, the following research questions were formulated :

- What is the attitude of academic staff to the use of information technology?
- What are the problems associated with the use of information technology tools in RAM. POLY?
- Is the internet or computer used to process data in the school of technology education?
- What kinds of computers or technological infrastructures are available in RAM.POLY.? E.g. GSM, fax machines, internet networking and the mode of interconnectivities of the transmission medium in existence (wired or wireless).
- What are the barriers to information technology implementation in the study area?

Significance of the Study

This Study is important in many ways:-

- It gives a clear picture of the advantages of applying information technology in the Universities.
- It also shows how academic and non academic Staffs of universities are using information technology facilities for their on-line research, payment of salaries and issuing of transcript. For instance in the academic area both students and lecturers make use of internet for their research work, assignment checking of results, knowing about the school calendar and also e-learning is made possible with the advent of information technology in educational sector. On the other hand, organizations and ministries also use information technology to take decision that will eventually affect the running of their organization or ministries.

Thus, organizations will also show the improvement in the standard of education particularly in Polytechnic to both the academic and non – academic staff as well as the students, since the staff can pass on the knowledge what they have got to students, using laptop, computer to prepare their lessons, and improvement of this development can be useful. This study will further enable the policy makers to take appropriate policy with regards to the role of information and technology in educational sectors..

Research Design.

In this research study a non-experimental design or field study or survey is adopted, because some elements of the study (for instance the attitude of the subject) are not under the control of the researcher. This survey research therefore involved studying the "Role of information technology in an educational sector" (Ramat Polytechnic, Maidugiri (, RAM. POLY). The questionnaire was designed to obtain data from the subject over a stipulated period of time, it is also important to mention that not all the questionnaire issued out were returned..

Sample.

In this study, the population consisted of 2073, this number includes staff and the students of selected departments under study.

The population consists of 814 staff in registry department, 25 academic staff from education department, and 27 senior staff from bursary department, 372 parts one students, 333-part students, 307 parts three students, and 195 parts four students all from education department.

For the purpose of this study, a sample of 100 questionnaire was administered conclusion was made from respondents opinions, this was determined based on percentage.

Research instrument.

The instrument designed for the collection of data in this study is the questionnaire and observation (structured). The questions wereself designed and validated, formulated from the research questions in order to enable the researchers to find out the basic fact about the role of information technology in RAM. POLY.

Procedure for data collection.

The information or fact otherwise known as data were collected in this study using a structured questionnaire containing 15 questions with options and observation designed to extract responses from the subject after a stipulated time, 76 questionnaires were returned.

Method of data analysis.

Percentage responses were used for data analysis and tabulation.

Data Analysis and Interpretation:

The data being presented and analysed is mainly on data computed from the questionnaire and they are arranged in tabular format according to the research questions. The research questions are further interpreted and analysed according to their arrangement for vivid and clear result. Fifteen questions were formulated for this study. Each research question separately providing the items that were useful in answering question was treated separately providing the items that were useful in answering them. This is done to identify whether students' academic and non-academic staff of the area under coverage have either negative or positive attitude towards information technology.

The raw data gathered from this sample cannot be used to draw a concrete conclusion as such it was analysed item by item by adding all the numbers of respondents that responded in agreement or disagreement(yes or no) to each item.

Sequentially their responses were added and the final score expressed as percentage of the number of questionnaire. Therefore, simple percentage method was used in drawing conclusion which was presented in response table.

Table 1: Distribution of academic and non-academic staff of the area under coverage in RAM.POLY.

Gender	Frequency	Percentge(%)
Male	15	57.69%
Female	11	42.30%
Total	26	100%

Source: Field Survey, 2011.

Table 1. shows that 26 respondents assessed for information technology used in the departments, 15 were males while 11 of them were females representing 57.69% and 42.30% respectively, it shows that majority of them are males.

Table 2: Distribution of respondents according to educational qualifications.

Qualifaction	Frequency	Percentage (%)
HND/Degree	11	42.30%
M.Sc./PhD	15	57.69%
Others	-	-
Total	26	100%

Source: Field Survey, 2011.

In Table2 the educational qualification of 26 respondents were HND/Degree, Master/PhD, and other (qualification). Their frequencies were represented by 11, 15 and 0 percentages respectively.

The analysis shows that the educational qualifications of the majority of the academic staff in the institutions are M.Sc./PhD constituting a percentage of 57:69%.

Table 3: Distribution of office secretaries of the study area.

Respondents	Frequency	Percentage (%)
Secretaries	7	100%
Others	-	-
Total	26	100%

Source: Field Survey, 2011.

Table 4: For how long, have you been working with this institution (Polytechnic?)

Respondents	Frequency	Percentage (%)
0-2 years	3	11.53%
2-5 years	7	26.29%
6-10 years	6	23.07%
11-20 years	7	26.92%
21-above	3	11.53%
Total	26	100%

Source: Field Survey, 2011.

Table 4 shows that 3 respondents have 0-2 years of services experience in the Polytechnic, 7 respondents have 2-5 years 6 respondents have 6-10 years, 7 respondents have 11-20 years while 3 respondents have 21 and above years of working experience which is expressed as 11.53%, 26.92%, 23.07%, 26.92% and 11.53% respectively.

This indicates that those who worked between 2-5 years and 11-20 years of working experience constitute the majority with the frequencies of 7, 7 representing 26.92%.

Research question one

What is the attitude of academic and non-academic staff towards the use of Information technology?

Procedure: Simple percentage "%" was used. The percentage of each response on the questionnaire was calculated. The total numbers of the questionnaire administered was 100 after a stipulated time 76 were returned.

Purpose of data collection: The main purpose is to find out the attitude of both academic and non-academic staff of the study area toward information technology in RAM. POLY, factor that helps in answering the above research question, from serial number 1-4 was used. Analysis of respondents on what is the attitude of academic & non-academic staff toward the use of information technology?

Table 5 shows the responses of respondents the serial number 1-4 on the questionnaire.

Research questions and responses on the use of (IT) in school of technology education RAM. POLY.

Table 5

S/N	Statement	Yes	%	No	%
1	Are you computer literate?	67	88.15%	9	11.84%
2	Do you have computer facilities available your department?	55	72.36%	21	27.63%
3	Is there software package in the department?	68	89.47%	8	10.52%
4	Is the use of computer relevant in computing result?				

As seen from the above table, both academic and non-academic staffs attitude have been greatly influenced due to advancement of (IT) in RAM. POLY. As revealed by s/n 1-4 of the research question, however, about 93.42% of the respondents are in support of the statement above while 6.5% of the respondents disagreed respectively.

Research question two

What are the problems associated with the use of information technology tools in RAM. POLY.?

Procedure: Simple percentage was used for each response on the questionnaire which was then calculated.

Purpose of data collection: The major purpose of research question two is to find out the problems associated with the use of information technological tools In RAM. POLY. by lecturers, students and other office secretaries in answering this research questions from serial number 5 and 10 respectively.

Analysis of respondents on what are the problems associated with the use of information technology tools in the study area?

Table 6 shows the responses of respondents of the serial number 5 and 10 on the questionnaire.

S/N	Statement	Yes	%	No	%
5	Do you encounter any difficulty with regard to computer operation in your department?	74	97.36%	2	2.63%
10	Is there any need to establish a cyber cafe in your department?	63	82.89%	11	14.47%

As seen from **Table 6**, a lot of problems are being encountered with regards to computer operation on the study area, these difficulties are of lack of power failure, inadequate man power and the explicit cost of maintenance it also revealed that there is need to establish a cyber cafe in study area which will enhance learning process and to adequately harness the current educational challenges of outmoded educational technological tools to facilitate teaching and learning process. About 97.36% of the respondents agreed to have been facing series of difficulties hence 82.89% so the need for establishment of cafe.

Research question three

Is the internet or computer used to process data in the school of technology education?

Procedure: Simple percentage is used .the percentage of each response on the questionnaire was calculated.

Purpose of data collection: The major purpose of the research questions three is to find out the students and lecturers status using a computer to process data in school of technology education. **Table 7** shows the responses of the respondents of the serial number 11,12 and 14 on the questionnaire.

Table 7

S/N	Statement	Yes	%	No	%
11	Has information technology reduced the level of time wasted in your research studies?	73	96.05%	3	3.94%
12	Do you have internet facilities?	38	50.00%	38	50.00%
14	Apart from computer system, do you have any other device you use to facilitate your research studies?	74	97.36%	2	2.63%

As seen on the above table, information technology reduces the time and energy wasted to a barest minimal level, even though the internet facilities seem not to be sufficient for research purposes. Therefore, the majority of the respondents seems t have been using some devices other than computer for their research studies, more especially mobile phone. The above table revealed that about 97.36% of the respondents to have been using mobile phone for research purposes also 96.05% of their believed that information technology reduces time wasted in research work while 50% of respondents agreed to have internet facilities.

Research Question four

What kinds of computer or technological infrastructure are available in RAM.POLY.? e.g. (GSM, land-line, fax machine, T.M, Internet network and the mode of interconnectivities of the transmission medium in existence (wired or wireless).

Procedure: Simple percentage was used. The percentage of each response on the questionnaire is calculated.

Purpose of data collection: The purpose of this is to find out the different technological infrastructure available on the campus, their relevance and the mode of connectivity. The factor that helps in answering the above research question is serial number 6, 7 & 10 on the questionnaire.

Analysis of respondents on what kinds of computer or technological infrastructure is available in the study area (Bursary).

Table 8 shows response of the respondents of the serial number 6, 7 & 10 on the questionnaire respectively.

S/N	Statement	Yes	%	No	%
6	Does computer help in minimizing time constrain in preparing salaries voucher?	74	97.36%	2	2.63%
7	Does lack of information technology (IT) contribute to poor performance in your department?	37	48.68%	39	51.3%
10	Is there any need to establish cyber cafe in your department	50	65.78%	26	34.21%

As seen in **Table 8** computer helps in minimizing time constrain in preparing salaries voucher, about 97.36% of the respondents agreed with the statement. However, 51.37% disagreed that lack of information technology contributes to poor performance about 65.78% of the respondent agreed that establishment of cafe in bursary department will greatly facilitate the smooth operations of the department services hence the need for wireless network services.

Research question five

What are the barriers to information technology implementation in the study area?

Procedure: Simple percentage was used. The percentage of each response on the questionnaire is calculated.

Purpose of data collection: The purpose of this study is to examine the barriers to information technology implementation in the study area (registry).

Analysis of the respondents on information technology implementation in the study area.

Table 9 show the responses of the respondents of the serial number 8,9 and 15 on the questionnaire.

Table 9

S/N	Statement	Yes	%	No	%
8	Does computer help in keeping students' academic record?	72	94.73%	4	5.26%
9	Does computer help in processing students transcript?	66	86.84%	10	13.15%
15	Do you encounter any problem when using computer system or internet services?	75	98.68%	1	1.31%

As seen in **Table 9** computer helps immensely in kicking student academic record as confirmed by the respondents at about 94.73% agreed with the ascension. It is also agreed by the respondents that computer to help in processing student's transcript.

On the other hand, however, despite the fact computer/net plays a significant role in teaching and learning process yet its operations are full of constrain ranging from technical, problems or network failure, inadequate peripheral devices or lack of computers, computer virus or power failure etc. about 98.68% of the respondents agreed to have face different kinds of obstacles while operating computer or internet services.

Findings

- Revealed that information technology reduces time and energy wasted to the barest-lowest level more especially of it is use effectively.
- It also shows that there are no sufficient internet facilities in the school as agreed by average responses of 50%. Our findings also revealed that about 97.36% respondents agreed to have been using GSM for research purposes.
- A very large percentage of 97.36% agreed that computer ease the work of bursary to the lowest level, more especially in the preparation of salary voucher, loans and advances, payment of bill etc.c
- Computer helps in keeping student's academic record, admission and transcript production and this can motivate the staff to learn the operation of computer and become more technologically advance.

It is believed that about 98.68% of the respondent's face different kinds of obstacles. Some of the problems that hinder smooth operations of information technology in RAM. POLY. are:

- Lack of information technological tools
- Inadequate personnel
- Ignorance, poor management, bad policies, lack of computers/internet service, computer virus and inadequate power supply.
- Unfavourable weather condition e.tc
 - The main thrust of the study is to determine the use of information technology in RAM. POLY. As an institution of higher learning, the Polytechnic used information technology to improved teaching and learning process.
 - However, in order to use information technology tools (ITT) as a lecturing weapon, one must first understand where strategic opportunities for learners are likely to be found.

- According to Fapouna (1998), of appropriate quantity application practices and many ways of using the computer in other part of the world is breath taking. The findings in this study collaborates the assertion of modern and Ranie (2004), Laudon (2002), it was discovered that adequate computers, computer personnel where few among the lecturers even though the computers are not there much enough in the school of technology education RAM. POLY. The findings in this study agreed with the assertions of Lucey (1994), he asserted that the lectures will never be able to get all the facts; they should have most decision to base on incomplete knowledge. In spite of the difficulties of producing information, lecturers need relevant information which increases knowledge and reduces uncertainty. Wombo and David (2004) further clarified that information system has been said as the formal group of process on a collection of data structured according to the needs of a learner, compiles, elaborates and distributes part of the information necessary for the learners.
- Rockert (1993), agreed with the view of Benfamin and Levison (1996) by indicating that the latest changes in information technology would lead to the evolution of a new technology intensive organizational structure. They projected that the advance in information technology would result in dramatic decline in the costs of co-ordination which would lead to new coordination. Based on the findings and other empirical evidences available, it is at present difficult for education in his face of shortage of computer. Glenna and Melmed (1996), argued that lecturers and administrators use computer and information technology to improve their roles in the educational process, using computer tools to stream line recordkeeping and administrative task thereby helping them to free up time for instruction or professional development. The further decreasing isolation by using e-mail and internet to research or communicate with colleagues, parents and the out-side world learner increasing professional development activities by distance education courses accessing education research and accessing classroom such as teaching materials, lesson plans etc.

Conclusion

The main objective of this study is to determine the uses of information technology in an educational sector (a case study of RAMAT POLYTECHNIC, MAIDUGURI). The findings of this research work revealed that 88% of the staff of the departments are computer literate while 12% are not. It is worth adding that the higher the use of info-tech by the school provides a blue-print which paves a way of facilitating the successful operation of the institution in terms of attainment of set goals and objectives of the institution. However, the use of information technology through the aid of a well-constructed structured questionnaire which was administered to the respondents by the researcher(s), the study has the sample size of 100 respondents drawn from the area under coverage and a descriptive statistic (frequency and percentage) was used for the analysis of the data collected.

The role in which computer plays in academic field will not be overemphasized, technology plays a vital role in research and in compiling of the student result, preparing salary voucher and issuing transcript, giving instructions or lectures to students and keeping record as shown in the findings in the previous chapter.

Recommendations

The following recommendations were made based on the findings of the study;

- There should be a provision to establish a cafe at all the department for students to be exposed and get acquainted to net facilities for easy accessibility of knowledge.
- There is need for computer workshops to be organized regularly.
- An effective management control unit has to be established so as to take necessary measures with regards to the use of computer.
- A very concrete solution to power failure should be provided. (For instance, stand by generator).
- There is need for government intervention in providing information technology facilities that would stimulate the operations to achieve the educational goal.

Suggestions for further Research

- This study has found out that there is gender imbalance with regard to the use of information technology in school of technology education RAM. POLY.

- It is therefore recommended that female staff should be encouraged to go for computer studies so as to cope with modern educational challenges.
- There is also need for government intervention to make policies as regard improvement in the standard of information technology in education sector.

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