ICT and Mass Communication

Information Communication Technology (ICT) and Documentation in Tertiary Institutions

Virgy Onyene, **University of Lagos, Pat Mbah;Federal College of Education, (Technical), Lagos** and *S.C Madumere,* **University of Lagos,**

Abstract
This paper assessed the issues and relevance of electronic devices to the administration and control of tertiary institutions information details. The use of modern electronic devices, with particular attention to the computers which was explored to ascertain the extent documentation enhances organizational effectiveness. Nigeria with its teeming population of about 140 million needs to meet up with the real of the world in the face of ICT revolution. Information and documentation processes are most imperative now that technology has advanced to such a level that impact heavily on competitive business and administration. The paper takes its conceptual framework from structural principles of the Max Webber's classical bureaucratization of organizations which proposed the entrenchment of downward-upward flow of communication with copious documentation. It therefore outlined the role of ICT in the documentation of day-to-day as well as future educational operations in a tertiary setting. Observable challenges to tertiary institutions in Nigeria include that most of their facing a lot of managerial crisis due absence and, or inadequacy of ICT tools; knowledge and complexities. The paper therefore proffered possible solutions to the way forward.

Introduction
There is every truth in the saying that people would perish for lack of knowledge because with knowing, relevant data is either generated or consumed. This is the simplest way of explaining information in content and context. Information is a body of worthwhileness upon which the values of a society evolve. Information is the basis of knowledge. For an individual to be educated or learned, he or she needs to be well informed, irrespective of Career choice. In other words, professionals in teaching, engineering, banking and finance, insurance, accountancy, marketing, estate Management, architecture etc require both foundation training and education in formal settings as well as constant upgrading through in-service or out-service processes. Information and Communication Technology (ICT) influence and affect everyone's private and corporate work life. In essence, to bridge knowledge gaps in an animalistic person's behavior demands exposure to lots of information and interactive communication to make a great difference by way of proper cognitive definition. Communication refers to the arts, science, processes and or organizational behaviour.

Every individual needs to have a basic understanding of computing concepts and build the skills necessary to ensure that he/she is ICT compliant Information technology is an advantage in every career especially as a teacher. One does not have to be a computer scientist to make good use of a micro-computer. Rather, he or she just need to be acquainted with what is needed to get work started. ICT revolution seems to have created a new body of knowledge that has affected all mankind. The need for professional growth of teachers, Akinseinde, (1990) noted, is as a result of the challenges and concerns caused by knowledge explosion in reaction to professional obsolescence in almost every field of human endeavour. Education is therefore a necessary tool for such development and growth to be transmitted to learners. Many developed nations (such as Britain, Australia, United States of America and Japan) have passed through investing and pursuing technology biased education programmes in their institutions of learning.

With the advent of information and communication Technology (ICT) in Nigeria, access to knowledge has become a potent force for transforming her social, economic and political life globally. The Internet is the fastest growing instrument of communication in the history of civilization, and it may be the most rapidly disseminating tool of any kind ever. This convergence of information technology and the internet may well become as transformative as the European industrial revolution era. Again, like the invention of the steam engine, ICT has changed the way people interact and live.

Information Communication and technology are three related factors that derive so much from life skill acquisition, education and training. Information refers to a body of message or product or service to be sold out to any effective buyer (learner or teacher). Communication as used in this paper refers to the interactive exchange of ideas, files, work or documentation from one source to one or more places of need. Technology is simply the technical or procedural know-how of every information collection, use (as in communication), storage and referral. Every practitioner has the tendency to improve with adequate information. Thus, effective communication strategy and knowledge provision serve as equipment towards better assignment performance. As a teacher, or an instructor, one needs a device to improve learning, instruction as well as to communicate effectively. The more effective a teacher is at work like in resourceful arrangement of content, the better and less cumbersome his or her task become.

Information technology is an indispensable tool in the management and of packaging organizational programmes, activities and competencies. But this angle, it is a facilitative device using electronic means. In the context of this paper, it refers to a tool or any equipment or interconnected system or subsystem of equipment that is used on the automatic acquisition, storage, manipulation, management, movement, control, display, switching, interchange transmission, or reception of data or information. The term information technology includes computers, ancillary equipment, softwares, firmwares an, or delicate procedures for major services as well as support services requiring related resources).

Some schools of thought and quantitative analysts (Encyclopedia Britannica 1999, Akingbade 1995, Lucey 1996) now claim that the computer is one of mankind's

most dynamic inventions dating as far back as 430 BC. This claim is justified by elaboration of science of structure, order and relations as in elemental practices of counting, measuring and describing the shapes of objects known as mathematics and facts and data of numerical kind assembled for inferential and descriptive purposes (statistics). Over the years, the development of computers have taken different shapes, sizes, uses and application. No wonder, it is used in very many ways and fields of study and human endeavour to meet challenges of development and human capacity. The computer with its enormous power and speed has acted as a great catalyst to scientific discovery Fafunwa (1992). It has become an amplifier of human- thinking, the tool of complex protein, solving and or repositioning huge quantities of the world's data, information and knowledge. He also observed that Humanities in an age in which the amount of knowledge accumulated, doubles itself every ten years. The textbook and the teachers, he said are rapidly becoming antiquated purveyors of information.

Similarly, Goro (2003) opined that an assessment of the state of the computer and technology literacy should be a cause for concern to teacher educators especially in Nigeria's tertiary institutions. This according to him, is because to function in a world dominated by technological innovations; our institutions need to be knowledgeable in technological development for effective administrative documentation Furthermore, Goro (2003) however bemoaned that most institutions personnel have not had any form of training or background in the use of these technological aids in a most recent work, Onyene and Uche (2007). It should be noted here that the rush to embrace the modern technology by all sectors of the economy has left some essential questions unanswered, such as how would the present day institutions of learning embrace new learning, training, skill building and teaching needs in an era of ICT revolution? Will emphasis be more on staff training or otherwise for effective adoption and use of these technological devices and aids in documentation? How will the average practicing staff today be trained to use these technological devices and modern teaching aids to perform his/her daily activities; and are all the lecturers and other members of staff competent to compute students results etc?.

The relevance of ICT to educational administration is quite significant. Virtually every segment of the economic, political and military spheres of national economics are undergoing transformation as a result of ICT. The new models of learning and instruction, Hill and Solemn (2005) noted has repositioned technology to a central role as an educational tool. In recent time, Universities, Colleges of Education and Polytechnics have acquired impressive arrays of computer hardware, software and support systems in classrooms, laboratories/workshops and offices to improve teaching and learning.

Figure one: Communication process in school organization: Implications for ICT Revolution.

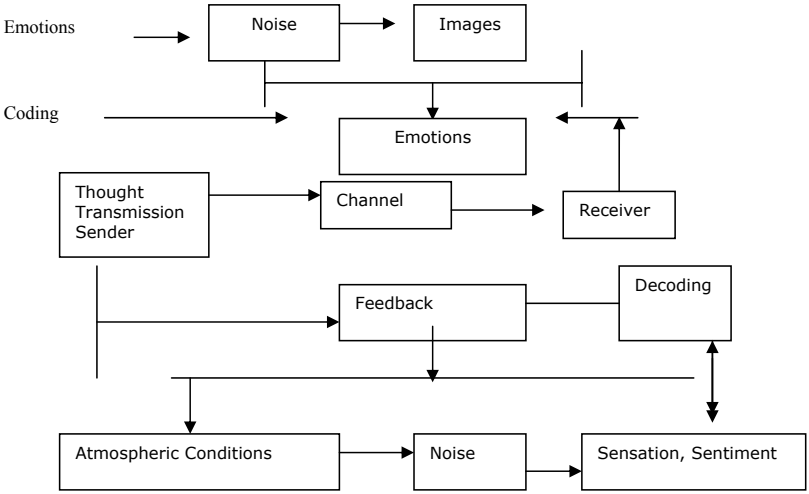
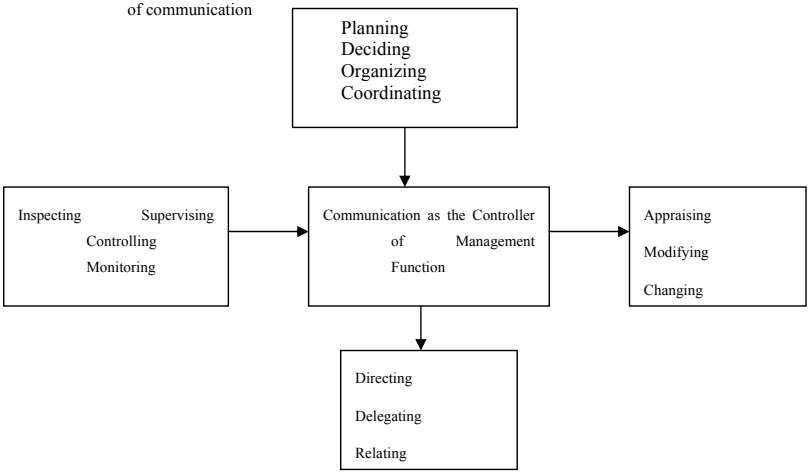


Figure one explains that with the use of local area network (LAN) within a school organization, administrator – staff – student relationship will emanate from their emotional content which is how or what they feel about a situation on ground. This is coded with some interference called noise (subjective feeling for example); perceptions or images are also part of what the sender codes into an e-mail/ message for example. The receiver has his or her own emotions which determine how he or she decodes the message and the type of feedback given.

Figure two: Linking ICT to Management Functions as a Product of communication



Teachers are also being trained in computer and other information related courses in our institutions of higher learning.

Stages in the ICT Utilization for Teaching, Learning and Management of Institutions

It is important to note here that the stages refer to the developmental stages through which a school organization like a typical industry makes use of ICT.

Learning how to use ICT Tools: This stage follows directly the discovery of ICT tools which is the stage of learning how to use ICT tool. Further away from the above, one moves on to make use of the tools in different disciplines- a stage that involves the use of general or particular applications of ICT.

Understanding how and when to use ICT tools: to achieve a particular purpose, such as in completing a given project. This stage implies the ability to recognize situations where ICT will be helpful, choosing the most appropriate tools for a particular task, and using these tools in combination to solve real problems. This stage is linked with the infusing and transforming approaches in ICT development.

Specializing in the use of ICT tools involves specializing in the use of ICT tools such as occurs when one enters more deeply into the science that creates and supports ICT. At this stage we study ICT as a subject to become specialists. Such study concerns vocational or professional learning rather than general education which is quite different from previous stages involving the use of ICT tools. Thus we have to move in stages to discover. ICT tools; learn how to use ICT tools; to Understand how and when to use ICT tools to achieve particular purposes; to specialize in the use of ICT Tools. There are however different (but invariant) levels and subject areas at which one has to acquire and mastered information communication and technology to effect application.

These include Al Basic Concepts of ICT; A2 Using the Computer and Managing Files;
A3 Word processing; A4 Working with a Spreadsheet; A5 Working with a Database; A6 Composing Documents and Presentations; A7 information and communication; A8 Social and Ethical Issues; A9 Jobs and/with ICT; S1 ICT in Languages; S2 ICT in Natural Sciences; S3 ICT in Mathematics; S4 ICT in Social Sciences; S5 ICT in Art.

Concept of Documentation

Many writers and researchers have expressed and given their own definitions, opinions and meaning of documentation. These definitions vary to suit the different areas and aspects of documentation. The Oxford English Dictionary (2nd Edition vol. 4) defines documentation as the "accumulation, classification, storing and dissemination of information". This is in line with Library 101 glossary (2006) definition of documentation as the systematic collection, classification, recording, storage and dissemination, generally of a technical or scientific nature. Heritage Glossary (2001) views documentation as the written, visual, audio and electronic information about a place or an object.

For a mortgage loan, documentation often times refer to the papers provided by

the borrower as a proof of his/her ability to repay the loan. Some of the documentation that may be required includes tax returns, pay stubs and bank statements. The International Council of Museum (1995) sees it as the records which document the creation and history of all objects. Such as records include provenance and provenience documents, acquisition documents, conservation reports, cataloguing records, images, and research papers.

In professional judgment, Brigham Young (1994) 'pointed out that documentation is the supplying of documentations or supporting references. It is used to provide information in addition to that found on the application and need¬ analysis documents, and to provide a history of the student's circumstances for future references to another administrator, and auditor, a program reviewer, or some other third party. For the researcher, documentation is a record of sources used in research to give credit and to keep track of research. There is also a group of documents used and cited to support a piece of research.

In general terms, documentation is any communicable material (such as text, video, audio, etc or combinations thereof), used to explain some attributes of an object, system or procedure. It is often paper books or computer readable files that describe the structure and components, or on the other hand, operation of a system/ product.

Forms of Documentation/Record Keeping in Educational Sector

Documentation/record keeping is a very important aspect of school administration as it is in other areas of life, as a result, a large number of records are kept in schools about personal information of staff and students, academic work, general control and supervisions of staff and students, fees paid, expenditure. Some of these records according to Agun (1997) include: the log book; the admission register; the attendance register; the visitor's book; the class diaries; the school syllabuses and schemes of work; the punishment book; the mark books; the continuous assessment records; the staff attendance register; the movement register for staff; the store records, the important bio¬data book etc.

The Log Book: The log book is kept by the school administrator. It contains a record of important events in the life of the school (Agun 1997) where records that includes resumption and closing days of each terms; students enrolment, staff figures at the beginning of each term; dates on which new teachers report in the school, their names, qualifications and subject they teach; dates on which teachers leave the school and reason for leaving; dates of staff meetings; important contributions made too the school by individuals and corporate organizations; outstanding achievements recorded by staff or students in sports, academic life of co-curricular activities; records of dates, names and purpose of visit to the school by distinguished personalities; as well as short reports of important social activities such as prize-giving day ceremony, inter-house athletics competition. The ISAM procedure can be employed here to get information economically and effectively managed.

Student Admission Register Contains: Important information and data of each pupil/students are entered in an admission register; these include: surname and other names; date of birth; state of origin; religion; residential address; date of admission;

class to which admitted; class attended in the previous schools, transfer certificate reference number.

The Continuous Assessment Records: Continuous assessment records are expected to be kept for every child/student in the school. They are designed to contain records of continuous assessment of the performance of students in their academic work, which are required for certification by examination bodies. (Agun 1997). On the other hand, Agun pointed out that a school can design its own form of keeping these records and "one modern method that readily comes to mind is the use of computer to store and sort out these records."

Types of Computer Documentation

Solemn (2005) in the proceedings of the 4th Annual International Conference on Systems Documentation in Los Alamos in, the United States of America, presented the findings of a special interest group for designing computer documentation. She said that the varieties and plethora of information stored in the compute make users not to know where to find information they need and after finding the right document they may be dissatisfied by the way the information is presented. Based on this, they came out with types of documentation which results from the understanding of the computer users as follows: catalogue documentation; quick steps documentation; learning documentation; and reference documentation,

The catalog documentation helps all users to select the systems of documentation they need. It compares system capabilities in tabular and textual forms. It describes the computing concepts that users must understand in order to make their selections. On the other hand, the "Quick-steps Documentation" shows the 'no-time-to- learn' users what to do without explaining it: There is little reading and there are lots of examples. Solemn pointed out that development of the 'Quick-Steps' documentation is appropriate for systems that are used by many people.

The Learning Documentation teaches the 'want-to-learn' users, who have time and inclination to learn the use of computer. This type of documentation develops users understanding of computing concepts. Here, there is a lot to read and try. Learning information can be provided in a variety of forms such as manuals, computer-assisted instruction, and life or video taped courses. Development of learning documentation is appropriate for systems that are frequently used and where in-dept understanding by many people would be useful. Students or group of learners in a department move faster in their computer skill acquisition with this process.

Closely following the 'quick step' is the 'reference documentation', which can be provided in a variety of forms, including comprehensive reference manuals, quick-reference cards on line help, and glossaries. It is useful for 'know-what-want' users who generally are knowledgeable in a specific computing area and simply want to look up particular information. This will assist teachers and students in getting information for their research works. All computing processes require reference documentation which is casually called file. There can also be 'additional documentation', such as news about changed computing capabilities and public information for laypersons. The group as she puts it believes that "it is necessary to consider computer user attitudes in order to design the type of documentation that will be used".

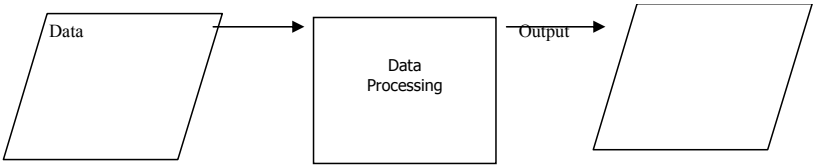
Rules for Effective Technology-based Communication in education.
Endeavour to clarify your ideas before communicating. This helps the computer user to select the right programme for the message. Essay passages as student term papers are better with word processing, while virtual lecture uses 'power point' presentation most of the time. The true purpose of each communication must be examined. To a semi-computer literate, group one may 'power' the sentences and not the points. This guide audience through the text. Consideration to the entire physical and human setting. This means that those who simply want their speeches digitally taped by one or two secretaries may have to go on with verbal speeches while office memos could be posted to staff through e-mail where there is Local Network Area (LNA). Make adequate and appropriate consultations in the course of communication planning when there is needfor such. Every information package requires different filling technique. Again, group opinions could be labeled and, or represented in graphs for easy user.

Look out for ample opportunity to take something of help or value to the receiver. To large classes, use of broad band 'power point', virtual lecture documentation and question banks help the receivers to catch up. In communicating, one needs to be mindful of the overtones as well as the real content of the message. The computers are not human, and as such cannot think out solutions which implies that the user must be in control. JAMB registry ought to do a lot of idea, word concept mapping etc. before examinations can be done online. When such examinations are posted, students get registered with personal identity card or password, the number of attempts made at passing this examination must be presented by the system and when finally such a candidate passes, the identity card or password will be automatically 'shorts-cut'. Employers can use this to rate candidates for jobs. Communication should take care of tomorrow as well as today. When planning for educational enrollment for example, the computer can be used to do the time-series- analysis of past registration of pupils in order to forecast for the year(s) ahead. Support communication with actions. Actions like model building can be done using technology just like in films, movies and videos. There should be a follow-up attempt in communication. Students on holiday can still submit special project report on –line. Always try not to just be understood but to understand others. This implies the ability to listen, read and interprete messages as sent by the supposed receiver or decoder in order to effect corrections, clear meanings and reduce mass.

Data Processing
Data processing (DP) is the entire process of manipulation right from the input unit to the final output unit. (See Introduction to Management Information System-Department of Educational Administration; University of Lagos p.5). In other words, DP is the term given to the process of collecting all items of data together to produce meaningful information. Data could be processed manually or electronically. When it is done on computer£, it is known as Electronic Data Processing (EDP).

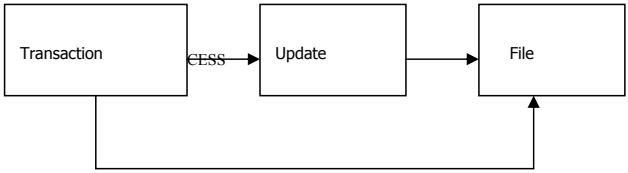
Stages of Data Processing
Data Processing Stage can be summarized into what is called Data Processing system as illustrated in the following figure.

Data Processing Stages



Processing Techniques
Mbaelu (2004) in his studies identified various processing techniques, some of which are discussed below.

Real Time Processing
A real time processing is an. online processing in that the system must be connected directly to the CPU for the process to take place. In real 'time processing', transactions -are collected online, used to 'update' the master file and the result of the previous operation will determine the next operation.



This explains that initially transactions will start, then information is 'updated' in the master file which serves as the beginning of new 'transaction'

The Multiprogramming
Multiprogramming is a process where-by the computer works on two more program concurrently, or side by side. Since a computer can do only a single operation at one time, it will work on one 'program for a while, then start processing another program, and then possibly go to a third, program and so on.

The Off-line Data Capture
Offline data capture is where data are collected, without engaging the CPU directly. The equipment for offline data collection are referred to as offline key driven devices. The data prepared in such situation are collated, verified and carried to the computer site for processing.

On-line Data Capture
Online data capture is where data are collected with equipment that are connected directly to the computer over a communication line.

Batch Processing
Batch processing involves the collection of data over a predetermined period of time and processing them all at once in batches. It is the application and management decision that determines when transaction occurs, batch processing can be performed. For batch processing to take place, the transaction file and the Master' file must be the same sequence. Batch processing saves time and storage during processing.

On-line Processing
Online Processing is a method whereby the CPU is engaged immediately the transaction occurs. Online processing involve processing the transaction individually, often at the time they occur. Online processing files need not be in sequence as the sequence of data occurrence cannot be pre-determined.

Multiprocessing
Multiprocessing is the use of two or more processors (CPUs) linked together to perform coordinated work at the same time. Whereas multiprogramming is concerned with performing several programs using one processor, multiprocessing is equally referred to as parallel processing.

Multitasking
Multitasking is the ability of the operating system to execute a user's tasks concurrently. A computer operation is broken down to many tasks at a time. But with multitasking design principles these operations can be carried out without disturbing the speed of operations.

Time-Sharing
A timesharing is a process where a single computer is shared by multiple users who gain access by means of terminals. It allocates to users several small, fixed slices of time as their jobs are being processed. In times sharing the computer, works so quickly on a user's time that each user feels as though he has exclusive use of the computer system.

Virtual Storage
Virtual storage refers to extending main memory by treating disk storage as a logical extension of the real storage. It uses the paging principle which divides the programs or data on disk into fixed-length pages or into logical, variable length segments. Teachers can use virtual storage for their lectures so that students can listen to them at their own time. Even when teaching a course, the lecture could be digitally trapped for virtual storage. But one has to be using broad band services.

File Organization in the Computers

The term file organization in computer as Lawal (2004) puts it is used to describe a collection of related records. It can also mean a group of records pertaining to a specific item. For example: Payroll file: This contains all the payroll records within the organization's records. A file has a layout which shows for each different record the name of each filled, its length, and its location within the record. The creation and maintenance of files are major tasks in the work load of a computer information processing system.

File organization according to Fashoto (2005) "refers to the way data are stored on the physical storage media". Fashoto indicated those files are organized in three basic ways as follows:

a. Sequential Access Files: These store records in order, according to their primary key in sequence (one after the other). For example, customers number from 00001 to 99999. So if one is looking for customer record with 00020 the computer will have to start with 00001, then go to 00002, 00003 and so on until it finally comes to record 00020. The disadvantage of sequential file organization is that record must be ordered in a particular way and searching for data is slow.
b. Indexed-Sequential Access Method (ISAM) files: They store records in sequential order, but also, have an index that links primary keys with their physical addresses.

The index sequential access method is an advanced sequential method where by the operator now have two addresses instead of one. That is,one will show where the 'range' in the file lies and the other will show 'exert location' of the information of file within the created range. Example, students in a library or faculty are identified in figure three as either users or customers. Each of them is located within a range which may be department and they can be located with exact address. The university library does not just put books on shelves but arranges them in terms of specialization such as education, law, engineering, arts etc. Law range one can use the number 99-108 to sort into intervals of say ten or more. Within such interval in a faculty or department are cohorted or partitioned numbers (index) that directly traces any particular book, student or library user.

Address (figure 3) refers to cohorts or department in a faculty. While library customers (students) in each range are given numbers to identify them, what the computer (algorithm) does is to probably engage in searching step-by-step procedure. All the operator needs to do is to write in English while the computer programmer translates into computer language. But the structure follows step by step procedure. The Statistical Packages for Social Sciences (SPSS) uses this perfectly. In search of a student under range 4063, one will have to move through last line number 1487 (see figure 3).

Figure 3: ISAM file with its index file

Data storage Area Index Address

Address	Index	Last Nos.	line of each		no. student
Address No. 4061	Cust No. 1478	Cust. No. 1479	Cust. No. 1480	Cust. No. 1481	Cust. No.1482
Address No. 4062	Cust No. 1483	Cust. No. 1484	Cust. No. 1485	Cust. No. 1486	Cust. No.1487
Address No. 4063	Cust No. 1488	Cust. No. 1489	Cust. No. 1490	Cust. No. 1491	Cust. No.1492
Address No. 4064	Cust No. 1493	Cust. No. 1494	Cust. No. 1495	Cust. No. 1496	Cust. No.1497
Address No. 4065	Cust No. 1498	Cust. No. 1499	Cust. No. 1500	Cust. No. 1501	Cust. No.1502

1482 4061
1487 4062
1492 4063
1497 4064
1502 4065

Source: (Adapted from Fashoto S.G., March 2005 p. 23)

The Direct Access Files

This is a simple file and folder method which is commonly used. In most times one finds new users desktop fill with lot of file and folders because they are yet to be organized and used to ISAM procedure. These files store records in no particular order; instead, a mathematical method is applied to the primary key to determine the physical address at which a record could be stored. File organization is an important aspect of documentation in the computer. It is very necessary that files are organized in such a manner that it will be easy to locate and use as records.

Manual Filing System

Human being is the earliest and still the most prevalent form of data processor. Despite the fantastic growth of computer applications, manual information systems still outnumbered them in quantity of systems and information handled (Murdick R.G. and Joel Ross (1975). Murdrick and Joel wrote that man's knowledge and store of information is what can be acquired and stored in his memory. Man receives this information (input) by seeing, hearing or reading them. These data are stored in his brain which also acts as a control and logic unit.

The reports and in some cases, variety of physical actions. The human operations on data: adding, subtracting, multiplying, and dividing; storing results. Despite his ability to perform the foregoing processing and storing tasks, the human being remains an unreliable processor.

Prior to the introduction of electronic database system, almost all the information an organization needed. to store was organized using manual filling systems. Typical methods included filing cabinets and card index records. (Lawal 2004). Although manual filing systems are still widely used, electronic database are also of common benefit to business organizations and even in the educational sector, particularly the universities.

Problems with the Manual Filing System

The following problems have been identified by Lawal (2004 p. 401) with the manual filing system.

Data Redundancy

This is the presence of duplicate data in multiple data files. It occurs when different divisions, functional areas and groups in an organization independently collect the same piece of information. For instance, within the commercial loans division of a bank, the- marketing and credit information functions might collect the same customer information.

Lack of Flexibility

A traditional file system can deliver routine schedule reports after extensive programming efforts but it cannot deliver ad hoc reports to unanticipated information requirement in a timely fashion.

Poor Security

Due to the fact that there is little control on management of data, access to and dissemination of information are virtually out of control. There could be loss of files and this can affect decision making adversely.

Inability to Share Data

Lack of control over access to data does not make it easy for people to obtain information because pieces of information in the different files and different parts of the organization cannot be related to one another, it is virtually impossible for information to be shared or accessed in a timely manner.

Problems in the Use of Computer

The usefulness and benefits of the computer in the different spheres of life are quite enormous. However, some identifiable constraints have been noticed by scholars and writers. Fashoto (2005) presented some of the constraints as follows:

Increase Stress
He pointed out that the pace at which information can be handled by computers means that more is available in it. This often confuses simple issues and the some people have difficulty in handling them.

Becoming too Dependent on Machines
The greatest problem of relying on computers is how to cope when they breakdown. Computer is a machine and like any other machine, it can develop a problem and pack-up. This can affect the documents in the computer adversely.

Computer Virus
Virus is a set of coded instruction that comes into the computer through a foreign disk or network. The first thing it does is to attach itself to critical file, then replicate and spread through the whole system. This can disrupt the activities of documentation. More often than not flash drives, diskets, mouse and keyboard are discarded because of virus attack. It is worthy of note that 'virus' is a programme which some experts have written and sold to bug existing ones. Virus therefore is different from dirts in real forms. Paul Hirst as indicated by Tibor Vamos (1985) also outlined some of the limitations and constraints in the use of computer. They include the following:

Under use
He identified that there could be a significant possibility of computers being underused. This may come about for several reasons according to Hurst. Some could be the 'temptation- for persons in charge to monopolise access to the machines although they are often the last people who should be using them.

Lack of know-how
Lack of know-how, Hurst continued brings about under use of the computers. Dearth of trained personnel to operate the system can cause underuse of the computer. This affects the use of computer for documentation as workers may resort to the use of manual or physical files when there is nobody to operate the computer. Practice has been found to be the beginning o perfection, which implies that from age three children should be exposed to the use of computer as facilitative techniques.

Inadequate Access
More people might want to use the computer than there are machines available and this can lead to a certain amount of friction and frustration.

Operating Conditions
Computers are sensitive to the atmospheric conditions. Hurst wrote that humidity over 90 percent can cause difficulties, hence, he recommended the use of air conditioning in high humidity.

Rapid Obsolescence
Technological advances in computer hardware have been occurring at a phenomenal

rate in recent years, if this trend continues, the system one buys will be out of date as soon as it is paid for.

Problems of Power Supply

This problem can cause damage to the system. It can disrupt the process of documentation. This is why people in the rura1 areas where there is no power supply cannot afford to use the computer.

Financial Problem

Lack or inadequate funds can be a major constraint in the acquisition and use of computers. Even with the decline in the prices of computers to "$600, some 'Low-income countries' cannot afford to buy them for their schools and universities. Also, the un-cooperative attitudes of some 'powers-that-be' can contribute to non¬ release of funds to sponsor the acquisition of computers particularly in the educational sector. Computers are revolutionary tools says Tibor Vomos (March 1986) Despite its constraints and limitations; it possesses "the capability, for economic, rapid access to large scale storage of retrievable data and also provides the means for storing incredible amount of information." (Mudick and Ross).

Prospects of Computer Usage

The use of computer has brought several benefits and solutions to human problems. Some of the advantages of the use of computer have been outlined by writers as follows:

Miguel Cervantes, an Information Technology Group Coordinator, Mexico City, (www.filenet.com) enumerated some of the benefits of computer filing in Pemex Gas company to include: enhanced management control over information access and flow; improved the overall security of critical company information; reduced the time required for information queries; enhanced Pemex document management process; reduced information processing errors by making it possible for users to work from a single document image; facilitated company wide communications and universal access to document repositories.

These benefits could be turned to strategic challenges for the improvement of the school communication networks and documentation process in Nigeria. Schein in Ejiogu (1990) proposed that an "adaptive coping cycle" is a major attribute of a living and viable organization which must adapt to and cope with the changes in his environment. Thus computer usage in education will make for effective and speedy assess and control to information (e.g. students registration on-line); security of critical information (students examination results); effective use of time (use of virtual lecturing method) as well as information error reduction which happen to be one of the major principles of Total Quality Management. Fatosho (2005) also pointed out some of the general advantages of Information Technology (IT) as follows. It can be used to do some jobs previously done by many people in a shorter time with less waste; computers are more accurate than human beings can ever be. Each product is exactly the same and hence quality can be guaranteed . Computers can do some jobs

far faster than a human can. Computers never go sick and can work for longer periods than human beings without breaking down. Computers can be used to do jobs where it is unsafe for humans to go. For example, computers can conduct "Nuclear reactor repairs gather weather, data in the Artic and Antarctic and do space exploration".

In addition to the numerous benefits derived from the use of computer in the business sector and other areas, computers role in brining tremendous improvement in educational sector cannot be overlooked. Jamesine (1987) in his paper "Classroom uses of the computer" indicated that computers, can be used in education in a number of ways: for administrative purposes, for information retrieval, for direct distinction and: for simulations. Jamesine continuing said that computers are used in educational administration for keeping students records, for statistical analysis, and for ordinary book keeping functions such as payroll calculations. The use of computer has made these administrative functions mom effective and efficient.

The computer as Jamesine, pointed out "can be used more directly by the students as a quasi-library facility." Here students interact with the computer for the express purpose of increasing their knowledge in some school subjects. Computer also has the power to make instantaneous decisions based on large quantities of detailed information. This enables it to deal with students in a highly individualized way according to Jamesine, by keeping accurate records of the students interest, aptitudes, knowledge and skills. The computer, he maintained, can react to each student, differently providing instruction that is highly sensitive to individual differences.

Michael Hegener (1997) journalist writing in "Journal Documentation" summarized the impact of computer on documentation thus: computer has opened a whole new window of opportunity: those who are bothering to look through it are already enjoying a view of landscape full of new ways to tackle the problems of life.

Summary/Recommendation and Conclusion

This paper discussed the concept of documentation in tertiary institutions. Educational processes involve the use of files, records, data and computation of other documents both for staff and students. Over the years, the act of keeping and updating their records have been a burden to those officers whose sole responsibilities comprises such tasks. But with ICT, a lot of stress on the job have became less reduced.

In essence, the use of ICT has proved that documentation is a very important aspect of the administrative function which should be meticulously handled for proper organization not only, in the educational sector but also in the different areas of life. Through ICT, greater potentials and possibilities in using technologies as a powerful medium of delivery, instruction and communication is enhanced.

Since the world is changing and emphasis is being placed on technological development, and with the evolution of computers, modern electronic device are now used to facilities documentation businesses. However, some schools and organizations still make use manual filing despite its constraints.

In order for Nigeria to move with the rest of the world in this information age, the government should Provide enough funds for ICT education as well as other essential services (telecommunication, power, roads, water etc). Better the lots of educationists would need to be explored in order to keep such staff steady and consistent, especially the ICT teachers. Sensitize the Nigerian IT industry and companies such as mobile

phone operators - MTN, Glo, Reltel, Celtel etc. can be encouraged and sensitized to invest in education of the future Nigerian students, just as Cadbury Nigeria Plc. is doing, ICT education and application in schools would be improved. Provide libraries to create information centers whereby users can retrieve information as required. Multi-media systems facilitate the searching of encyclopedias, which can be in compact Disks rather than on shelf. They get updated just as the hard copies on shelves. The Federal Ministry of Education should mandate the NUC, and NCCE etc to establish information center to enable teachers exchange ideas with their counterparts all over the world. Encourage computer conference, on-line teaching etc. Families should provide computer toys to new babies, then basic key boards to toddlers in order to raise a computer literate home. Thus, at adult age, none will be as unskilled as is typical in Nigeria organizations today. When this is done, the nation will transform from basic operation and hands-on users to skilled manipulators and programmers. This early exposure will also curb the fraudulent act of using computers to cheat; information leakages and examination malpractices. University lecturers as well as other teachers at various levels should or be motivated with ICT tools and work aids.

Through proper and realistic strategic planning and meaningful incorporation of ICT related education in Nigerian tertiary institutions, the Federal Government and the respective State government in Nigeria will be in line with the recent global development. The 21st century Nigerians would be enriched by the vast increase in the flow of information through the information superhighway. The institutions curricular contents as well as the Universities Colleges of Education and Polytechnics minimum standard should be revisited to make it minimally and solely practical oriented.

References

Adesina, A.I. (2002). *Introduction to Computer.* Revised Edition. Lagos: Kenia Publishers.

Agun, S.O. (1997). *Management and Running of Private schools. A practical guide.* Lagos: Femag printing and publishing Co.

Akingbade, Funso. (1995). *Practical operational research for developing countries – A process framework approach.* Lagos: Panaf Press

Akinseinde, S.T. (1990). Professional Growth of Vocational and TechnicalTeachers: Challenges, Benefits and Concerns. *Nigerian Vocational Journal* 1, (3) 31-37

Alaska USA Mortgage Company (2005) www.alaskausa mortgage. Com/help/mtgterms-asp

Brigham Young (1994). Documentation in Professional Judgment.

Ejiogu, A.M. (1990). *Educational management: A system approach.* Lagos: Literamed Publications.

Ejiogu, Aloy (1993). *Issues in the Management of Public Service Institutions.* Lagos: Pumark Nig. Ltd.

Fafunwa, A.B. (1992). The Teacher and the 6-3-3-4 System. In

A. Adaralegbe (Ed) Education in Nigeria, teacher Education for the 6-3-3-4 system. The Management of human and material resources for Education, Lagos: T*he Nigerian Academy of Education.* 10-19.

Fashoto, S.G. (2005). *Introduction to Computer and Information and Communication Technology*

Goro, C.A. (2003). The Technological Classroom in Nigeria. Issues and Challenges. *Journal of Issues in technical Teacher Education.* Potiskum: Federal College of Education

(Technical) 2 (2) 78-83

Heritage Glossary (2001). Documentation. www.deh.gov.au/soe/2001/heritage/glossary/html

International Council of Museum (1995). www.willpowerinfo.myby.co.uk/cidoc/guide/guideglo.htm

Lawal, S.O. (2004). *Introduction to Computer Science* .Lagos: Unilag Press

Lucey, T. (1996). *Quantitative techniques in education.* New York: Priced Sponsored Texts Library 101 Glossary (2006) www.seattle cen tral.org/ faculty / jshoop / glossary. Html

Hegener, Micheil, (1997). *Journal of Documentation http://www . widernet.org/intline/lin.ks/ technology*

Murdick, R.G.; Ross, Joel E. (1975). *Information System for Modern. Management Okunola, Olayide (2005). Case studies in Nigeria Education: Analyses and Discussions of Management Problems and Issues.* Ibadan: DAC PRINTS.

Onyene, V.E. (2007) Total quality management in education. *Studies in Educational Planning and Administration* .3(1) 182-193.

Oxford English Dictionary 2nd edition volume 4.Saas. byu.edu/depts./finidj gloss.aspx

Solemn, Ann (2005). *Designing Computer Documentation* http://portal.acm.org/citation.cfm

Tibor, Vamos (1986). *Education and Computers:* The Human priorities. Wikimedia Project (2006). The Free Encyclopedia en. wikipedia.org/wiki/documentation.

Wilfred Laurier (2004). Library Glossary Library.wlu.ca/subject/gen/gloss.html