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## POOR INTERNET SERVICES PLANS AS HINDERANCE TO EFFECTIVE USE OF ICT IN EDUCATION FOR GLOBAL IMPROVEMENT.

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***Abstract:** The world is a global village that is moving with a speed of lightening and in it, decisions are made very fast through the quick access to correct and obtained current information. In this village, Nigeria cannot afford to lag behind if she is to develop. Development can be viewed as modernization, but more importantly, as growth in a positive direction. Development can only take place with access to information that will lead to rational decisions, which will eliminate challenges in each sector of the economy. Education as one of the sectors of the economy is expected to lead in this era of information technology, but it is unfortunate to note that many educational managers are yet to come to term with the new and better ways of managing information in their institutions. This paper therefore x-rays what internet services planning means, and how it's unplanned can hinder the effective use of ICT in education vis-à-vis the pedagogical and technical expertise of the teacher as a critical component in computer education. In this 21<sup>st</sup> century, the official definition of an illiterate may mean someone who cannot operate or program a computer.*

***Keywords:** Internet Services, Planning, ICT, Education, Development.*

## INTRODUCTION

ICT can be an effective tool in supporting teaching and learning. However, it is now firmly established that its introduction into schools does not by itself improve the quality of education or raise attainment. Encouragingly, there is growing and widespread awareness that the pedagogical and technical expertise of the teacher is absolutely critical here. The Nigerian government is emphasizing teacher development as the key to effectively implementing policy and curricula, to using ICT to enhance teaching and learning, and to raising educational standards. However, a major impediment is the lack of qualified teachers. This problem is further exacerbated by growing poverty, corruption and lack of funding for their salaries, and the exponential rise in student population in the last decade, due may be to the re-introduction of Universal Basic Education (UBE) scheme which came with the Millennium Development Goals (MDGs). It will be worthwhile to explain and or define the basic key words that make up the topic, such as: what is internet? What is Internet planning? What is ICT? What is ICT in education; and what is Education?

### What is Internet?

The internet is an inter-connection of several computers of different types belonging to various networks all over the world. It can be called a network of networks, a loose network, or information super highway. In other words, it could be referred to as an international network – hence Internet. The history of the internet could be traced to some forty years ago, when it was created as a project of the U.S Department of Defense. Its goal was to create a method for widely separated computers to transfer data efficiently even in the event of a nuclear attack. From a handful of computers and users, today the internet has grown to millions of regional networks that can connect billions of users. This global network is not owned by any single individual, company or country (Leon & Leon, 1998). The Internet is a global system of interconnected computer networks that use the standard Internet protocol suite (TCP/IP) to serve several billion users worldwide. It is a *network of networks* that consists of millions of private, public, academic, business, and government networks, of local to global scope, that are linked by a broad array of electronic, wireless, and optical networking technologies (Blurton, 1999). The Internet carries an extensive range of information resources and services, such as the inter-linked hypertext documents of the World Wide

Web (WWW), the infrastructure to support email, and peer-to-peer networks. (Google encyclopedia). The TCP/IP means Transmission Control Protocol and Internet Protocol, they are software components that enable the transfer of information from one computer to another on the internet easily and safely. While World Wide Web (WWW) is a subset or an application of the Internet, which is a series of interconnected Servers that support specially formatted documents. One may ask why Internet, but it should be noted that we live in the Information Age, where knowledge is power. The internet helps in three obvious ways: (a) To get information; (b) To provide information; (c) To compile information (Leon & Leon, 1998).

### **What is Internet Services Planning?**

The World Wide Web otherwise called the web (www) is a subset or an application of the internet. It is an interconnection of several servers belonging to various networks with specially formatted documents. The following is a summary of the services provided by the internet through the Web (Amaechi, 2007):

- Electronic Mail (E-mail)
- Search Engines
- Frequently Asked Questions (FAQ)
- Knowledge Base
- Chat Rooms
- Online Universities
- Electronic Commerce (E-Commerce)

**Electronic Mail (E-Mail):** This is one of the most widely used resource of the Internet. It entails the transfer of data such as letters, files, drawings, pictures, etc from your computer through the phone line (MODEM) to a recipient's computer, with the help of an ISP. The e-mail comfortably can replace fax, postal system and courier services because of its high speed and cheapness. There are several web sites that provide free e-mail services; the user is asked to register at the site and an e-mail account is created for the user. An e-mail address is also allocated to the user. Such an e-mail account is particularly useful when you want to access your e-mail from anywhere in the world.

**Search Engines:** A search engine is a program that allows you to search for a particular set of words specified by you on the internet. A user interface is provided where a user can enter the word or the phrase that has to be searched. The search engine tries to locate the keyword in a large data source and returns the result of the search. Altavista, Infoseek, Yahoo and Google are some commonly used search engines.

**Frequently Asked Questions (FAQ):** Is an online document that list the questions and answers to the most commonly asked questions on a particular subject. A FAQ is very useful to new comers who can read it and avoid asking reluctant and basic questions.

**Knowledge Base:** A knowledge base is a resource of the internet that contributes to the knowledge of the user. Knowledge technically means possession of expertise, facts or the location of information. Knowledge base provides these kinds of information to an internet user. It usually contains various types of information about a specific topic.

**Chat Rooms:** Chat software enables interactive communication on the web. Once a chat has been started, each user can enter text by typing the text and the same appears on the other user's monitor instantaneously. A chat room is the virtual room where a chat session takes place.

**Online Universities:** Universities on the web provide online coaching at the end of which students are awarded degrees of different categories. This is very useful for professionals who want to pursue their studies, but are unable to do it because they do not have time to attend regular classes. This a fast evolving technique for distant learning courses, which depended on snail mail.

**Electronic Commerce (E-Commerce):** This means buying and selling through the Web or Internet. Many of us are aware of Jumia and Konga which are all online or E-commerce Firms that can deliver goods to your door-step without you moving an inch from your room. Today, most schools sell their Admission Forms online, even registration of students are online, these are all e-commerce activities; there is therefore no doubt on the need to be computer literate for economic growth and development.

Consider the online banking facilities and money transfer, how it has changed the trend of business in the entire world.

How then can one get connected to the Internet? There are four basic components needed to get connected to the internet, they are as follows:

- (a) Internet Service Provider (ISP)
- (b) Personal Computer (PC)
- (c) Modem
- (d) Communication Software

### **Types of Internet Services Connection:**

According to Amaechi (2007) and ELMO (2012), there are lots of ways to connect devices like mobile phones and computers to the internet. For some of us, our options depend on where we live, what devices we have, and if we want to use the internet when we're away from home. The following are the most commonly used types of internet connections:

#### **Dial-up connections**

To get a dial-up connection, your computer will dial a phone number using your telephone line. Dial-up connections need a modem to connect to the internet and you pay for a call each time you dial-up. Dial-up connections are really slow compared to broadband. If you want to do more than read web pages and send emails, you'll probably need a broadband connection.

#### **Broadband connections**

Broadband is a high-speed internet connection. Unlike dial-up, with broadband your phone line is not tied up. You can make a phone call and be on the internet at the same time. With broadband, you can watch live news and sport, download and share large files quickly and shop or bank online more easily.

#### **Fixed broadband connections**

A 'fixed broadband connection' is a permanent connection to the internet. If you've got fixed broadband at home, you'll have a broadband modem that you can plug a cable into. If your modem's also a wireless modem, you'll be able to connect wireless internet devices to your modem without using a cable. Wireless connections can be good if you have more than one person

and more than one device all wanting to use the same fixed connection. Most wireless connections let you use the internet in different rooms and even if you're outside. With a fixed broadband connection, you might also look into getting an internet phone rather than keeping your traditional phone line.

### **Fixed wireless and satellite connections**

If you live in a remote part of Nigeria, you can get a broadband internet connection by using either a fixed wireless connection or a satellite connection. Once you have a broadband connection to your home, you might like to set up a wireless router so you can connect several wireless devices and use them in and around the home. This kind of connection is what is required in all tertiary institutions in Nigeria, where the government will provide an internet satellite dish (VSAT) with wireless router which will make internet services available on the campus at all times. With this arrangements, teachers and students who have computer can connect to the internet through the school's network; it will also be possible for teachers and students to use items such as interactive white boards, tablets and other ICT gadgets in the classrooms.

### **Mobile broadband connections**

You could also get the internet on a mobile broadband connection where you plug a USB modem into your device and use mobile phone towers to access the internet. This can be useful if you need the internet when you're out and about, or if you live in an area with good mobile phone coverage.

### **Internet on your mobile phone**

Many mobile phones let you access the internet if you've signed up for internet in your mobile phone plan. 'Smart phones' are mobile phones that are like small computers. They have software on them to make it easier for you to surf the internet, check your email and use social networking sites. However, we may not say categorically which GSM network is effective in Gidan-wayu, Kaduna State, but with a VSAT internet connection, internet services will be available 24 hours in a day, as long as there is power supply in and around the school.

### Wireless hotspots

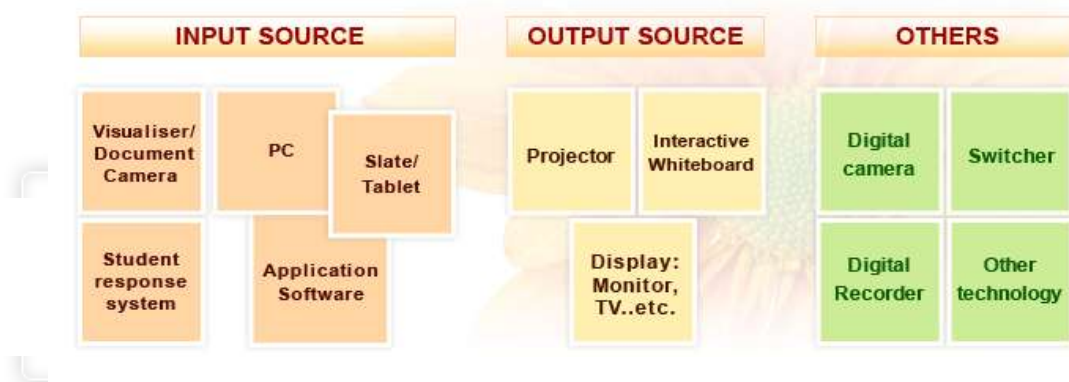
If you're out and about with an internet device like a laptop, tablet or smart phone, you might want to connect at a wireless hotspot. Be that as it may, the big question is, how many lecturers have the skills to convert their mobile phones into teaching aid or use the internet facilities provided by their mobile phones to teach students in the classroom settings; these are the issues around computer education for economic growth and development, which centres on the teachers' pedagogical and technical expertise.

### What is ICT?

The term "Information and communication technologies "(ICTs) is defined as a diverse set of technological tools and resources used to communicate and create, disseminate, store, and manage information (Blurton 1999:46). ICTs encompass a range of rapidly evolving technologies and they include telecommunication technologies (telephony, cable, satellite, TV and radio, computer-mediated conferencing, video conferencing) as well as digital technologies (computers, information networks (internet, World Wide Web, intranets and extranets) and software applications (Chisenga, 2006). "ICT" is the Information and Communication Technologies. "ICT in Education" means "Teaching and Learning with ICT".

Educational ICT tools can be divided into 3 categories: Input source, Output source and Others.

See the following graph :



Source: [www.elmoglobal.com/en/html/ict/01.aspx](http://www.elmoglobal.com/en/html/ict/01.aspx)

Worldwide research has shown that ICT can lead to improved student learning and better teaching methods. A report made by the National Institute of Multimedia Education in Japan, proved that an increase in student exposure to educational

ICT through curriculum integration has a significant and positive impact on student achievement, especially in terms of "Knowledge and Comprehension", "Practical skill" and "Presentation skill" in subject areas such as mathematics, science, and social study (ELMO, 2012). However, one can see that there are many education technology solutions provided in the world which may cause confusion among educators about how to choose the right ICT solution. Let's have a look at the advantages and disadvantages of ICT tools for education and discover what kind of education ICT solution is suitable for your school needs.

### **Main Advantages of ICT Tools for Education**

1. Through ICT, images can easily be used in teaching and improving the retentive memory of students.
2. Through ICT, teachers can easily explain complex instructions and ensure students' comprehension.
3. Through ICT, teachers are able to create interactive classes and make the lessons more enjoyable, which could improve student attendance and concentration.

### **Main Disadvantages of ICT Tools for Education**

1. Setting up the devices can be very troublesome.
2. Too expensive to afford
3. Hard for teachers to use with a lack of experience using ICT tools

From the above discussion, it is obvious that ICT tools for education have the need for internet services and skills to optimize its use, as such one can say, to a great extent, that poor internet services is a hindrance to the use of ICT in education. However, at this point, it will be wise to examine the use of internet in education.

### **Use of Internet in Education for Global Improvement**

The Internet swiftly entered the life of the humankind in the 20th century. It took us less than ten years to face the fact of its spreading all over the world, including the developing countries. It has become not only the hugest information resource in the world, but – what is even more important – the most rapid means of communication. People from different countries have



got an opportunity to communicate with each other in quite a short time. In comparison with a snail-mail or even airmail, e-mail gets over distance and time, frontiers of the states with a lightning speed (UNESCO IITE, 2009). Thus, people get closer to each other. They have got a chance to know each other better, to become aware of what is common among nations and can unite them and what is different, what peculiarities of culture and religion should be taken into account to achieve mutual understanding. They gradually come to realize the fact that we all are inhabitants of one planet – the Earth – and have to live together depending on each other, helping each other. But, the Internet is only one of the means to understand this and does not guarantee the comprehension of the people only by the technological and information opportunities that it provides. Everything depends on the people themselves, their mentality, their will and intellect (UNESCO, 2009). On the other hand, people in different countries, not only in the cultural and scientific centres, are able to get education in famous universities. Disabled children, invalids can learn at schools, colleges and universities by distance. Those who study at schools, universities, colleges can enhance their knowledge using the educational literature, encyclopaedia, references, dictionaries, databases, which are freely accessed, participating in distance educational courses, in collaborative projects with students from other schools, universities, countries, discussing different problems with them (Chisenga, 2006). So, the opportunities, which the Internet can offer in the sphere of education, are really unique. But we should keep in mind one simple idea that the Internet was invented especially for education. Very few technical aids were designed and produced particularly for the educational purposes. Educators have always had to investigate the didactic opportunities of this or that invention, to define how it can be successfully used in the sphere of education that is to define its didactic functions. It is very important neither to overestimate the role of the Internet in education nor to underestimate it, to define this role and place in the educational process.

According to Chisenga (2006), for this purpose it is necessary to orientate oneself on the concept and the goals of education adopted so, the contemporary concept of education, adequate to the values mentioned above and adopted in many countries as the priority, claims that the main goals of education nowadays should be intellectual and moral development of students, their critical and creative thinking, their ability to work with

information. The educational theory of constructivism, psychological theories of critical thinking and activity are recognized by the progressive educators of the world to be meeting the demands of the time. Times have passed when the reproduction of acquired knowledge was the main goal of education. Now people face the life-long learning to be up-to-date in any professional sphere. Thus, the significance of the Internet in education is great, indeed. But the fact of Internet existence in the life of people, the opportunity to get an access to its resources does not guarantee its efficiency.

### **Hindrance to Effective use of ICT in Education for Global Improvement**

Indeed it has been observed by many that meeting the desperate need for more qualified, competent teachers is the most persistent and daunting challenge facing the Nigerian education system in general, and the integration of ICT in particular. Effectively introducing technology into schools is also largely dependent upon the availability and accessibility of ICT resources (e.g. hardware, software and communications infrastructure). Clearly if technology cannot be accessed by the teacher, as in so many educational settings, then it will not be used. We know that state funding for such resources is scarce, and that ICT resources tend to be more available in urban than rural areas. Schools are increasingly being equipped with computers for teaching, learning and administrative purposes, connectivity is improving and students are enthusiastic about using computers for learning, despite the lack of equipment available. Some countries are developing digital content for use across the curriculum. Nevertheless, access and usage of ICT, like the electricity supply itself, remain rather sporadic (Agyeman, 2007). The undersea cables currently being installed to run around the entire country's coastline by 2011, bring the promise of widespread access to broadband connectivity for the first time. However, it will undoubtedly take time for adequate funding to connect schools to materialize. Across Africa and most developing countries there are many challenges in bringing ICTs into the education process in general. Anderson (1997) have identified a range of physical and cultural factors that affect ICT use by teachers, including lack of reliable access to electricity, limited technology infrastructure (especially internet access, bandwidth, hardware and software provision), language of instruction and available software; geographical factors such as country size, terrain and communications; demographic

factors such as population size, density and dispersion. The issues of access are further exacerbated by extreme poverty, corruption, growing prevalence of HIV/AIDS, and a lack of political will to alleviate the situation through proper planning. In addition, educational factors including levels of teachers' own education and literacy rates, and access to professional development play an important role. Indeed many studies indicate that it is teachers' attitudes, expertise, lack of autonomy and lack of knowledge to evaluate the use and role of ICT in teaching (or technophobia in teachers) that are the prominent factors hindering teachers' readiness and confidence in using ICT support. There is also a general inadequacy of learning resources, course curricula and other learning materials that incorporate ICT use. It is a common misconception that access to technology on its own motivates teachers to apply it in their teaching. The biggest barriers to the use of computers identified by teachers participating in the 1998-1999 survey assessing the World Links schools programme were the lack of time available in classes, and in their own schedules for planning; and the lack of a national policy on the use of computers in schools (Kozma, McGhee, Quellmalz, & Zalles, 2004: 376 cited in Chisenga, 2006). They maintained that relatively few teachers identified infrastructure problems, such as the lack of computers in working condition, unreliable electricity or lack of access to the internet, although these varied by country. As less technologically advanced countries joined the programme in 1999-2000, the major barriers to ICT classroom use became the lack of computer hardware (60%), software (56%) and reliable internet connections (52%). In sum, despite a great deal of recent progress and optimism that many more learners can benefit from access to ICT, the infrastructures necessary for deploying technological resources are lacking in most parts of the country.

Furthermore, many teachers are working in conditions that are not conducive to supporting ICT use. There are further, important, teacher-related factors influencing classroom use that become apparent. These are predominantly ICT literacy and confidence among teachers, and education of subject teachers to assist them in integrating ICT into learning areas. The Federal Republic of Nigeria's ICT policy is yet to be fully implemented. The Federal Ministry of Education created its ICT department in February 2007, notwithstanding several government agencies and other stakeholders in the private sector having initiated ICT-driven projects and programmes to impact

all levels of the educational sector. The challenge is the lack of electric power and telecommunications infrastructure in a substantial part of the country. Mobile telecommunication currently covers 80% of the national territory, but mobile telephone companies generally power their base stations using electric power generators since the Power Holding Company of Nigeria (PHCN) is unable to supply them with power. This phenomenon is prevalent nationwide and constitutes the bottleneck to effective countrywide deployment of ICT in education. It was projected that Nigeria will be a net supplier of electric power by the end of 2007 when its massive cross-country electric power grid construction and interconnection projects are completed, but to no avail. It is hoped that mobile operators will introduce technologies that permit Internet access on their networks across the country to facilitate the implementation of e-learning programmes, such as the mobile internet modem which is in use nationwide (Agyeman, 2007). According to a survey conducted by Agyeman (2007), the following were identified as hindrance to effective ICT implementation in education:

- The low percentage of teachers who have ICT skills and the challenges of the massive ICT education drive needed to correct and develop the huge human resources base at national and institutional levels, in the faculty and students population.
- The lack of requisite telecommunication infrastructure capable of transporting multimedia messaging (though this has improved over the years).
- The absence of electric power grids in most parts of the country, even in cases where there is adequate telecommunication coverage.
- Uneasy access to computer equipment and other accessories at institutional and personal levels due to location of cyber cafes in commercially profitable communities to the detriment of semi-urban and rural communities.
- Government budget do not permit meaningful provision for these initiatives.

## CONCLUSION

Improved internet services will enhance teacher-student interactions and make teaching-learning more flexible, thus enhances economic growth and development. In this 21<sup>st</sup> century, the official definition of an illiterate person

may be one who cannot operate or program a computer. Lecturers are expected to use internet facilities for students' project supervision to ease the suffering of students travelling thousands of miles to see their supervisors – hence modernization or development in a positive direction. With the launching of the NIGCOMSAT-1 in 2007 and connection to the SAT-3 submarine cable, coupled with the huge investment of private mobile telephone companies in fibre optic networks, internet services cannot be said to be available and effective in all parts of Nigeria, but we are making progress; in virtually every nook and cranny of this country, there is one mobile telephone network coverage or the other, yet their services cannot be very reliable when it comes to internet services. However, with the USB internet Modem, iPads, BlackBerry, Smart Phones, etc. one can say that internet services is closer to the people, but how many can afford it and has the skills to use them effectively in Nigeria, hence a hindrance to the use of ICT in education. Also, we need to address the hardware and software acquisition to schools and teachers, epileptic power supply by PHCN, and the required skilled manpower (trained qualified teachers), which are other components hindering the use of ICT in education in Nigeria.

## RECOMMENDATIONS

1. Teacher education curriculum should incorporate practical ICT skills acquisition programmes.
2. School plant planners should include ICT hardware resource (cabling) during construction, to facilitate use of electronic gadgets for ICT in classrooms.
3. Use of ICT in tertiary institutions for lectures should be made compulsory.
4. Management and administrative processes for both students and teachers to be computerized (online) in tertiary institutions for enhanced ICT skills.
5. Government to improve power supply to tertiary institutions in Nigeria and provide internet hardware facilities such as computers and VSAT Dish for the attainment of required economic growth and development through ICT.
6. The ICT unit of every tertiary institution in Nigeria should have facilities to train and retrain teachers on the use of ICT in classroom

setting and other teaching-learning activities to enhance economic growth and development.

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