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Practical Knowledge Acquisition Through Internet Technology in Nigerian Secondary Education System

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***Abstract*– Knowledge is one of the fundamental key to development. The ability to convert knowledge base to practical solution is hitherto even more desirable and sorted, because of its effectiveness in world development. Practical knowledge acquisition through internet technology, presents to the world especially developing ones, the secret source of real solution to national development issues, which is usually underestimated or simply neglected due to ignorance or negative technology perception. It examined the importance of its effective application to education system of the nation especially from the secondary stage, which it considers as the grassroots level. Furthermore, it analysed traditional bottlenecks militating against its actual integration and suggested solutions to these hindrances and emphatically specified the reason why the bull must be taken by the horn, using personal life experience and examples. It also identified further research targets to strengthen its need assessment base.**

***Index Terms*– Education, Internet, Information, Secondary and Technology**

I. INTRODUCTION

IT is an undisputed fact among scholars and non-scholars alike that knowledge is power. Knowledge simply means accumulated skills or technical expertise of a person or group of persons. Its acquisition is generally not effected without a cause. Consequently, it is obtained for the purpose of its application, which is usually to solve various challenging problems of the human race.

Philosophy is said to be knowledge itself or the eventual act and process of its acquisition. Thus education itself or Knowledge Acquisition; in summary is philosophy. A look at the philosophy of education in Nigeria today, shows that the nation's education system is yet to educate the entire mind. Change is a salient feature of nature. Hence every individual, groups or nation as part of nature, voluntarily or involuntarily share the same characteristics. This internal drive had resulted to knowledge base build-up both self obtained or guided, which is termed education for short.

Practical knowledge acquisition through internet technology in Nigerian secondary education is a move towards revitalizing the mind of the youth in our education system and their instructors. There is no doubt that the products of properly formed individuals starting from the *grassroots* level are generally different and equally remarkable.

Development in any area of human specie including human itself is usually based on well-articulated facts and or methods from the past to the present with considerable projection into the future, which then spurs out research and development. Education or knowledge acquisition for instance had past through several stages of development, starting from the period the very first idea of nature was conceived to present. At each level or stage of development, there exist simultaneously means of delivering the intended solutions to its end users. These means today are referred to as technology, which by itself is a solution to and the means of delivering solution to complex problems of humanity.

In education for instance, certain methods of learning had evolved overtime, including the recent e-learning strategy fuelled by the advent of computers and other related technologies. *It is here that the ideology behind this initiation felt is yet to be fully utilized and properly directed.*

Thus Practical Knowledge Acquisition through Internet Technology in Nigerian Secondary Education System, seeks to introduce guided web-learning *(Internet learning)* tools/strategy to the Nigerian education system. It does not fail to recognize the fact that computer aided instruction technology are already in application in various secondary schools, but seeks to emphasize on the application of *Internet driven* studies in the secondary education system of the country.

The library with stocks of book are undoubtedly one of the best aid to learning and perhaps the heart of learning tools, with theories and practical explained to the best knowledge of various authors who utilized evidence of facts within the time of their articulation to put these books together.

Human factor also play a very vital role in learning principles, presenting herself in the form of instructors or educators who had acquired and perfected various aspect of knowledge overtime. However, the internet as envisaged in this ideology is a *conglomeration of both human factor and books in one unit,* which is readily available anywhere anytime, provided the necessary infrastructures are put in place. The web is a continuously innovatory bank of information. The dual function of the internet that is acting as the tutor as well as tutorial materials itself are evident in practical solution to various real world problems which will

readily manifest itself among pupils and their instructors alike, if adopted with good faith.

The usage of information technology (IT), broadly referring to computers and peripheral equipment, has seen tremendous growth in service industries in the recent past (Berger, 2003)

The *Internet* itself has unlocked a world of opportunity for students. Information and ideas that were previously out of reach are a click away. Internets support thousands of different kinds of operational and experimental services one of which is online library. One can get plenty of data on this online library. As part of the IT curriculum, learners are encouraged to regard computers as tools to be used in all aspects of their studies. In particular, they need to make use of the new multimedia technologies to communicate ideas, describe projects, and order information in their work. This requires them to select the medium best suited for them, to convey their message, to structure information in a hierarchical manner, and to link together information to produce a multidimensional document (Pritam Singh Negi et al., 2011).

This idea is by no means intended to replace the good old book library but is very necessary especially in this information era, to support it (Edeh Samson Ugochukwu, 2013).

The purpose of this initiation is to inculcate in the mind of the nations' youth, at that tender age (Very important), the ability to apply *Internet technology* to develop solutions to human problems, individually and collectively. Laying such fundamental background for the youth at that stage will undeniably change the fate of our university education which is the citadel of highest form of education and development, provided the enabling environment made up of adequate infrastructure and competent instructors are put in place there too by the university administrators/owners. It is projected in this research, that by the end of six years secondary education, pupils would have become cyber thrillers. A move which will grant them better confidence and adequate mastery of their field of knowledge and spur them into endless quest for knowledge and it courses, thereby contributing positively to development of the nation.

II. METHODS OF KNOWLEDGE ACQUISITION

Knowledge is acquired through various means such as:

i) Studying text books both current and previous text written in that area.
ii) Workshop instructions by experts in various fields of human endeavour.
iii) Watching or listening to guided tutorials using multimedia systems.
iv) Learning in the school system through the combined effort of both human and non-human tutors
v) Learning with the help of internet.

The fifth learning tool or means is the bone of contention in this article. Looking at it as both the tutorial materials and the tutor itself as pointed out previously, readily shows it has become an indispensable element in the teaching and learning process. Instructors at various level of education make use of it to equip themselves adequately in addition to the good old library resources and personal collections. The striking feature of this learning tool is its ability to provide both historic and current data in every area of study.

A) Reason for its application

The need for application of internet technology to teaching and learning process especially from the secondary or high school level to zenith of education (University) is examined here. Nigeria as a developing country requires more effective individuals and groups. To become really effective, our students who are the vision of tomorrow needs to be equipped with means of self-actualization in various processes.

Through the Internet, students can develop a whole lot of hands on practice solutions to problems affecting them personally, their home, schools, in their work places later after graduation and the nations at large. The integration of information technology in teaching is a central matter in ensuring quality in the educational system. There are two equally important reasons for integrating information technology in teaching. Pupils must become familiar with the use of information technology, since all jobs in the society of the future will be dependent on it, and information technology must be used in teaching in order to improve its quality and make it more effective. (Pritam Singh Negi et al, 2011).

The reason behind this call to incorporate fully, internet learning tool to secondary schools is to enable each student understand which areas of study he/she eventually decides to follow, to ascertain which entrepreneurial skill most appropriate for the individual or to develop as many practical skills as possible to enable them adapt easily and effectively anywhere in the world. On the part of their instructors, the internet gives them un-adulterated information and build their stance perfectly well. Both parties are able to sample various hands on practice solution to various human problems and learn as much as they can.

This will by no means make teaching and learning a bit simple owing to the fact that students would have had fair idea of any topic or problem in question before its discussion in the class.

Utilizing the mobile technology which has become fairly affordable in the country, students and secondary school pupils will always have the internet on their palms and everywhere they go. Thus, the role of the instructor will simply be to use the internet resources available in their various schools to direct them on how to use it, and thereby drive every other aspect of their studies with *Internet technology.*

B) Benefit of its Application

Increased Level of Entrepreneurs: The ability of the internet to guide her user on how to fix various problems facing humanity both incumbent and emerging ones, makes it the best training ground for future entrepreneurs. Already existing ones finds enough materials and guidelines to improve their works.

Using myself as a typical example; I studies Electrical Electronics Engineering in the university after my secondary education. During the course of my studies in the secondary

school, ordinary computer appreciation had not been introduced to my school then. It was in my university years that I encountered one or two computer related courses in addition to the general computer appreciation taught in the first and second year of the university. After graduation from the university, I got work in an education institute, in the section that exploit internet to actualize their goal. Faced with numerous challenges, I resorted to the internet for solutions. Today, I can boast of many practical solutions to real world problems especially in the information, technology and communication world, and electrical electronics engineering which were my main areas of interest. Nevertheless, I can assure you that, with the internet, I can solve any real world problems now, let alone if I had been exposed to it right from the secondary school or even before.

The ability to use computers effectively has become an essential part of everyone's education. Skills such as bookkeeping, clerical and administrative work, stocktaking, and so forth, now constitute a set of computerized practices that form the core IT skill packages: spreadsheets, word processors, and databases (Reffell and Whitworth, 2002, cited by Adomi and Kpangban, 2010)

For the student, ICT use allows for increased individualization of learning. In schools where new technologies are used, students have access to tools that adjust to their attention span and provide valuable and immediate feedback for literacy enhancement, which is currently not fully implemented in the Nigerian school system (Emuku and Emuku, 1999 & 2000).

ICT application and use will prove beneficial in improving Nigeria's educational system and giving students a better education. A technologically-advanced workforce will lead to ICT growth in Nigeria, with the potential to improve military technology and telecommunications, media communications, and skilled ICT professionals who will be well-equipped to solve IT problems in Nigeria and other parts of the world (Goshit, 2006).

Improved secondary education is essential to the creation of effective human capital in any country (Evoh, 2007).

The need for ICT in Nigerian secondary schools cannot be overemphasized. In this technology-driven age, everyone requires ICT competence to survive. Organizations are finding it very necessary to train and re-train their employees to establish or increase their knowledge of computers and other ICT facilities (Adomi and Anie, 2006; Tyler, 1998). This calls for early acquisition of ICT skills by students.

Everything in the world is changing fast and thus knowledge acquisition process should also change in accordance to the change in the information era. (Edeh Samson Ugochukwu, 2013.

C) Challenges

Acceptance: Human beings are the most resistant elements to change and yet champion various critically remarkable and visible changes in the world. Owing to this paradigm, this initiation is most likely going to be faced with the issue of acceptance at first stage. People with their various individual differences and opinion will absolutely counter this ideology. However, not withstanding the fact, truth must be told even though is bitter. There is no level of camouflage or manipulations that is capable of concealing the light of a nation built carefully and comfortably on the mountain top. The benefit of the ideology speaks for itself.

A look at some developed and fast developing countries of the world within the 20th century and way back, like China, India, UAE, Malaysia, Indonesia, Japan, UK, USA, Canada, South Africa etc, shows that virtually all their activities was and is still been driven by information and communication technologies, which the internet happens to be one of the giants in that realm.

ICT features are aimed at bridging the digital divide and aiding economic development by fostering equitable access to modern communications technologies of which internet remains a vital part of it. It is a powerful tool for economic and social development. This view is strongly held by the Information, Communication and Technology for Development (ICT4D), an ICT promotion body dating back to 1960s and 70s when it was formerly called Development Communication. Some influential figures in this field, include, Wilbur Schramm, Nora C. Quebral and Everett Rogers. They held the view that more and better information and communication furthers the development of a society faster and more improved.

ICTs have significant impact in all area of human activity (Brakel and Chisenga, 2003).

It has the potential to accelerate, enrich, and deepen skills, to motivate and engage students, to help relate school experience to work practices, create economic viability for tomorrow's work force, as well as strengthens teachers and help schools change (Davis and Tearle, 1999; Lemke and Coughlin, 1998; cited by Yusuf, 2005).

The Economic Commission for Africa has indicated that the ability to access and use information is no longer a luxury, but a necessity for development. Unfortunately, many developing counties, especially in Africa, are still low in ICT application and use (Aduwa-Ogiegbean and Iyamu, 2005).

D) Initial Capitalization

Due to the high cost of Information Communication and Technology facilities in the country, one of the most challenging factors to this ideology is the initial cost of installing these services in the secondary schools. Only a few reputable private owned and some government secondary schools can afford to have this services installed and integrated into their system.

Despite the various advancement in ICT support devices, made by the Nigerian government, such as acquiring and maintaining communication satellites like NigComSat1 and host of others, the unit cost of deploying a full functional internet service in any organization still remain high. Except for mobile devices which is used individually to access the services through a gateway service provider like the communication network companies.

The fact that mobile device alone cannot solve this problem as envisaged in this ideology emphasizes the need for all and sundry involved in this saga to take the bull by the horn and get this established. The government and private secondary school owners will have to go back to their blue print and

incorporate this idea into it. The mobile device will then act as support element to the pupils and students, after they had been directed by their instructors in their various secondary schools and higher institutions on how to utilize the benefit of internet to drive not only their studies, but the rest of their day to day activities in life.

D) Critics

Nothing good comes easy. This is the tale of every positive change in the history of the universe. Certain school of thought definitely will criticize this move, citing the fact that internet harbours millions of negative influencing materials. Yes, it is true, but how about the positive ones? I think a sensible critic should not forget the fact that nature itself houses both the good and the evil. Even the very nature of human is fashioned with both modalities. But a very crucial matter worthy of note here is that the desire to be good or bad or to use a means positively or negatively is built by nature into man in equilibrium. It is equally undeniable that the training or formation received by a child while he/she is still growing plays a very vital role in determining what the future eventually becomes for such persons.

To this effect, the instructors at various level of education especially secondary stage, stands to play the role of good parents. Hence, there aim remains principally to direct or teach them the positive building blocks of the internet technology. Ultimately, some will develop into negative users, but that may likely happen at a later age when the child matures and is capable of deciding between good and evil. We cannot but acknowledge the fact that the universe presents such facets. There are reasonable degrees of risks involved in every aspect of human endeavour. Nevertheless, a nation cannot because of blood shed back-off or surrender disrespectfully in the face of war; when such battle is foreseen as very crucial to their survival and emancipation; instead they may retreat and retaliate with an improved modalities, to make sure victory becomes theirs.

Sequel to this, I would emphasize that the positive effect of Internet Technology on practical abilities of pupils/students will out number that of the negative effect. Even if it does not, it will become a challenge to those who decide to develop themselves positively. Hence, they will research more to counter the negative tendencies of their colleague who had formed the opposition force. It is even necessary for the nation to grow faster, because if there had been no form of challenge in the world right from the beginning, there would have been no form of development. Human race will not be anxious to think critically and creatively. You and I will seat and do nothing because everything is just there for us, the way we want it. However, nature had refused to make it that way, hence we all have to face the ordeal squarely and someday sometime, we will emerge victorious.

E) Power supply

Many years past, the country had formulated various policies, established and managed power control companies to ensure the nation enjoy good electricity supply but the success rate remains low. Owing to this fact, the present administration under the leadership of President Goodluck Ebere Jonathan, had succeeded in privatizing major power control companies of the federation; a move started by the previous administration. We hope in the nearest future, the power situation of the country will change positively.

Though it is clear that ICT deployment and all its activities is dead without power, we will have to realizes that where a person live is where he/she is expected to replace and flourish, an extract from Igbo adage written in bracket, (Ebe onye bi ka ona awachi). Therefore, we will have to utilize the limited power supply, with carefulness, supporting it as much as we can to achieve our aim.

Following the advent of low power consuming devices, such as field effect transistors (FETs), and integrated circuits (ICs) in electronics, low power ICT devices are readily available in the market. Thus before ICT features are deployed in any zone, the power flow distribution of such area, has to be studied and incorporated into the design.

This will determine the capacity of inverter/batteries to be installed to backup the ICT laboratory power supply in addition to generators, which may be operated intermittently by those who can afford to install both at the same time. Over the years, fund realized from the ICT deployment, can be used to improve those difficult situations and smooth service delivery obtained.

F) Management/maintenance

Management remains a very critical element in the life of every organization. Everything have to be properly managed; both human and non human resources. Failure of various firm owners to access current materials and ideas relevant to each section of the organization and inappropriate implementation, had been responsible for various poorly performed organization and serious internal tensions among reputable ones, scattered around the world. A firm might be properly launched, but once the various resources employed to handle the affair of the organization failed to be correctly managed, it begins to crumble and eventually collapses if care is not taken. In ICT world, success is achieved when professional ideas are resorted to. Thus managers are advised to maintain appropriate link with ICT professionals to ensure appreciable success in their ICT deployment. Ideas obtained from them enable the firm owner to plan carefully, so as to incur the least possible maintenance cost and achieve smooth ICT service operation in their firm. Growth and expansion is readily made possible with optimum environment created.

III. CONCLUSION

In summary, I strongly recommend that internet technology be applied to teaching and learning process in the nation's education system, especially from secondary school. Taa bu gboo is an Igbo adage meaning today is still early. Hence internet technology should be quickly integrated into the nation's education system; the earlier the better.

IV. RECOMMENDATION

It is obvious that this article strongly supports the notion that nation development is possible through education, among

others such as security, power etc, driven by technology, all working in union with each other.

The technology pointed out here which is necessary to effect rapid positive practical knowledge acquisition both personally or collectively and thus nation development is internet technology.

Certain roadblocks to its effective applications had been discussed. It is vital to note that the only problem without real-time solutions on this planet earth is human death. Death can only be averted and extended through the help of technology, but cannot be eliminated completely. Once the appointed time reaches, the soul departs the body and the body returns to its original form, (Dust and sand). Every other problem have solution, either ready made or yet to be discovered by the people faced with that problem at that point in time. Owing to this, each of the identified problem and even those not specified or the ones to be encountered in the cause of internet technology deployment all have solutions.

The building block of all these solutions lies in the personal disposition of those involved in the process. The issue of acceptance has to be viewed objectively. To survive in this world, man need to experimentally test new things with positive dispositions. Whether the result is good or bad, determines the next line of action whose consequence is improvement.

About critics, we have to embrace it but should not allow it to deter our progressive development. It is necessary to be reprimanded of your errors, because it will enable you improve your modalities and head towards perfection.

Considering initial capitalization, it is truly appreciable, but it requires proper planning, knowing fully well that ICT generates money as well as knowledge base, which ever way it is applied. What is actually required here is to draw a proper master plan of how to get the fund, and enter good term of agreement with ICT Service Company or personnel who will foresee the installation and support services prior to total handover, on how to pay them for the services. The initial fund committed in the project will be recouped after or within a carefully calculated number of years, depending on the size and performance of the firm in consideration.

Power issues cannot be over looked. While government tries their best to restore good electrical services to the country, development in every other sector must keep advancing. Thus ICT deployment plans, should take into deliberation, alternative source of power most affordable for each client. This will enable them grow and develop in the face of limited available resources while hopping for better tomorrow. Solar power/inverter or generator/inverter systems are the most common source of alternative power supply.

Management plays a very crucial role and should be tackled with diplomacy. Professionals in every area of the firm should be consulted, training for other staff conducted, when necessary, atmosphere for personal and collective research and development created and firm grows to the best of its ability. When management is got right, maintenance becomes a routine, simple/easy and affordable.

Computer/ICT education should be made compulsory for all secondary school students. With the present policy, only those who wish to study computer goes for it at the secondary level. Efforts should be made by Ministry of Education (at Federal and State levels) to post teachers skilled in ICTs to each secondary school to impart ICT skills to the students. (Adomi and Kpangban, 2010).

V. FUTURE RESEARCH

I considered secondary school education as grassroots for the introduction of internet driven studies. This is due to age bracket and the ability of children to adapt to it easily. In secondary school, a child is old enough to learn how to operate digital devices such as phones, computers and their likes, when guided. Any age below that age of first year in secondary school, which is usually between 9-12 years in most cases, I consider as not yet fit for the exercise, though in developed nations most children below that age bracket, who were exposed early enough, had already become experts in operating computers and other related devices.

Thus feature research studies should explore the possibilities of introducing internet powered studies below this age limit that is in the primary and kindergarten education system. That will be after exploring the result and effect of its application in the secondary education, in the overall performance of the nation's undergraduate/graduate students and the emerging workforce within the next decade.

Abbreviations: ICT, ICT4D, FETs, ICs.

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