ICTS IN NIGERIAN SCHOOL SYSTEMS: SHIFTING FROM THEORY TO PRACTICE

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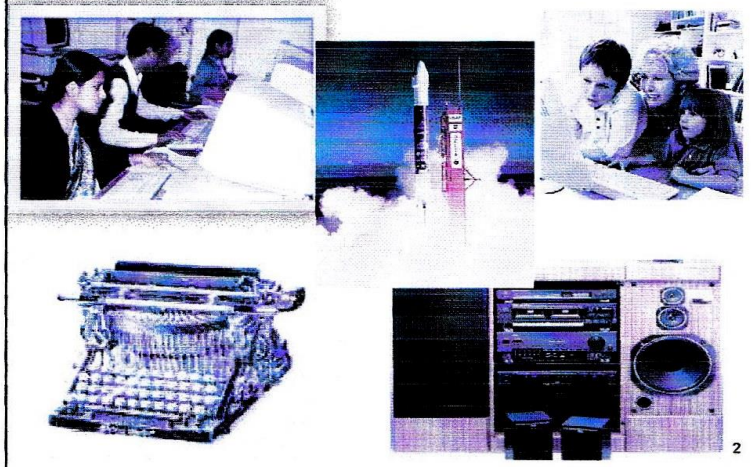
1

SOME TOOLS OF ICT



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Abstract

Nigeria like any African country is under pressure by accelerated globalization. She is facing a dramatic dilemma of establishing a high quality system of education quickly or face development regression. Information and communication technology offers a rapid remedy.

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The Federal Ministry of Education created its ICT department and has since been collaborating with several government agencies and other stakeholders in the private sector to initiate ICT-driven projects and programmes to impact all levels of the education sector.

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Abstract Contd.

Attempt has been made in this paper to review few of these initiatives and their objectives for establishment. Major challenges in the effective countrywide development of ICT in education are critically reviewed and strategies for shifting from theory to practice are discussed.

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INTRODUCTION

Development in Science and Technology has brought to the lime light the indispensable role of the Information Communication Technology (ICT) tools in education. Today, computer technology in schools is one of the most far reaching and fast growing developments in education.

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Introduction Contd.

Proprietors of private institutions use the number of computer systems they can afford to attract students. Parents also assess the quality of the school by the number of the available computer systems and their connectivity.

For effective utilization of any ICT tool, one must be computer literate.

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As a matter of fact, it is essential that every lettered individual be computer literate. It is the right of every citizen to be able to read and write. In analogous to reading,a computer puts out messages that reguire interpretation by the learner (reader)

8

Introduction Contd.

and in analogous to writing, the learner (the writer)

generates messages that can instruct the computer on what to do. These are the two fundamental aspects of computer literacy.

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Computer Literacy: A Sine Qua-Non For Effective Utilization of ICTs

Information Communication Technology (ICT) uses a variety of media referred to in this paper as tools: Computer, radio receivers, television monitors, talking-books, hand-held devices(mobile phones etc)are examples of some of these tools. Computer is one indispensable ICT tool.

10

WHAT EXACTLY IS COMPUTER LITERACY?

Can one who operates a computer well enough to play games, send e-mail, or surf the web be considered computer literate?

Or does ability to do basic word processing be sufficient exposure for one to be classified a computer literate individual?

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What Do Scholars Say About Computer Literacy?

Beekman and Rathswohl (1999) defined computer literacy as the ability to use computers. In Wikipedia (2010), it is regarded as the knowledge of computer and the ability to use them and technology; computer programmes and applications associated with computer.

12

In this paper, the concept is regarded as existing along a continuum from general awareness to the user's ability to write programmes. Computer literacy therefore involves:

- Mental knowledge of hardware, software, data processing, concepts, and application of computer,

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- Attitudes towards computer (including a willingness to use it where appropriate in daily use situations without fear), and
- Skills (requisite skills to operate the system; modify existing programmes to suit daily instructional needs and programming new application, etc).

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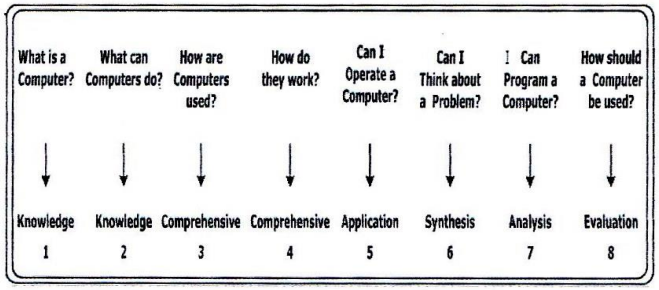
Computer Literacy On A Continuum



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Policy Frame Work On ICT In Education Sector

The Federal Executive Council established the National Information Technology Development Agency (NITDA) as the implementing body for ICT in the country. The National ICT policy of 2001 empowers NITDA .

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NITDA can enter into strategic alliances and collaborate with the private sector for the purpose of realizing the nation's vision of making Nigeria an IT capable country in Africa. Specifically, NITDA policy's objectives were to;

- ensure that ICT resources are readily available to promote efficient national development,

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- guarantee that the country benefits maximally, and contributes meaningfully, by providing the global solutions to the challenges of the Information Age,
- empower Nigerians to participate in software and ICT development,

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- encourage local production and manufacture of ICT components in a competitive manner,
- establish and develop ICT infrastructure and maximize its use nationwide,

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- empower the youth with ICT skills and prepare them for global competitiveness,
- integrate ICT into the mainstream of education and training,
- create ICT awareness and ensure universal access in promoting ICT diffusion in all sectors of national life,

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- create an enabling environment and facilitate private sector (national and multinational) investments in the ICT sector,
- encourage government and the private sector joint venture collaboration,

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- develop human capital with emphasis on creating and supporting a knowledge-based society, and
- create a mass pool of ICT literate manpower using the NYSC, NDE, and other platforms as a train-the-trainer scheme for capacity-building.

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AN OVERVIEW OF PROVISIONS

A closer look at the three tier of Nigeria's education system reveals that no provision is made in the national policy of education for ICT exposure. Nigeria's objective for primary education for instance does not elicit the knowledge of ICT specifically. Rather, emphasis is on:

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- Widening of access to basic education,
- Eliminating of inequalities in the enrollment between the urban and rural populations, and
- Ensuring greater retentions in schools and ensuring long-term permanent literacy for the graduate of the programme

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More Policy Provisions

- However, in the National Policy on Education, the mandate is departmentalized:
- In sub section 101(b) it reads, the Federal and State governments Shall establish ERC where activities shall be multi-disciplinary. ....shall serve as foci for educational innovation introduced by the Nigerian Educational Research and Development Council (NERDC)
- In sub section 102(a) it reads, A network of Educational Services Centres In Nigeria (NESCN) shall be set up to provide forum for (p51)

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NESCN contd...

Exchange of ideas on the development and use of innovative materials for improvement of education. All states, Teachers Resource Centres, University Institutes of Education, and other professional bodies shall belong to the network of Information Communication Technology (I C T)

In sub section 102© it further reads, the NERDC shall co-ordinate the activities of NESCN. (p 54)

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Policy For the Use of Broadcast-media

- In 101(h) it states, Radio and television broadcasting shall form a feature of the educational support services system. To achieve this, all state broadcasting services, the ministries of education and other educational agencies shall work **closely** with the dept. of Technology and Science Education, Federal Ministry of Education (FME) which will play a central co-coordinating role. (p. 53)

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SOME ICT DRIVEN PROJECTS

However, while ICT knowledge is not evoked in the vision set for primary school pupils, Agyeman (2007) reported that the government did order one million laptops for primary school pupils and some of the primary schools have computer laboratories especially those located in the high class zones of the big cities.

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ICT DRIVEN PROJECTS CONTD.

School-Net-Africa: An NGO

A non-profit organization called, 'School Net Africa' also created learning communities of educators and learners to use ICTS for enhancement of education collaborated with the Busy Net Computer company in setting up ICT laboratories in four schools each in some states, (Fall, 2010).

29

ICT DRIVEN PROJECTS CONTD.

Zinox with Microsoft: Private

The Vanguard of 8th February, 2007 also reported of another collaborative initiative by Zinox computers with Microsoft to revolutionalize ICT usage in education from primary to university level.

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ICT DRIVEN PROJECTS CONTD.
Zinox with Financial House

This ICT revolution has also registered corporate backing not only with the computer companies like Zinox but with financial houses. It is reported that over 80 schools have benefited from the Zenith Bank's ICT for Youth Empowerment Scheme which started few years ago.

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ICT DRIVEN PROJECTS CONTD.
NUC : Academic inputs

National Universities Commission (NUC) did prescribe that there should be at least one computer to every four students and one Pc to every two lecturers below the grade of lecturer I, One Pc per senior lecturer and one notebook per professor/reader were equally recommended.

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Majority of the Nigerian Universities have not achieved this ratio for their faculties, though some have made giant or notable strides in campus wide area networking and e-learning course deliveries. Institutions like:

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- **University of Jos which is blazing the trail for content development and e-learning in addition to the campus networking, (Liverpool et al, 2009).**

34

- **Obafemi Awolowo University (OAU) boasts of its best-developed ICT system in the country with a personal VSAT access to the internet and a campus wide intranet services etc**

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Common Factors Associated with Successful Use of ICT in Schools. These include:

- **Pedagogical issues like the need to re-design courses for different delivery modes,**

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- **Instructional issues like matching the instructional strategies and technologies to the learners and provision of incentives to motivate teachers to adopt the innovation.**

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MAJOR FACTORS MILITATING AGAINST ICT ADOPTION IN NIGERIAN SCHOOL SYSTEM

- Lack of trained and interested ICT teachers lack of enabling resources
- lack of or poor infrastructure
- lack of access to ICT tools
- institutional and political issues

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TRAINING GAPS

The low percentage of teachers who have ICT skills,(Ekpo 2002,2005; Agyeman,2007) and the massive ICT education drive needed to correct and develop the required human resources based at the national, state or institutional levels could be worrisome.

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Many contemporary programmes utilizing ICT tools in education have therefore resorted to using 'Blended Learning System' – a system that combines both the traditional face to face learning opportunities with online learning.

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TRAINING GAPS NEEDS

In this regard, the key challenge for this approach is how to design courses such that the best elements of classroom learning are harnessed to provide notable learning experiences. There is need therefore to train and re-train teachers in ICT skills for effective use in schools

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RESOURCE ISSUES

Nigeria generates 3,500 megawatts of electricity as against a required 5,500.

i.e. 40% of the citizens enjoy electricity

About 57 of the 774 local government's headquarters in Nigeria are yet to be connected to the national grid.

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LACK OF OR POOR INFRASTRUCTURE

The lack of requisite telecommunications infrastructure capable of transporting multimedia message is another major challenge to utilizing ICT in schools.

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ACCESS TO ICT TOOLS

Access to computer equipment and other accessories at close proximity to the use area both at institutional and personal levels is inhibitive.

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Institutional Issues

Challenges of creating learning environments that can promote active learning, critical thinking, knowledge creation and collaborative learning are some challenging issues in the effective utilization of ICTs.

Structured curriculum could be inhibiting

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POLITICAL ISSUES.

There is the challenge of encouraging faculty adoption of innovations in teaching and learning with IT. Even at the institutional level, there is much politicking such that innovations are encouraged depending on the initiator's relationship with the management.

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PRACTICALIZING THE USE OF ICT IN CLASSROOM INSTRUCTIONS DESPITE IDENTIFIED INHIBITING FACTORS

Practical Steps To Take

- **Develop an interest for creativity and innovative learning,**
- **Create learning environment for ICT use in the class and around the school,**

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- De-emphasized the structured school curriculum,
- Vary the format of class activities and Take Home Assignments, and
- Emphasize the continuing professional development of teachers.

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STEP 1: Developing Interest for Creativity and Innovative Learning

- Through reading and exploring, Harvey Ullman observed:

Anyone who stops learning is old, whether this happens at the age of 20 or 80 years, anyone who keeps on learning not only remains young but becomes consistently more valuable regardless of physical capacity (In Masson, 2003).

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STEP 1 CONTD.

- **Through attending and participating in conferences.**

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STEP 2: Create Learning Environment For ICT Use

- Provide minimum ICT needs for the promotion of individualized as well as small group learning around specific tasks.
- Provide teachers-work-station according to capability.

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- **Provide learners work areas ranging from;**

- *simple tables and chairs for class discussions*
- *listening centre for group use with story cassettes, CD and instructional guides to the learners on how to relay the story and produce conclusion to the story*
- *Study carrels with audio facilities for individualized use.*

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- *Individualized use of stand-alone laptops/palmtops with the teacher moving around to provide individual help in the use of various ICT skills.*
- *Localized networked computers with 5 – 12 systems (LAN).*
- *Internet connected systems using Modulator – Demodulator device (Modem) or V-SAT.*

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STEP 3: De-Emphasize The Structured Curriculum

- Blend structured curriculum with Free Activity Sessions where students can work at their pace and in accordance with their controlled preferences.

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- Give ample time for them to experiment with knowledge and the skills acquired - this will add a significant motivating dimension.
- Create forum for collaborative learning among peers- discussion on blackboard, building consensus among members of a learning community etc

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STEP 4: Vary The Format Of Class Activities And Take Home Assignments

- Each class activity should entail the use of ICT tools. E.g. A Fine Arts teacher could request his/her students to use pixel arts, vector graphics, 2- and 3-Dimensional computer graphics in producing various arts techniques like animations and graphs.

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- Microsoft Word and Excel facilities could be used to teach all aspects of language (English, French, Nigerian languages) of storage creating interactive learning programmes.

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STEP 4 CONTD.

- A course website could be opened by any lecturer and all information needed for their specific lecture within the week or semester is loaded for the students' use. A similar structure is being created at the University of Uyo for the training of Maritime Seafarer (credit to Kevin Okonna).

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STEP 4 CONTD.

- Summary of class lecture and assignment forward by students or teachers to members of the class via electronic mails using computer and telephone

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STEP 4 CONTD.

- Students should always be referred to relevant websites, e.g. www.tessafrica.net, www.ncte.ie www.schoolnetafrica.org. A rich class activity will open up opportunities for more participatory learning

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STEP 4 CONTD.

Give learners class activities that require integrated assessments comprising observation of;

- realia / real situation,
- generating personal ideas on topical issues,

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STEP 4 CONTD.

- Description of some real or hypothetical instructional situations where the use of some innovative instructional strategies and learner friendly strategies could be employed etc.
- Include provision for feedback

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STEP 5: Emphasize CPD For Teachers

- **Train and retrain teachers on;**
  - Knowledge of ICT skills as well as the deeper process associated with its networking potential which can be beneficially utilized in teaching and learning of various subjects at the three levels of our school system.

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STEP 5 CONTD.

- Skills in behaviour management when ICT is used with youths who appear to be more exposed than them.
- Counseling skills to identify learners with specific learning needs within.

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CONCLUSION

Both teachers and learners should learn how to select from available media those materials that will best promote learning. While we are endevouring to shift from the theory on ICT to practical use of these technologies, we must note that most classrooms will continue

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Conclusion Contd.

to have various display surfaces (chalkboards multipurpose boards, peg boards, bulletin boards, flannel boards, magnetic boards and flip charts) and overhead projector. The foremost concern for contemporary education is not access to more information solely.

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But the development of critical thinking skills, engendering personal and collective reflection and supporting knowledge creation and distribution, The traditional media should not be brushed off in favour of computers and digital technology. Both traditional and digital technologies will continue to have their place in the twenty-first century classroom. All media irrespective of format have their place in education and training, including the Olympia typewriter.

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THANK YOU FOR LISTENING

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