

APPLICATION OF INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) IN TEACHING AND LEARNING ARTS AND SOCIAL SCIENCE EDUCATION IN POST-COVID NIGERIA.

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Abstract

The power of Information and Communication Technology (ICT) in Education and human life cannot be overemphasized. Information and Communication Technology (ICT) has turned to be an essential source of innovation and enhancement of efficacy in various activities of life universally. Teachers must have knowledge and skills to use the new digital tools and resources to help all students achieve high academic standard. The application of Information and Communication Technology (ICT) into the school system would go a long way in achieving the objectives of teaching and learning. This paper seeks to highlight the concept of ICT, application and challenges of ICT into the school system; future prospects of ICT in teaching and learning; the necessary facilities for the effective implementation of ICT in public Nigerian schools and Implications for Arts and Social Science Education Teacher. The paper concluded by recommending that the government at all levels, non-governmental agencies and Parents Teachers Association should help in the provision of ICT facilities to schools to enable teachers make use of them for teaching and learning.

Keywords: Information and Communication Technology, Teaching/learning, Nigerian schools.

Introduction

Information and Communication Technology (ICT) is the technology which supports activities involving the creation, storage, manipulation and communication of information, together with their related method, management and application (Udu, 2013). Odo (2015), opined that ICT means the use of computer system and telecommunication equipment in information processing which are made up of three basic components; using computer, transmission of information using telecommunication equipment and dissemination of information in multimedia.

Educational systems around the world are under pressure to use the new information and communication technology (ICT) to teach students the knowledge and skills needed in the 21st century. (United Nation Educational Scientific and Cultural Organization (UNESCO), 2002, 2008). UNESCO in Ajuzie (2013) maintained that to effectively harness the power of the new ICT to improve learning, the following essentials conditions must be met:

- Students and teachers must have sufficient access to digital technologies and the interest in their classroom, schools, and teacher education institution.
- High quality meaningful and culturally responsive digital content must be available for teachers and learners.

(i) Definition of Information and Communication Technology (ICT)

(ICT) has actually changed human labour and improvement in all walks of life. This can be seen in banks, engineering, medicine, administration, aviation industry, communication sectors, religion, health, economics, oil and gas, politics including education. ICT are technological resources for the support of education which are used for processing, transmitting, storage, disseminating of information and so on for effective teaching and learning. The availability and utilization of the ICT facilities is unrealizable in schools when compared with what is obtainable in the developed nations (Nnaekwe and Ugwu, 2019).

Virtually all the curriculum in education has been integrated with ICT without implementation. ICT application include not only registration and admission of students, online feeling of forms, e-examination and result checking but also developing a digital online modified Learning Management System (LMS) which will contain all the courses and related information ad regards university activities. ICT application in every curriculum has every tendency to enhance teaching and learning in the classroom which thereby produces positive result towards civilization and human development (Kraleva, Kralev & Sabani, 2019).

(ii) Application and challenges of Information and Communication Technology (ICT) into Teaching and Learning in Nigerian Schools.

The application of ICT into the teaching and learning in Nigerian schools would go a long way in achieving efficiency and effectiveness in educational system. Suffice it to say that the integration of ICT into the school system in Nigeria is not without

problems. Below is a diagrammatic representation of some challenges that may affect ICT application in Nigerian Schools which includes:

- (a) Students Lack of Knowledge about learning ICT Packages
- (b) Challenges of Power Failure
- (c) Lack of Intensive Capital
- (d) Lack of Spare parts and maintenance
- (e) Inadequate Skilled Manpower
- (f) Challenges of Large Population of Students

Diagrammatic Representation of some challenges affecting ICT implementation

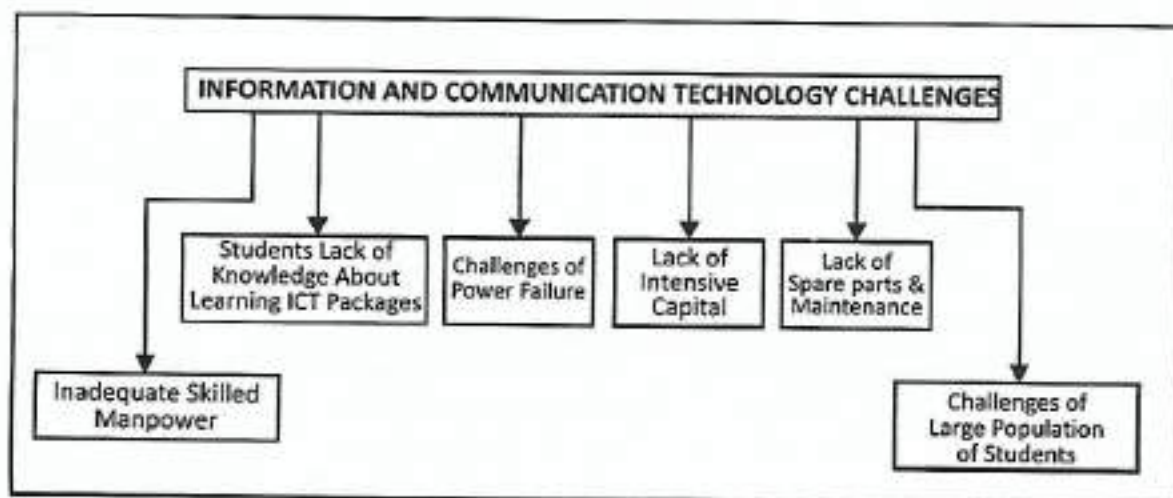


Fig 1: Nwadiokwu, C.N. (2018)

From the diagram above, some initial teaching may be necessary on ICT packages as students may have no ideas what the packages offer in terms of allowing them to structure the knowledge in their own way. Power supply is a major problem in this country and these ICT facilities require constant power supply which is not always available. The programme requires a lot of money and time to be implemented, because to purchase the computers, link them to the internet and manage them is capital intensive.

Inadequate skilled man power is a major problem because the trained manpower who can handle the ICT facilities are very few. It will also take some time and money to train more manpower to handle the facilities. Spare parts and maintenance of ICT facilities is also a major problem facing programme. The population of students in our teacher colleges is high. This makes it difficult for the teacher education to provide ICT facilities for all the students at the same time (Udu, 2013).

(iii) Future Prospects of ICT in Teaching and Learning

The importance of ICT is evident in any economic development. The school in particular and the world in general needs update information in technologies since we are now in a global village. Information and Communication Technology (ICT) is a unique

tool capable of encouraging sustainable economic and social development in the society. The prospect of ICT application can be viewed in the following areas: Designing of Website; Database Programming; Technical Maintenance Skills; Computer Training Centres; Computer Networking; Cyber-café; Collaborative Learning; Improving Teachers Education and Feedback.

Young school leavers can be fully engaged in web design thereby bringing market information closer to the rural dwellers through the use of local language that is understood by the people. Many Small and Medium Enterprise (SMEs) today employ the use of database in their daily business transaction. Young programmers can adequately earn a living by coding the programmes that will run these SMES. One of the major requirements in the ICT world is the technical skill to service the computer and other ICT facilities. Youths can develop themselves in this area and then become self-reliant as they can even serve as consultants to the governmental and non-governmental organizations (Victoria and Tinio, 2014).

Young people are increasingly being engaged in the training of other youths (i.e. train the trainers) in acquiring computer literacy thereby getting their source of livelihood from running the training centres. Computer Networking plays an important role for easy and effective dissemination of information in industries, organization, institutions and almost all governmental parastatals. Hence, young generations can be empowered with Industrial Training (IT) skills on how to do computer networking. Young men are being employed to manage various cybercafé throughout the world thereby giving them job opportunities for self-reliance (Ngwu, 2014).

ICT supported learning provides learners the opportunity to work with people from different cultures, thereby helping to enhance learners' teaming and communicative skills as well as their global awareness. In models learning, learning is done throughout the learner's lifetime by expanding the learning space to include not just peers but also mentors and experts from different fields. ICTs have also been used to improve access to and the quality of teacher training. For example, institutions like the Cyber Teacher Training (CTTC) in South Korea are taking advantage of the internet to provide better teacher professional development opportunities to in-service teachers. ICTs allow learners to explore and discover rather a merely listening and remembering (Langat, 2015).

Diagrammatic Illustration of Future Prospects of ICT in Teaching and learning



Fig 2: Source: Nwadiokwu, C.N. (2018)

Fig. 2 shows the prospects of ICT as a unique tool capable of encouraging sustainable economic and social development in the society, community and nationwide for future development.

(iv) Supposed ICT Facilities that are of necessities in Nigerian schools.

The supposed ICT facilities that are of necessities in Nigerian Schools are graded into seven (7) different Parts namely: (a) Establishment and organization of Centre for Educational Technology; (b) Equipments (hardwares) (c) Softwares of Consumables (d) Furniture (e) Safety Devices (f) Personnel and (g) Sections.

(a) Establishment and Organization of Centre for Educational Technology Introduction

The Centre for Educational Technology (CET) should be a service unit in the School of Education which acquires, Produces and houses instructional resources to facilitate effective teaching and learning in all the Schools of the College. The unit is to be headed by a Co-ordinator who must be a specialist in Educational Technology, with a minimum qualification of Master's Degree and not less than Senior Lecturer grade. The facilities should include the following: Co-ordinator's office; Offices for lecturers; Offices for technical staff; Photographic studio; Colour production laboratory; Graphic studio; Micro-teaching laboratory with a control room and a suitable number of booths; Equipment Repair/Maintenance Workshop, Projection room, Computer room; Workshop for production of instructional materials and Unit store

(b) Equipment (Hardwares): Closed circuit television (CCTV); CCTV Monitors (television sets with remote controls); Video camera with accessories; Video player/recorder; Editing/dubbing machine; Public address system with accessories; Slide projectors with accessories; Opaque projectors with accessories; Overhead projectors with accessories; Audio projectors; Amplifiers; Microphones; Photographic camera with accessories; Tripod stand for video and photographic cameras; Trolley for equipment; Floodlights; Projection screens; Loud speakers; Duplicating machines; Photocopying machines; Voltage stabilizers; Power extension box; White board; Computer equipment with printers; Magnetic chalkboards; Cable satellite facilities; Film development and printing equipment; Air-conditioners, refrigerators, Scanner, Disc Player, and so on.

(c) Softwares or Consumables: Slides, audio tapes, video cassettes, diskettes, batteries, extension cables, multi-purpose plugs, 35mm films, drawing pens, stencils, typing, duplicating and photocopying papers, cardboard papers, tempo markers, poster colours, overhead transparencies, transparency pens, pencils, erasers, and so on.

(d) Furniture: Big tables for student's use; Stools and chairs for students; Large cupboards, for storage of materials; Tables, chairs and shelves for staff use; Drawing boards for graphics

(e) Safety Devices: Fire Extinguishers and Sand buckets

(e) Personnel: A Co-ordinator who is an Educational Technologist; Other Educational Technologies; Secretary; Computer Operators; Graphic Artists; Projectionists; Video Cameramen; Computer Technicians; Store Officer; Photographers; Clerk; Messenger; Cleaners

(f) Sections: Graphic section; Photographic section; Media access and retrieval section; Reprographic section and Equipment repairs/maintenance section.

(v) Implications for Arts and Social Science Education Teacher

Arts and Social Science Education teachers has the potentials to accelerate, enrich and deepen skills, motivate and engage students, relate school experience to work practices as well as strengthening teaching and helping schools change.

Ngwu (2014), commenting on the availability and adequacy of ICT facilities in Nigerian schools maintains that most ICT resources are not adequately available in schools. He adds that even in schools where a few of the facilities can be found, most of the facilities are not in good condition for usage by Arts and Social Science teachers during instruction. This according to him implies that even though Arts and Social Science teachers are adequately trained and are willing to use ICT to impart knowledge to students, they are blocked from doing so by the lack of technological equipment and facilities (Ngwu, 2014).

It has been observed that the inadequacy and the non-availability of ICT facilities in some cases in Nigerian schools has made very difficult for the utilization of ICT for

teaching and learning in the 21st century. Teachers in Art and social science education realize that the availability of ICT tools for effective instructional delivery is relatively low, except for laptops, multimedia projectors and internet facilities that can be found in few school. They also maintain that the situation is worst in public schools; as most private schools located in towns and cities to a very great extent has ICT facilities. They went on to argue that this affects the quality of graduates produced from Nigerian institutions. They therefore submit that ICT tools should be made available to schools in sufficient quantity to enable Art and social science education teachers, teach effectively since they are an integral part of instruction delivery (Egomo, Enyi and Tah, 2012).

Conclusion

Based on the foregoing, it is clear that the application of ICT into the educational system will play an important role for sustainable development both for developed and developing countries. ICT will become a key tool in education for enhancement for good course organization, effective classroom management, self study collaborative learning, task-oriented activities and effective communication between the actors of teaching/learning process if applied fully in the school system. In conclusion, the schools/government should provide adequate ICT facilities and technical support staff that will assist the Arts and social science teachers when they encounter hardware and software problems.

Recommendations

The following recommendations were made arising from the study:

- ◆ The government at all levels should make adequate provision for the procurement and distribution of ICT facilities to schools to enable effective teaching learning
- ◆ NGOs and PTA should assist schools in the provision of ICT facilities to enable teacher made use of them for teaching and learning thereby enhancing teaching and learning
- ◆ Teachers should be encouraged to make do with the few available ICT facilities in their schools for teaching and learning.
- ◆ ICT should be brought into our classrooms and not just computer laboratories. Virtually learning environment and online testing should be encourages. Blended learning should also be introduced.
- ◆ Recognizing the fact that ICT can hinder national development and economic prosperity in any nation when applied wrongly, we must ensure its appropriate and legal use so as not to stall national development as ICT diffusion and usage becomes widespread
- ◆ We must fifth corruption from all fronts as all efforts to massively, diffuse and use ICTs to enhance national development will fail if the prevalence of corruption remains high in our nation
- ◆ Computers should not be confined to the computer laboratory but be made part of each classroom and hence should be used as part of each lecture session so as to facilitate blended learning. The curriculum should be reviewed to accommodate this change. This will further help to integrate ICT in the teaching and learning process.

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