

## **Challenges in the Usage and Teaching of ICT in Schools**

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### **Abstract**

The world today has gradually evolved into a global village where information goes viral in order to reach a mass audience within the target audience. In a bid to bridge the widening gap between illiteracy and literacy levels in the education sector the use of Information Communication Technology has emerged with varying challenges with the sole aim of creating information to reach the intended audience at a time. The most prominent of them is the challenge of utilizing its services as ICT has so many options. Two models were employed in this research; that is the behaviorist and the constructivism theories and the findings here posits that humans are in-nature social beings so, by employing the social aspect of ICT that mainly has to do with interaction among school learners and their teachers, a whole lot of gap of education biases would be bridged. As a dimension of virtual communication, the Teaching approach has been suggested here, as a less elaborate means than the various other methods. It is very important to make education accessible at any time by everyone; this will help in reducing the level of illiteracy; Information Communication Technologies therefore, aids in education by speeding up information delivery which in turn brings about improvement in the education environment.

**KEYWORDS:** Information Communication Technology, Education, Gap, Education biases, Teaching method.

### **Introduction**

Information Communication Technology (ICT), is a broad subject and the concepts are quite evolving. Information and Communication Technology (ICT) refers to technologies that are been used for collecting, storing, editing and processing of information in various forms. The emergence of Information Technologies has made virtual communication a reality. It has dissolved the barrier of distance to communicate and enabled interaction with people who are hundreds of thousands of kilometers away especially in real time become a reality. Digital revolution made data processing very easy to handle. In other words, ICT provides an ideal platform for learning in the new paradigm.

New ICT trends and their constructive application are essential in modern teaching and learning. A new virtual dimension is now attached to learning. Though there is much less restrictions in time and space in its

usage. In the developed world in particular, we are now able to contact anybody, anywhere, exchanging information and organizing our lives, once the technical background is available ie a smart phone or a broadband internet connection. As the use of technological advancements progresses, it becomes a dynamic concept to acquire knowledge with ever increasing spatial and temporal dimensions. On the one hand, this advancement in education diversified, corresponding to increasingly high levels; on the other hand the time spent in education has also doubled in the past hundred years, from 6-8 years to 12-16 years.

In modern society ICT is ever-present, with over three billion people having access to the Internet. With approximately 8 out of 10 Internet users owning a Smartphone, information and data are increasing by leaps and bounds. This rapid growth, especially in developing countries, has led ICT to become a keystone of everyday life, in which life without some facet of technology renders most of clerical, work and routine tasks dysfunctional. The most recent authoritative data, released in 2014, shows "that Internet use continues to grow steadily, at 6.6% globally in 2014 (3.3% in developed countries, 8.7% in the developing world); the number of Internet users in developing countries has doubled in five years (2009-2014), with two thirds of all people online now living in the developing world."

Therefore, to achieve this primary purpose of creation of information that could reach the intended audience, it is important to employ the services of Information Communication Technologies such as Digital camera, Scanner, Smartphone, Calculator, Personal Computer (PC), CD, DVD, Pen drive, Microchip, Television (TV), Projector, Internet, Video conferencing, Mobile technology, Radio and a good number of others.

Two models that best define and describe the human dimension of Information and Communication Technology are: the behaviorist theory and the theory of constructivism. Teaching models predominantly believed in information transfer. One of the variants of constructivism, social constructivism positioned that knowledge creation while learning is a social process. Social interaction was identified as a necessity for learning to happen. This theoretical position took learning beyond the walls of the classroom. All these together opened up new pedagogic possibilities in and outside the classroom. The pedagogical practices changed from lecture mode to interaction mode with the aid of ICT.

### **Information and communication technology in education**

The expanding use of Information and Communication Technology, including The New Media, has given rise to a growing demand of the

teaching of Information Technology as a separate subject in schools and also in tertiary Institutions.

According to a report released in March, 2018, by The United Nations Education and Scientific Cultural Organisation (UNESCO) on Information and Communication Technology (ICT) in Education, Information and Communications' Technology (ICT) can impact student learning when teachers are digitally literate and understand how to integrate it into curriculum:

“Schools use a diverse set of ICT tools to communicate, create, disseminate, store, and manage information. In some contexts, ICT has also become integral to the teaching-learning interaction, through such approaches as replacing chalkboards with interactive digital whiteboards, using students' own smartphones or other devices for learning during class time, and the “flipped classroom” model where students watch lectures at home on the computer and use classroom time for more interactive exercises.”

When teachers are digitally literate and trained to use ICT, these approaches can lead to higher order thinking skills, provide creative and individualized options for students to express their understandings, and leave students better prepared to deal with ongoing technological change in society and the workplace

In many countries, digital literacy is being built through the incorporation of information and communication technology (ICT) into schools. Some common educational applications of ICT (actually new innovations that aid the teaching profession) include:

Similar detailed exploration of ICT use can be taken up for other aspects of educational practice. Professional development of teachers is another such example. ICT tools provide various opportunities in the form of Webinars, online courses, online collaborative projects, online tutorials, social networking, and so on.

The study of Information Technology serves a dual purpose. It plays an important role in cognitive development and likewise practical application of skills learnt through the utilization of skills learnt. Students must master appropriate techniques for the acquisition, processing and transfer of information, and must also become acquainted with legal back-ups in connection with handling and procession of data.

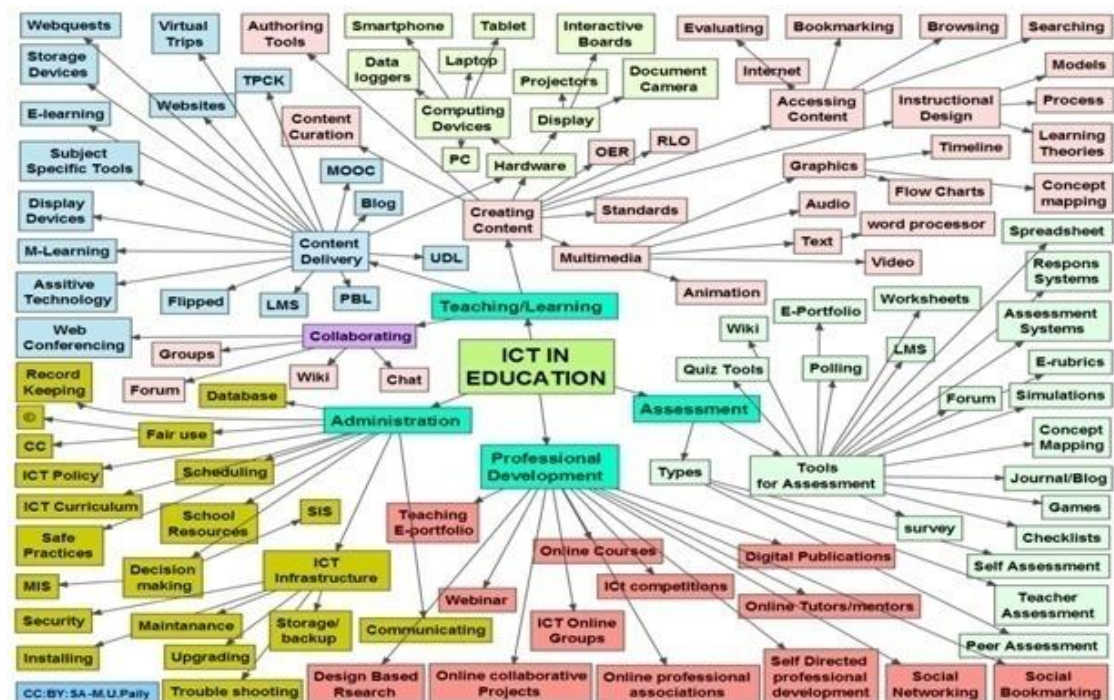
In Hungary for instance, the teaching of Information Technology which was officially approved in 1995 and subsequently introduced as course on Information and communication technology (ICT) in education part of the National Core Curriculum (NAT) in 1998, has been making

tremendous impact in the academic history of students. Although the primary goal of the program was to help students obtain information by giving schools access to the World Wide Web, these computer labs played and continue to play a decisive role in giving students access to curricular requirements in connection with ICT.

It is known that ICT is vital to all human activities more so as the world has gone digital and is at the point where nothing is more valuable than ICT owing to its efficiency and enormous benefits. The essence of digitization is the ability to access information with ease in various forms by the use of electronic gadgets and computerized devices like desktops, palmtops, smartphones, tablets, mini pads, laptops etc. (Techterms, 2010)

ICT is needed for numerous tasks which include: students' application to Universities and Colleges of education; processing and registration of large application of students; creation of students' records in a database for students and staff; design and development of the college or university web site; conduct of research by members of the academic and students; administration for managerial purposes; students' assessments, exams and records (Beda, 2012)

**A DETAILED CONCEPT MAP OF ICT IN EDUCATION**



The concept map given here illustrates how I CTs have the potential to be used in various practices of education, including teaching and learning,

assessment, administration and teacher professional development. For example, the teaching and learning dimension of education can integrate ICTs in content creation, content delivery and collaboration. Let us see one of them in detail, content development for example. ICT provides us with many tools, including hardware and content. The hardware encompasses computing devices as well as display devices. The content sources can be Open Education Resources (OER), and Reusable Learning Objects (RLO). (source:[https://www.riemysore.ac.in/ict/unit\\_\\_1\\_\\_information\\_and\\_communication\\_technology.html](https://www.riemysore.ac.in/ict/unit__1__information_and_communication_technology.html))

### **Specific areas of application of ICT in education**

The potential of each technology varies according to how it is used. Haddad and Draxler identify at least five levels of technology use in education: presentation, demonstration, drill and practice, interaction, and collaboration. Each of the different ICTs—print, audio/video cassettes, radio and TV broadcasts, computers or the Internet—may be used for presentation and demonstration, the most basic of the five levels. Except for video technologies, drill and practice may likewise be performed using the whole range of technologies. On the other hand, networked computers and the Internet are the ICTs that enable interactive and collaborative learning best; their full potential as educational tools will remain unrealized if they are used merely for presentation or demonstration.

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Sife and Sokoine (2007) state that functionally, e-learning includes a wide variety of learning strategies and ICT applications for exchanging information and gaining knowledge. Such ICT application according to the authors "include television and radio; Compact Discs (CDs) and Digital Versatile Discs (DVDs); video conferencing; mobile technologies; web-based technologies; and electronic learning platforms".

World Wide Web (WWW) for instance, is a set of software tools and standards which allows users to obtain and distribute information stored on

a server and connected to Internet. WWW is a decentralized information system, in which anyone can add new information anytime. Lecture notes and other teaching materials are placed on the WWW including linkable useful websites to these resources for students to access. In the recent years, Chen, et al. (2004) stresses that 'web and internet technologies have matured significantly by providing a uniform access media for both asynchronous and synchronous learning. This phenomenon has significantly increased the popularity of on-line learning". To Anderson (2007) "the usage of web technologies in e-learning are further enhanced with the web 2.0, which is a set of economic, social, and technology trends that facilitate a more socially connected web where everyone is able to add to and edit the information space. These include blogs, wikis, multimedia sharing services, content syndication, podcasting and content tagging services.

### **Methodology Employed**

Employing the teaching method in ICT education has proved overtime to be helpful in training both the learners and their teachers in the usage of ICT in education. The teaching experience of teaching the discipline "New Information Technologies and Technical Facilities of Education" in schools gives the teacher especially and the learners the opportunity to identify and solve the contradictions inherent in the practice of ICT in promoting education (Kushnir, et al, 2013).

- Some of the many diverse ways ICT in education could work out effectively are:
- Integrate ICT's in the learning process, as a key competence and contributing to the acquisition of the target foreign language, for instance.
- Use of ICT's in the classroom to work on information processing, authentic communication, and on the learner autonomy, as the builder of his or her own learning process;
- Challenge students with different types of supports and formats and, therefore, a great variety of activities in which they pass from receivers to makers is created;
- Bring students to the cultural elements through authentic and real-time documents.
- Bring students to the real contact with the target foreign language and users for example (whether natives or not), by means of electronic mail, "chats", "blogs", or spaces wiki;

Chambers et al. (2004) take aim at providing “language teachers and trainers with a guide, in both practical and pedagogical contexts, to the effective integration of Information and Communications technologies (ICT) into language teaching and learning, both inside and outside the classroom.”

### **Challenges in the usage of ICT (Information and Communication Technology) in Nigeria**

The biggest challenge in the usage and teaching of Information and Communication Technology provides us with so many options of utilizing it, there is also growing concerns associated with it.

- Unauthorized content use: Internet and digital form of the data has allowed easy duplication of the content without attributing/acknowledging the source of the content. High speed internet and high capacity storage devices have made it easy. Appropriate attribution needs to be done as an ethical ICT use.

Introducing and using ICTs to support teaching and learning is time-consuming for teachers, both as they attempt to shift pedagogical practices and strategies and when such strategies are used regularly. Simply put, Teaching with ICTs takes more time.

Tongia (2004), summarized the challenges facing complete adoption of ICTs globally as the four A’s- Awareness, Availability, Accessibility, Affordability. He explains further that digital divide, which is a gap in the use of ICT occurs basically because of these four reasons which include:

- People are not aware of the values and benefits of ICT
- ICT services are not available to some people due to hardware proximity.
- The services are in accessible owing to lack of the ability to access it, and;
- The services are expensive; hence, most organizations cannot afford it.

Another challenge facing the use of Information and Communication Technology in Nigerian tertiary institutions is the issue of computer illiteracy. This is due to the fact that an average Nigerian University staff is not computer literate, which is disappointing in this modern digital era (Idowu & Esere, 2013). Over the years, computer illiteracy has become really a great threat to any establishment, likewise an educational institution as almost all human activities depends on ICT (Anene, Imam, & Odumuh, 2014)

### **Suggestions and recommendations towards overcoming the challenges**

Internet broadband is been recommended here, because it makes it easy for students to access academic information on time. Teachers use this broadband Internet to create and deliver academic data using videos and graphic illustrations. With this also, teachers can assign tasks to students via electronic email or campus educational forums and also via Social Media platforms.

The government in collaboration with the regulatory bodies should make a policy to ensure that each Tertiary institution offices and classrooms have these basic equipment and internet in good working condition at all times with trained staff to teach and guide students and staff as well on how to operate them. This as suggested should be one of the main requirements for accreditation, in order to ensure compliance.

It is therefore, recommended that, schools especially higher institutions in Nigeria imbibe holistically, advanced technologies to improve teaching and learning processes so that students are prepared well for the real world competitive environment. Particularly, technology integration in higher institutions in Nigeria must be adopted to support curricular goals of the institutions for higher quality education.

### **CONCLUSION**

There are huge challenges to the deployment of ICT in Universities and Tertiary institutions. However, if the government in Collaboration with schools can explore some of the suggested solutions to these challenges, a lot of gap in literacy level will be bridged. Also, there is need for continuous manpower development of both Tertiary institution staff, students' and ICT professionals, through regular seminars and conferences in order to be up to date with new technologies in the world.

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