

## CHAPTER TWENTY

### **THE ORIGIN AND DEVELOPMENTAL STRATEGIES OF ICT IN THE NIGERIAN EDUCATION SECTOR: THE MUSICOLOGISTS' CUM OTHER SCHOLAR'S VIEWPOINTS**

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#### **Abstract**

There are developments in the Nigerian education sector that indicate some level of Information Communication Technology (ICT) application in schools. The National Policy on Education (the Federal Republic of Nigeria, 2014), recognizes the prominent role of ICTs in the modern world and has integrated ICTs into education in Nigeria. On the above bedrock, this study traced the origin and the developmental strategies of ICT in the Nigerian education sector from the perspectives of musicologists and other scholars. In a bid to tackle the enormous difficulty associated with the traditional face-to-face system of education in Nigeria, the educational authorities deemed it fit the key to the global trend which is the application of computers to studies especially the study of music. Musicologists being very apt to the reigning propensity saw the need to join the moving trend hence they embraced ICT in all aspects of its dealing. This study adopted the survey method which entailed the use of literature materials as a major source of information. As a pilot study, the ideas of various scholars among whom are musicologists were accessed ascertaining their perspectives on the origin and developmental strategies of ICT in the Nigerian educational sector. The findings of the study encourage researchers and musicologists of all levels to continue embracing and advancing ICT approaches that enhance scholarship. The study strongly recommends that the nation's curriculum planners should continue to design curricula that will encourage and emphasize technology-driven education in the 21st century with education course contents that will improve general research in every field of study.

Keywords: Musicologists, ICT, Nigerian education sector, Origin, developmental stages.

#### **Introduction**

The study noticed that before the introduction of ICT in Nigeria, many researchers suffered from a lack of available course materials in their various fields of study, especially as regards musicology. On the other hand, some people who had jobs but desired to obtain tertiary institution degrees and further studies had to compete for the few spaces that were offered by the public schools especially institutions of higher learning. Those offered admissions had to apply for study leave as they had to go through the traditional learning system. This kind of further education system was characterized by a limited number of students that could be absorbed each academic year, consequent upon approval for absence from their places of work for the duration of the study. On the other hand, musicologists who are into research found it very difficult to source literature materials in music as well as in solving other musical related problems because of the lack of adequate hard copy course materials in the study of music.

In the aspect of resource persons, the physical absence of music educators on a few occasions and consequent lack of hard copies of research materials made available to musicologists impact negatively on musical studies. Owing to the present economic situation in the country, it is also observed that most contemporary musicologists engage themselves in one form of menial job or the other to enable them to meet up with some educational demands. When the above turn out to be the situation, the need to adopt ICT becomes a sine qua non to aid musicology. Since it is difficult to talk about the place of ICT in education without firstly digging into its root, this study investigated how musicologists and other scholars view the origin and developmental strategies of ICT in the Nigerian educational sector. The research established that the knowledge about the origin and developmental strategies of ICT in Nigeria's educational sector bridged the gap and made for an improved learning situation in Nigeria pointing to the fact that the use of ICT in the study of music is indeed one of the good things that have positively impacted on the nation's educational sector. It is hoped that this study will draw the attention of education administrators to providing necessary infrastructures and ICT facilities in the Nigerian educational sector. It is also hoped that through the findings of the study, musicologists of all levels would be encouraged to develop skills and competencies in information communication technologies. It will also be useful to the curriculum planners in designing curricula that will encourage and emphasize technology-driven education in the 21st century with music education course contents that will improve students' skills and competencies for employability and self-sustainability on graduation.

### **The Origin of ICT in the Nigerian Education**

**Sector** Okebukola in Umeh (2018) reports:

It should be noted that 2004 was not the first attempt the Nigerian government made to introduce computer education in schools, in 1988; the Nigerian government enacted a policy on computer education. The plan was to establish pilot schools and diffuse computer education innovation first to all secondary schools and then to primary schools. Unfortunately, the project did not take off beyond the distribution and installation of personal computers (p. 19).

The federal government of Nigeria states that government will provide basic infrastructure and training at the primary school level. The junior secondary, computer education has been made a pre-vocational elective and is a vocational elective at the senior secondary school. It is also the intention of the government to provide the necessary infrastructure and training for the integration of ICTs in the secondary school system as well as in the institutions of higher learning. The study carried out by Okebukola concludes that the "computer" is not part of classroom technology in more than 90 per cent of Nigerian public schools. This implies that the chalkboard and textbooks continue to dominate classroom activities in most Nigerian secondary schools. Contributing to the above, Jayeola and Nwoye (2017) say "the enormous benefits of the satellite in global identity and national image projection encouraged Nigeria to launch her first satellite known as –Nigeria Sat 1 in September 2003" (p. 54). In furtherance of the above, the Federal Ministry of Education in Okebukola (2007) states:

In June 2003, at the African Summit of the World Economic Forum held in Durban, South Africa, the New Economic Partnership for African Development (NEPAD) launched the e-schools initiative, intended to equip all African high schools with ICT equipment including computers, radio and television sets, phones and fax machines, communication equipment,

scanners, digital cameras, and copiers, among other things. It is also meant to connect African students to the internet (p. 10).

Buttressing the history of ICT in the Nigerian school system, Olaniyi (2006) contributed by explaining:

In Nigeria, the story of ever-evolving affairs has been the same. The development of more efficient services is now on offer. Calls have also dropped reasonably especially, with the introduction of Voice over Internet Protocol (VOIP) and a review of the interconnectivity rate among operators by NCC. More people are also been empowered with the ability to communicate, within and outside the country. The use of VOIP has benefited the average phone user since routing a call through the Internet attracts less charge unlike the old Public Telephone Switch Network (PTSN). Remote villages, which depended solely on the satellite phone, are now covered by mobile networks leading to cheaper call rates in those areas. In spite of all these enviable achievements, many still see communication as a jamboree and not a necessity. They wonder why they should spend money on communication where there is a stomach to feed, body to cloth and heads to shelter. While many have been restrained by the above factors, the spirit of technophobia has kept some back. This feeling of dislike for technology has led to lower patronage for technology products and services. And if not well addressed may cause a limitation to the expected growth of information in society (pp. 5-6).

Aginam (2006) strengthening the point above explains:

The New Economic Partnership for African Development (NEPAD) capacity-building initiative was to be executed over a ten-year period, with the high school component being completed in the first five years. Three phases were envisaged, with fifteen to twenty countries in each phase. The phases were to be staggered, and an estimated 6100 schools were expected to benefit. The aim of the initiative was to impart ICT skills to young Africans in primary and secondary schools and to harness ICT to improve, enrich, and expand education in African countries. ( Available : [http://www.vanguardngr.com/2002/feature/technology/tec52709\\_2006.html](http://www.vanguardngr.com/2002/feature/technology/tec52709_2006.html). accessed June 16, 2019).

Ajayi (2013) also contributed by saying:

The Nigerian Federal Government has commissioned a Mobile Internet Unit (MIU) operated by the Nigerian National Information Technology Development Agency (NITDA). The MIU is a locally-made bus that has been converted into a mobile training and cyber centre. Its interior has ten workstations, all networked and connected to the internet. The MIU is also equipped with printers, photocopiers, and a number of multimedia facilities. Internet is provided via VSAT with a 1.2m dish mounted on the roof of the bus. It is also equipped with a small electric generator to ensure a regular power supply. The MIU takes the internet to places/areas and various primary

and high schools. The number of buses is so small; however, that most rural areas and schools have not yet been covered (Available: <http://ejd.org/meeting/2003/Ictp/papers/ajayi.pdf>. Accessed June 16, 2019)

This research notes that although efforts have been made to ensure that ICTs are available and used in Nigerian schools especially as it concerns the study of music, the level of uptake is still low. It has been observed by Goshit (2006) that "most schools, both private and government, do not offer ICT training programs." (p. 47). Yusuf and Balogun, (2011) explain "the absence of ICT equipment in most Nigerian institutions of learning as what leads students to resort to cybercafés for internet access... most cybercafé clients in Nigeria are students" (p. 30). Nigeria is a country that has launched its first satellite in 2003 and has benefited a lot from it. Among the dividends of the satellite is the availability of ICT facilities in education. Music as a course of study in Nigeria directly benefits from various electronic gadgets that aid musical studies. Among these gadgets is the compact disc read-only memory (CD-ROM). This device is capable of storing music data such as audio, video – visual and literary documentation on all aspects of music. The stored information on the above-listed devices could be spread for universal consumption and can be decoded on the screen of the computer for academic purposes across the world. Recording in stripes, tapes or compact discs which have been enhanced in recent time, in no small measure, have had great positive effects on the music and movie businesses. The emergence of the above has brought diversities of regional musical practices in quality and handy packages to the doorsteps of millions of homes, distance notwithstanding. In the past, the very bulky analogue recording was in trend but the current digital recording process has taken over making both academics and commercial usage easy. In the new music industry, highly polished output, low manpower demand and less stress characterize the recording process. Advertisements are now made easy through the radio, television, the internet and even social media. Scholastically, they form part of the developmental strategy that the study under review has greatly made researchers benefit from.

### **Concept of ICT and its involvement in the Nigerian Education Sector**

The Federal Republic of Nigeria (FRN, 2014) in the National Policy on Education presented ICT as "any equipment or interconnected system of equipment that is used in the automatic acquisition, storage, manipulation, management, control, display, switching and transmission of information" (p. 39). ICT in this particular study is the collection, retrieval, use, storage and communication of information using computers and microelectronic systems. These definitions are so inclusive that they accommodate radio, television and films. Though, according to Okworo (2008), "the collective and rigid nature of learning and the passive nature of learning associated with the use of radio, television and film do not contribute any innovative changes to traditional methods in the education system" (p. 28). Therefore, the ICT focus of this study is that which has the capacity of providing higher interaction potentials for users to develop their individual, intellectual and creative ability. In musicology, ICT does this through the simultaneous use of audio, text, multicolour images, graphic motion, Sibelius and Finale, etc. with computers and the internet playing the major role.

### **Developmental Strategies of ICT in the Nigerian Education Sector**

Having understood the concept of ICT in the Nigerian education sector, it will be appropriate to look at how Nigeria as a country, and society, have progressed, in assimilating this ever-evolving culture into the keystone of its educational affairs. People, being sceptical over new inventions has been an age-long omen. The attitude of Nigerians towards embracing ICT in education is not anything different from how they react to other new inventions. Tracing the history of adapting ICT to the Nigerian educational system, Olaniyi (2006) explains:

The key players in Nigeria in the development of ICT are the Nigerian Communication Commission(NCC) and National Space Research and Development Agency(NASRDA), the private telecommunication companies/firms like MTN, Globacom, Vmobile. The challenges posed to the Nigeria Communication Commission in 2001 of which some had been met while some had not seen the light of the day...(p. 9).

Having the above point in mind, this paper sees Nigeria as paying lip service to fully developing ICT related services to education because the necessary facilities needed for maximum output of computers in education have not been provided by the education authorities, considering the number of years which have gone by since the introduction of ICT to the Nigerian education sector. Special fields of studies like music and other sensitive disciplines lack the required attention in providing the necessary facilities for research. Since education in Nigeria has been acquired through the traditional method i.e. the face-to-face approach in the past, the urgent need to fully integrate ICT into our educational system is a necessity. With the advent of Information and Communication Technology, computer-assisted instruction in Nigeria should now be widely adopted. There has been a tremendous gain in the nation's educational sector following the introduction of ICT to the nation's education sector. Today, all levels in the nation's educational sector use ICT to complement the face-to-face system of learning. Due to the huge benefits of this trend, both private and public institutions clamour for its adaptation. Based on the above fact, this paper sees the need to throw light on how scholars view the use of ICT in both public and private schools in Nigeria.

### **ICT in Public and Private Education Sectors**

Despite the advantages associated with the use of ICT in education, especially as regards musicology, scholars have argued that school type can also be a determinant factor in the use of ICT. Research has shown that in these two groups, in different parts of the world, private schools have been more favoured than public schools in the use of ICT. Umeh (2018) explains “a study by The National Survey on Computer Education in the Philippines reports that the number of computers owned by private schools is twice as much as what a public school could afford” (p. 89). In Thika, Kenya, a similar study by Nchunge, David, Maurice and Wawweru(2013) supports the above view by reporting:

Private schools are far better than their counterparts in terms of internet connectivity and the existence of ICT policy/guidelines. Differential performances have also been reported based on school type, that is, private versus public schools. The 1996 and 2003 assessments of learning achievement in the core school subjects revealed that pupils who attended private schools scored higher in tests that measured achievements in numeracy, literacy and life skills (p. 142).

Narrowing the above point down to the Nigerian education sector, Olatokun and Folaranmi (2008) concurred by saying:

Private secondary schools have and use ICT more than their public-school counterparts in their operations but the computer was the only ICT facility common in the public schools. Also, the use of computer-aided instruction software was not widespread in public schools. Findings equally revealed that private secondary schools increase their ICT use by buying more ICT equipment and permitting free access to them like their public-school

counterparts that depend solely on the government for the supply of ICT equipment. Constraints such as erratic power supply, high cost of ICT facilities, improper training of ICT personnel among others were identified as the factors militating against the adoption and ICT use in the schools.

Accessed 9th January 2020 from

<https://www.ajol.info/index.php/ict/article/view/32000>

The above discovery has proven the preference of Nigerian parents for private schools over public ones. The general belief that privately owned schools are better equipped than public schools has eaten deep into the fabrics of the citizens' subconscious minds, especially among music scholars. The belief that private schools are better equipped seems to underscore parents' preference for private schools whether primary, secondary or higher education. Taking the secondary school as an example, research findings on the influences of facilities in private and public secondary schools on the use of ICT are controversial. With respect to students' academic performances, Keengwee (2008) found out that "the type of school, classified as public or private did not make any difference on students' academic performance." (p. 134).

However, Ajayi (2013) found out that school type makes a difference in students' academic performances as regards the use of ICT in education. (p. 76). In addition, Falack and Woessmann (2015) reiterated that the type of schools, (single-sex or mixed, private or public) has an effect on the academic performances of students in science subjects (p. 78). This paper completely agrees with the ideas raised by the above-mentioned authors in that the bureaucratic process involved in getting approval from the government to equip the public institutions, especially with ICT facilities many times deter the infrastructural development cum research out comes academic in Nigerian education sectors. Subsequent to the above, this study will be incomplete without discussing the use of modern technologies and their advantages to the study of music, especially as it concerns research in music.

### **The Use of Modern Technologies and their Advantages in Musicology**

In order to make use of technology in musicology effectively, musicologists' attitudes towards technology need to be positive and both music educators and students also need to be trained in using modern technologies in the study of music. Ndibalema (2014) states that "teachers clearly must act as the change agent in the relationship between technology and the students." (p. 13). Having the above assertion in mind, the study makes a case for all musicologists of the contemporary time to see the need to develop good attitudes toward ICT which in turn will make for a positive outcome in the nation's musicology. Onuora-Oguno (2015) says "...the most important development in the electronic media is the use of ICT...there is the need for music scholars and the student alike to have basic computer courses... (p. 130). This paper recognizes basic computer courses as something that will pave way for the needed globalization in music pedagogy and musicology at large. Affirming the advancement of agents of globalization as part of the advantages in musical studies, Jayeola and Nwonye (2017) opine:

In this generation, many think globalization actually began in this century, but that is very far from the truth. Globalization has been on for centuries. The agents of globalization today are essentially almost the same as agents of globalization work faster on a large scale today. Instead of communicating by telegraph between stations, we communicate by internet or telephone directly with one another. Instead of having trade or migration that goes by sailing ship, we now use aeroplanes or much larger and faster ships than in time past. Our mass culture is disseminated across many countries very quickly through movies, television and the internet (p. 54).

As against the previous ways of accessing learning in music studies which used to be scholars carrying bulky volumes of resource materials, today a large volume of literature materials in music and that of the related disciplines could be saved using modern electronic devices thereby making the accessibility of allied literature available and handy. Researchers who are lazy going through a great volume of notes or textbooks can now easily type in a particular topic they want and the electronic system will immediately make the topic and its content available in a twinkle of eyes. ICT aids music scholars to be in time with music and current with global trends. Effective Information and Communication Technology (ICT) being witnessed in this 21st century makes musicology most effective and efficient. In this case, articles, online publications, soundtracks as well as motion pictures could be made available and easily accessed via the net while conducting research in music. Musicologists and other scholars cannot fully be engaged in computer studies without being grounded in their knowledge of ICT. Based on the above, this study discusses the attitudes of scholars to ICT.

### **Attitudes of Scholars to ICT**

To successfully initiate and implement educational technology in Nigeria depends strongly on scholars' support and attitudes. Keengwe and Onchwari (2008) explain that 'among the factors that influence successful integration of ICT into teaching are teachers' attitudes and beliefs towards technology' (p. 650). Korte and Husing (2007) posit that 'a majority of teachers perceive ICT to offer advantages to classroom learning but many also struggle to see specific benefits and methods for use. A number of studies have identified these contrasting perceptions from teachers' (p. 7). Narrowing this down to the conventional classroom, teachers, music teachers inclusive, have varying perceptions about their effectiveness when using ICT in the classroom which can subsequently impact how much they use technologies in the classroom. For example, Gulbahar and Guyen (2008) testify that "teachers in the UK reported high levels of self-rated effectiveness, but teachers in a Turkish study felt much less confident about their technology skills and usage in the classroom" (p. 37). Sang, Valcker, Braak, and Tondeur (2010) say "positive computer attitudes are expected to foster computer integration in the classroom" (p. 103). According to Woodrow in Umeokana (2017), "for successful transformation in educational practice, users need to develop positive attitudes toward the innovation...teachers' attitudes toward computer technologies are also related to teachers' computer competence" (p. 67).

### **Findings on Musicologists cum other Scholars' Viewpoints on ICT**

This includes the awareness and skills required for using particular technologies in teaching-learning activities. Mishra and Koehler in Umeokana (2017) state 'technology is constantly developing and changing, hence, "Technological Knowledge" (TK) which involves the skills for learning and adapting to new technologies should be ready for transforming too' (p. 59). Concurring with the above view, Obakhume (2011) states "on teachers' competence, teachers in Nigerian schools are not competent in basic computer operation and in the use of generic software" (p. 52). It is pertinent to point out here that the music teacher is not excluded in the above discovery. In his own contribution, Yusuf, (2005) says "although teachers have a positive attitude towards the use of computers in Nigerian schools, findings reveal a low level of ICT penetration in the Nigerian school system" (p. 320). Adedeji (2004) "acknowledged the need for music scholars to look into the area of Wide Area Network (WAN) and Local Area Network (LAN). The use of the World Wide Web (www) has facilitated research tremendously in breaking new grounds instead of making use of obsolete materials which ensure a vicious circle movement" (p. 5). Nwamara (2006) found out that "Nigerian musicologists are yet to arrive in the area of proper and maximal utilization of Computer Technology in fulfilling their social commitment" (p. 135). Onuora-Oguno (2015) discovers "for the Nigerian musician to remain a relevant pawn in a technologically growing society, the curriculum of music learning in Nigeria

must be revised to accommodate basic computer courses” (p. 9). Ofuani (2015) emphasized, "computer as a medium of composition has come to stay...modern Nigeria composers must begin to appreciate, learn and use the computer as a medium of composition through notational programs like Sibelius and Finale" (p. 72).

**Upholding the above views, Becta (2004) opines:**

Teachers who do consider themselves well skilled in using ICT feel anxious about using it in front of a class of children who perhaps know more than they do. Music teachers were reported to be afraid of entering the classroom with limited knowledge of the use of ICT. Sourced 6th April 2018 from <http://WWW.emergingtechnologies.becta.org.uk>

Writing on technological pedagogical knowledge, Mishra and Koehler (2006) state that “Technological Pedagogical Knowledge (TPK) is the knowledge of the various technologies which can be integrated and used in educational setting... a teacher should be aware of how learning might be changed by the help of using particular technology” (p. 1017). In his own finding, Cox (2008) explains:

Technological Pedagogical Knowledge (TPK) is the "element that may be used in an equivalent pedagogical context, including the affordances and constraints of those technologies, and how those technologies influence or are influenced by the teacher's pedagogical strategies and student learning" (p. 45).

Concurring with the above view, Kivanc (2011) opines "being aware of the technology, knowing how to use it and understanding the purpose for doing it in the context of the specific subject matter are very important for a teacher" (p. 37). According to Mishra and Koehler (2006), "technology has got a lot of potentials and a teacher with a good Technological Content Knowledge (TCK) should understand this potential of a specific technology for his/her particular subject area" (p. 1018). This paper is therefore optimistic that musicologists' skills in ICT will go a long way in advancing music pedagogy.

**Conclusion**

This study synonymously interchanged Information Communication Technology (ICT) with computer application to studies. It is a process that provides the link between levels of scholars and enabled information, instruction and decision to be conveyed from their point of origin to all those who need to be informed, that is, the researchers especially musicologists. In this study, scholars especially musicologists were exposed to the origin and developmental strategies of ICT studies. The urgent need for them to show a disposition to the use of computers so that they will have the right attitude towards the use of ICT in learning was established. The paper expatiated the necessity of computers in education which opens a new area of knowledge and offers a tool that has the potential to change some of the existing educational methods and classroom environment. The government is the key to the effective exploitation of these resources in the nation's educational system was challenged to rise up to the occasion of doing the needful in accomplishing the required goals in the nation's education sector. This is because the use of computers in the system is like using instructional aids which bring about enrichment in the level of knowledge acquisition in our modern research.

From the result of the study, it is clear that ICT facilitates studies significantly as well as improves musicology and the learning process in general.

## Recommendations

1. This study recommends that the Nigerian education sector should provide functional ICT facilities that would enhance research in music and other disciplines.
2. Adequate training on the use of ICT devices to enhance research in music should be provided by managers of the nation's educational sector.
3. Adequate power supply should be provided in the country to stimulate the use of electronic devices for research.
4. The Nigerian educational authorities should enter into contracts with internet service providers such as MTN, Airtel, Etisalat and Glo so that they can have reliable internet services for a scholarship.
5. Public libraries and school libraries should upgrade their websites or launch websites that researchers can use to disseminate or access information. Such websites should enable scholars to be updated with modern ICT facilities that will regularly enhance their studies.

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