Application of Information Communication Technology in Teaching and Learning of Visual Arts in Secondary Schools in Anambra State

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Abstract
This paper discusses the need to employ ICT in the teaching and learning of visual arts in secondary schools in Anambra State. The availability of the necessary ICT resources, the teachers and their skills, as well as the attendant benefits and constraints of the application were examined. The research questions were on availability of ICT resources and teachers' competence. Ten teachers and forty students from Onitsha north Local Government Area were selected for the study and the data gathered were analyzed using statistical mean score and t-test. The findings of this descriptive survey show that 90% of the schools in Onitsha do not have adequate manpower and ICT resources while 70% do not have Visual Arts teachers at senior secondary level. The paper recommends compulsory computer/ICT training and workshops for existing teachers and employment of more art teachers, better funding amongst other suggestions.
Keywords: Education, Visual Arts/Fine and Applied Arts, Art Class, ICT.

Introduction

Anambra State is one of the most vibrant states in Nigeria in terms of educational, economic, technological and socio-cultural development. It is on record that the State has often maintained top class positions in WAEC and NECO examinations over the years. The State also has a history of producing many renowned educational gurus who have remained some great source of inspiration to generations of her citizens. Such greats include Rt. Hon. Nnamdi Azikiwe & Rt. Hon. Nwafor Orizu, Pius Okigbo, Professors Chike Obi, Kenneth Dike, Chinua Achebe, Ben Enweonwu, Philip Emeagwali, Uche Okeke, and Dora Akunyili, Chukwuemeka Ike, among others. In view of the educational strides of the state in the past, it has become incumbent on the successive governments of the state for sustain if not overtake the established standard. Just as the citizens of the state excelled educationally in the analog era, the global computer and digital landscape was equally immensely uplifted sometime in 1989 with the invention of the fastest supercomputer by an Anambra man in the person of Prof. Philip Emeagwali known as the father of the internet.

In November 2013 the then Governor of Anambra State, Peter Obi donated 22,500 laptops, 1400 colour printers and 520 computers to all the public and mission secondary schools in the state, worth about N2.65bn to help launch our children into the digital/computer era which so many other countries had since adapted to. This visionary gesture by the governor actually improved the standard of teaching & learning in some of our schools, as made manifest by the successive top 1ˢᵗ and 2ⁿᵈ) positions maintained by Anambra Schools in the WAEC and NECO organized examinations since 2013. The World Tecnovation Gold award won by the Regina Pacis Model Secondary

School Onitsha at San Francisco USA in 2018 is another huge manifestation of the positive impact of the emerging digital learning in Anambra State.

The computer technology is already a part of the culture of these young persons who now use and operate smart phones, tablets, computers, video games, and are already attuned to digital multimedia display for information and entertainment purposes in their homes. Through their parents' devices at home, they do explore the pictures, diagrams and processes in their take-home assignments and projects especially in subjects like Physics, Chemistry, Biology, Agriculture, Visual Arts, History, Geography among other subjects. Young persons now live in a digital world, and they obviously prefer it to our analog era. They cherish & savour the multi-instructional hearing, viewing and participatory dimensions of digital technology.

Today's children and youth operate and interact in a world of technological evolutions. They watch television, videos, films, VCD, DVD, listen to radio, MP3, MP4, play video games, computer games; with the computer, tablets, phones, and even solve their calculations and execute designs using some of these and other related gadgets. The average Nigerian child who does not have the opportunity to assess these gadgets somehow gets to see children from other parts of the world access and manipulate these things on TV and in films. Consequently if they are not introduced to these things in their schools, they tend to feel left out of the global trend and to see our kind of education as backward, obsolete and worthless. They will tend to lose interest in what is taught, disregard the teacher who they may consider inept, uninformed and incompetent because as Efeseke (2003) rightly observes; "the ICT field is the most rapidly evolving of all disciplines. The computer, the multimedia projector, the tablet, the internet are veritable tools of educational instruction which appeal to the senses of hearing, sight and imagination which promote effective teaching and learning by increasing interest and participation in an otherwise boring but necessary lesson." Based on the findings of his research, Moodiel (2002), collaborates that ICT fosters interactivity which makes for effective learning.

Though a good number of schools in Anambra State possess some of these aforementioned ICT tools and devices; it has been discovered that quite a number of them do not maximally utilize them; many do not even use them in teaching the applicable subjects. Some schools reserve them only for teaching some specific science subjects; not knowing that they are equally important in teaching Visual Arts and some other arts. This paper examines the extent of application of these devices in the teaching of Visual Arts in Anambra State Secondary Schools; using Onitsha Senior Secondary Schools as a case study.

Research Objectives
- To present the essence of ICT application in teaching/learning of Visual Arts.
- To assess the extent of ICT application in teaching/learning of Visual Arts in Senior Secondary Schools in Onitsha, Anambra State.
- To assess the degree of availability of ICT material resources in Onitsha secondary schools for teaching and learning of Visual Arts.
- To assess the availability of ICT-skilled Visual Arts teachers and their competence level in Onitsha Anambra State.

- To analyze the status quo in view of the expected benefits and the current constraints of ICT-aided teaching and learning in Anambra State.
- To make suggestions and recommendations on the way forward.

Research Questions:
1. Are ICT tools and devices of any importance in the teaching and learning of Visual Arts?
2. What is the extent of ICT involvement in teaching and learning of Visual Arts currently?
3. Are there enough ICT material resources for teaching and learning of Visual Arts?
4. Are there enough ITC-skilled Visual Arts teachers in Onitsha?
5. What are the expected benefits of ICT involvement in teaching and learning of Visual Arts in secondary schools?
6. What are the constraints to effective utilization of ICT in teaching and learning of Visual Arts in Onitsha?

Literature Review
Education

Education takes place when effective learning meets with adequate teaching. When teaching is assimilated and can be applied or transferred, learning can be said to have taken place. Ajaegbo (2000) describes effective education as a discipline that seeks to inculcate in an individual the right attitude, values, habits, norms, abilities, skills and competencies all of which help to make an individual a good, functional and useful citizen and prepares him to play an effective role in the growth and development of the society.

The Visual Arts

The Visual Arts are those arts that are primarily experienced and appreciated with the organ of vision. It is quite difficult for a blind man to appreciate a work of visual art. They are also known as the Fine and Applied Arts. Uzoagba (2000) defines Visual Arts as those things or those creations we look at. At the Nursery and Primary stages of Nigerian educational system, they are taught as Cultural and Creative Arts encompassing Visuals Arts, Music and Drama. This continues at the junior Secondary level while they are taught as Visual Arts or Fine and Applied Arts at the Senior Secondary level comprising Painting, Sculpture, Drawing, Textile, Graphics, Ceramics and Craft. At the tertiary level in our Polytechnics, Colleges of Education and Universities they are still taught as Visual Arts or Fine and Applied Arts with the undergraduate students specializing in one of the core courses such as; Painting, Sculpture, Graphics (or Visual Communication Design) Textile, Ceramics, Fashion, Design, Art History, Art Education and Photography in the second half of their undergraduate NCE, HND, BA programme, (Anyaduba, 2020). The Visual Arts right from the Kindergarten level through the primary, junior secondary, senior secondary up to the tertiary level are by nature very manipulative, physical, demonstrative, participatory, time and energy consuming, very dynamic and always evolving in materials, techniques and content.

The Visual Arts are divided into Fine and Applied Arts; The Fine Arts are Painting, Drawing, sculpture and Installations. These arts are created primarily for their

aesthetic values and socio-cultural relevance. The Applied Arts on the other hand are Textile Design, Ceramics, Graphics (Visual Communication Design), Photography and Fashion Design which are created to serve both utilitarian and aesthetic functions. Their production processes very much involve the application of industrial technological production techniques.

Having discussed the integral components of Visual Arts as they are taught and learned at the various educational levels; it becomes evident that they cannot be properly and effectively taught in this 21st century without the application of the globally all-important ICT. The Visual Arts in both learning and practice cannot grow in isolation from the modern trends of ICT facilitations and instrumentations for improved efficiency and productivity. Nigeria as a nation, has already keyed into this global realization through her current educational and technological policies; all aimed at improved standards and productivity in order to meet the (MDGS). Alabi (2004) affirms that Information and Technology policy in Nigeria is aimed at complete transformation of all sectors of the economy – health, agriculture, security, commerce, arts, culture, tourism and education. The government has subsequently started noticing tremendous growth and developments in these sectors as a result of ICT application; hence the need to boost such growth through the education sectors; (Visual Arts inclusive).

The Art Class

The average art class is usually interactive and generally laced with practical demonstrations. Hence the need for schools to have designated Art Workshops, Art Studios, Art Rooms specially equipped with certain amenities, devices, equipment and tools to facilitate effective teaching & learning. Nwanna (2017) maintains that since creativity, innovation and resourcefulness are the key drivers in the art class; novel and unconventional materials and tools are equally generally accepted and acclaimed in every art class.

The Art Teacher

The art teacher is both an artist and a teacher and he is expected to help develop the artistic potentials in his/her students through teaching, coaching, instructions, practical demonstrations and facilitating experiments. Though the art teacher can teach the elementary and basic aspects of every branch of Visual Arts; he/she is actually a specialist in just one branch. All Nigerian art schools; Colleges of Education, Polytechnics or Universities make their students to specialize in one area of either the Applied or the Fine Arts as from their third year of training. Hence art teachers actually had only two years of training in general Visual Arts   before choosing their area of specialization. This level of exposure is assumed to be enough to prepare them to teach general Visual Arts at the Secondary School level. Art teachers rely on pictures, slides or other illustrations as instructional materials but they have restricted budgets and lack sufficient visual resources. Yet, they need these resources to be able to effectively communicate ideas to the learners.

The Art Student

Pablo Picasso said that every child is an artist, that the problem is how the child can remain so when he is grown up. Children love art right from their cradle. They are fascinated by colours; they are thrilled by drawings, paintings, sculptures and creative

illustrations of every type, particularly when they are created in their presence. In this same vein, students love art classes in their earlier stages (primary and junior secondary levels) when they are still exploring their potentials. As they move into higher classes, some begin to discover that they are not as dexterous as some others in representational art and they conclude (often falsely) that they are not creative, and not artistically talented. Some others who would have continued are equally discouraged by lack of adequate guidance, lack of materials for practical training, high cost of executing assignments or inadequate coaching by their instructors. There are other factors though; at the end of the day, only very few students will make it to the art class at the Senior Secondary level.

What is ICT?

ICT stands for Information and Communication Technology and can be described as a "diverse set of technological tools and resources used to communicate, to create, disseminate, store, and manage information" Blurton, (2002). These technologies include: computers, the internet broadcasting technologies (radio and television) and telephony through teleconferencing computers, handsets, tablets, internets, tele-collaboration. ICT is a term that encompasses any medium to record information and also the technology for broadcasting information and any technology for communicating through voice and sound images. It includes all devices, networking components, applications, software and systems that enable people, organizations and institutions to interact in the digital world by accessing, storing, transmitting and manipulating information. Hadded and Drexler (2002) identifies five levels of technology used in education as: presentation, demonstration, drill and practice, interaction and collaboration.

ICT Tools and Devices for Teaching and Learning of Visual Arts:

ICT tools and devices include products that store, process, transmit, convert, duplicate, or receive electronic information; such products or devices are: divided into hardware, software, and networking communication. There are pop-lets, pen drive, IPods, I pads, web boards, scanners, DVDs, VCDs, flash drives, video games soft applications and operating systems; web-based information and applications like distance learning; telephones, videos, and multimedia products, photocopiers, fax machines, calculators, computer hard ware, electronic textbooks, instructional software, e-mail, chat and interactive boards. Others are social media channels like face book, whatsapp, email, Google suit, etc. to connect with students, parents, and outside world. There are desktops, laptops, handsets, tablets, to access and display data/information; USB or WIFI access for document sharing and connectivity. There are presentation clickers for classroom presentation, visualizer or document camera, recording hardware/software for podcasting. There are also micro phones, headphones, speakers, digital camera for recording and showcasing work in films and photographs. Then for special students, there are: text magnifier, keyboards for cerebral palsy, Braille, head wands, typing aids, large prints and audio books. Extolling the importance of these devices, Onyisi et al (2006) maintains they are all vital in education where information and communication are essential avenues through which people acquire knowledge.

The Benefits of ICT

Information and Communication Technology (ICT) is making a tremendous impact in every sector of the global economic landscape, most especially in the educational sector. It is obvious that for Nigeria to come out of the woods information and communication technology (ICT) should be applied in education. Teaching and learning with ICT provides educational tools such as input source, output source and other applications that would enhance learning. As affirmed by Huffaker (2003); there are some immense benefits of ICT application in teaching and learning generally. This internet and computer-aided learning involves the manipulation of data using productivity tools to present learning, through demonstration, tutorials, visualization and graphic representations of otherwise abstract concepts. ICT changes the traditional role of the teacher as custodian of knowledge, as well as the drill and practice method, memorization and regurgitation methods of teaching. The ICT-empowered teacher plays the active role of a collaborator and guide in the students' quest for knowledge as observed in Newhouse (2002).The learning process now becomes digital and imbues students with skills which will become relevant in the 21st century job market.

Discussing the immeasurable importance and relevance of ICT supported teaching and learning, Marshal and Taylor (2005) affirms that ICT-supported education promotes acquisition of knowledge. It is skill-oriented and strengthens the relevance of education to the increasingly digital job market. It provides the enabling platform for students to work on real-life objects, solve life problems and discover things for themselves. It allows the learners to explore and discover things for themselves. It promotes active learner participation and makes learning less abstract. ICT makes learning and teaching outgrow the physical constraints of the classroom. It extends learning to a larger number of students. It affords students unlimited time for learning any time anywhere outside the school time table Uhomoibhi (2006). They can even learn slowly and repeatedly at their own pace. It saves both time and costs for schools and students alike. It greatly enhances learning experiences while providing a new set of skills by increasing learners' technical ability Schmidt (2009). It encourages interschool and even international competitions and innovative capabilities.

Methodology

This study employs a qualitative and descriptive survey research with data collected through primary sources such as participant observation, interview methods and secondary sources such as written materials. The area of the study is Onitsha North Local Government area, while the target population is 50 secondary school teachers and students. Data were collected through simple random sampling techniques from 5 out of the 16 public secondary schools in Onitsha North. From each school, 20 students and 4 teachers were randomly selected for this study.
The selected schools are:

St. Charles College Onitsha
Dennis Memorial Grammar School Onitsha
Inland Girls' Secondary School Onitsha
Government Technical College Onitsha
Ado Girls' Secondary School Onitsha

The instruments used for data collection were 120 copies of structured questionnaires personally administered to the respondents by the researcher using on-the-spot distribution and collection method. The researcher adopted the statistical mean score test-retest method to analyze data collected and validate the reliability of the instrument.

Findings

The findings of this study reveal that the senior secondary students of Visual Arts in Onitsha North particularly and Anambra State in general are really missing about 80% of the benefits of ICT application in teaching and learning. This is because there is practically only about 15% of such application in Anambra schools; this can be attributed to the following constraints:

The Constraints of ICT Application in Teaching and Learning of Visual Arts

- 80% of the schools in the state do not even teach Visual Arts at the senior secondary level because they don't have the teachers.
- The Anambra State Government has not recruited Visual Arts teachers for some years now.
- There are not enough ICT tools, materials and devices in our secondary schools to enable adequate and effective application in Visual Arts lessons.
- Some of the available devices are not functional due to damage or unavailability of accompanying consumables.
- Most schools do not have the funds to effect repairs and purchases. Some students and teachers have access to ICT tools and devices only in the school and cannot afford them at home. Inconsistent network /internet signals at some locations can be frustrating.
- Lack of adequate time allocation for lessons since students take turns to use the few available tools and devices.
- 85% of the few available Visual Arts teachers in the schools do not possess adequate ICT skills and knowledge to make much impact.
- The epileptic electricity power supply in the state is another major hindrance.
- There are not enough government-organised ICT workshops and training programmes for these teachers.
- There are no incentives in place to encourage and replenish the teachers who would choose to undergo such training at their own expense.
- There is also the possibility of students stumbling on dangerous and misleading online content if there are no effective internet filters.

Recommendations

The Anambra State Government needs to recruit more Visual Arts teachers in the   school system to fill the existing gap in the subject area. There is need to procure more ICT devices since the last procurement was in 2013. An annual addition to the ICT stockpile of the schools would make much difference in the volume of available devices and their consumables. Making some reasonable fund available to school authorities would equally enable them facilitate repairs and updating of these devices. ICT training

should form an integral part of teacher training programmes in the Colleges and Universities. There should be frequent ICT   workshops and retraining programmes for teachers to update their knowledge of new soft-wares and hard-wares since the ICT is always evolving in material, content and technique. The government should improve on the electricity power supply to schools and communities to enable students and teachers utilize ICT devices at school and at home. Considering the immense benefits of ICT application in teaching and learning, it has become pertinent for government to begin to extend some incentives to ICT-skilled teachers.

Conclusion

   The application of ICT in teaching and learning of Visual Arts in Anambra State has been immensely appraised in this survey with a view to maximizing the expected benefits of such application. In this research the benefits of ICT application have been adequately highlighted while the attendant challenges and impediments have been x-rayed with a view to overcoming their accompanying hindrances. It is expected that the recommendations and suggestions made in this study will significantly go a long way in uplifting the standard of teaching and learning of Visual Arts in Anambra State and by implication; that it will positively influence advancements in other areas of study in the broader Nigerian educational setting.

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