THE PROSPECT OF RESEARCH AND INNOVATION IN COMPUTER MUSIC EDUCATION IN NIGERIAN SCHOOLS

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Abstract
        Research and innovation in the educational system of Nigeria is a welcome development if Nigeria must meet with the global challenges. It has become very necessary for this nation to make a total turnaround for qualitative education to get the desired result for socio- economic development, global competitiveness leading to individual's ability to survive. The present economic meltdown has necessitated for proper research and innovations in education. This paper will take a critical look at areas of innovations where computer music education could be used in solving some educational challenges. On this premise, the paper will focus on the need of introducing areas in music and computer education where students can excel and develop their potentials for lifelong educational benefits. Computer as a tool for learning can improve on innovative learning in music education, as well as in maximum use of researches for global challenges which will help to enhance students' learning abilities. This paper calls for review of the curriculum in music education and proper funding to accommodate computer application to music for qualitative teaching/learning experiences.
Key word: Research, Computer Music Education, Global competiveness.

Given the dismal picture of Nigeria's human development balance sheet, it is not surprising that, no matter what human development indicator is used, the country is at the bottom of the ladder. Nigeria is paying very dearly for the pursuit of inappropriate development and not investing in education. We have heard repeatedly about the need to reform the way we educate. It is a global challenge the needs our urgent attention. The current educational system in Nigeria today has a 19th century outlook, and therefore the need for innovation is at least something that could rise. The dawn of a new millennium and the 21st century provide a unique opportunity to undertake an appraisal of where Nigerian education

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sector is and how well paced are we in becoming an effective player in the globalization process.

Education constitutes the very foundation of meaningful soci-economic, political growth and development of any nation. No wonder the Federal Government of Nigeria adopted education as an instrument Par-excellence for affecting national development Ajeyalani, (2009). It was as a result of the premium placed on education that made the Federal government in 1968 to organise the first ever national curriculum conference in Education, Ikpeze (2010). The outcome and resolution of that curriculum conference gave rise to national policy on Education which was first published in 1977 and has been revised in 1980, 1996, and 2004 respectively. Since the implementation of the national policy on education in 1981, there have been a lot of innovations and researches in the education system but unfortunately, education in Nigeria despite these innovations has not sufficiently lifted the nation from the morass of the technological under-development, political insatiability and social decadence. Nwagu (2010) argued that the most of these researches and innovations are poorly implemented due to changing policies in education sector. The vision and prospect of the present government is to make positive changes that will make the graduates of our tertiary institutions, products of secondary schools to be gainfully employed. Inadvertently, the product of this policy will be self reliant thereby meeting the global competeveness

and enhancing the Nigerian reality of becoming one of the top 2020 economies in the world. One of these educational economic revolutions is in rapid development using information and communication technology (ICT) in de-emphasizing on certification and promoting entrepreneurial education, invention and self worth.

It is obvious that any country that wants to be reckoned with in the global arena must be advanced in education. This initiative conforms with Owoye (2010) statement that the objective of education in any country represents the country's intentions relating to all aspects of the socio-economic and political aspiration which must be addressed for development to take place. In a nutshell, there should be a positive approach to researches and innovations to music and computer education as determinant factors in addressing all educational challenges. This is in promoting sustainable development with a well structured educational system put in place. This will be applied to re-orient the students towards economic growth, service delivery and enhancing teaching/learning abilities. The new methods and innovations introduced in schools will transform our policies in education vis-a-vis monitoring, implementation and evaluation.

Meaning of education

The word education reveals to us; a body of experiences acquired, knowledge internalized and abilities gained through teaching and learning. It also involves structured efforts, time and

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participation towards the education of an individual. According to Ocho (2005) education is defined as a permanent change in behaviour as a result of learning; it consists of all efforts made by a society to accomplish set objectives which are considered to be desirable in terms of the individual as well as the societal needs. In line with this statement, education is seen as the act or experience which transforms the minds, character or ability for acquiring knowledge, talent, potentials and values. Education means different things to different people. In general terms, it is a process of transmitting desirable attitude, societal norms and values, behaviour and respect to constituted authorities. It is said that education provides avenue for teaching and learning activities in schools for development of potentials and skills thereby preparing individuals for the work of life within a given society. Popoola, Bello & Atanda (2009) said that quality education is a major goal for international development. This means that education gives global outreach to learners to think critically, solve problems and make informed decisions for themselves and the communities where they belong. Education also has the power to lift people out of poverty, promote gender equality in the society, improve knowledge about health and nutrition, and above all promote sustainable development for global advancement.

If education helps to influence a change in physical and mental behaviour, then it must be positive so as to enable one to perceive accurately, think clearly and act effectively to achieve self-selected goals and aspirations. The question is no longer if researches and innovations could help to give education its positive role in promoting development, but should be prioritized to meet the demand for qualitative and lifelong education. The past educational policies in Nigeria have given us false hopes and values, lack of foresight and right attitude to forge ahead for economic and political emancipation. It becomes imperative for government to restructure educational programs to meet with current realities that will reflect on the trend in our culture and society. The research can be tailored towards these areas of our traditional lives and results must provide structures for students to demonstrate accessible standards of performance. This also means that the content of what is taught and learned is meaningful in terms of what students are able to acquire or gained which will be used in future. The role of educational system here will include innovations to develop skills, abilities and capabilities of students for them to function better in the learning process. This equally shows that innovations will be acceptable thereby enhancing implementation of new ideas and methods leading to global integration. For this to take place, music and computer education must be given a place at all levels of education especially from primary to secondary schools.

Innovative Learning in Music Education

Music education is a field of study associated with the teaching and learning

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of music. It touches on all learning domains i.e. the psychomotor domain (the development of skills), the cognitive domain (the acquisition of knowledge), and in particular and significantly, the affective domain (the learners willingness to receive, internalize and share what is learned), including music appreciation and sensitivity. Music education is an important part of the implementation of quality education, which is the focus of Arts education. Traditional indoctrination of teaching music education is not suitable for the reform of higher education teaching requirements today; but however there is the need now to explore new innovations and methods for full implementation of quality education for global challenges. Nzewi (1999) explained that the philosophy and content of our music education must be derived from resources and realistic experiences. He tried to remind us of the need to continually improve on the content of what is taught to the students and that research studies will help in these areas. The use of computer to impact knowledge in music training is inevitable to achieve authentic and very laudable goals in education programs.

Many have come to realize that experiences are too important to be ignored especially in education development. As a result of this, the current trends on research and innovations should take cognizance effort in ensuring that what is taught is very relevant to the students at the end of every learning experience. Ibidiun(2010) said computer will help to widen students' development

in the art of composition and scoring of music. Music education must fall in line with the expected goals of qualitative educational policy which will see students of music achieving in their potentials after leaving the school. It will be appropriate for educational innovations to identify the need for computer music education in teaching and learning because it calls for human development. This will improve with time as the experiences acquired in the study of this subject matter will help to adapt, adjust and evaluate the growth of academic excellence in Nigeria. We must appreciate the challenges in music computer education in relation to the need for standard educational values while the appreciation of computer deals with scientific knowledge, design and application; music deals with the general well-being of man. Both are needed for technological development in Nigeria educational system.

Because education at all levels constitutes a vital tool for addressing virtually all global problems, music training will bring changes in knowledge, value and skills acquisition for sustainable development. It is also a learning experience that will enable beneficiaries to exploit opportunities and carry out service delivery within the immediate communities leading to global changes. Agi (2012) supports this as a means of developing a systemic initiative to learn in school system for a productive live. There is a periodic method to be exposed to students of music because of its encompassing role in education with the sole aim of improving the quality of what

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is taught with practical experiences for future use. Uzoma (2014) said that computer education in music is needed to reduce unemployment and increase economic growth for global competiveness where product of music education can be gainfully employed. This pre-suppose that there should be emphasis on intensive and practical learning for developing one's potentials and experiences in order to excel in other areas.

Music technology is one of the branches of music education that needs to be researched upon; innovations and results given attention in order to attract the interest of students. The role of ICT has helped in creating phenomenal changes in education, economic and technological manpower. The ICT according to Agetus & Nnamdi (2011) is generated out of the growing process and the need for solving global problems. This is so because of the enormous benefit to be derived from it. It is an area which enables students to develop their knowledge in the construction, repair and maintenance of music instruments. Since computer is generated from solving problems associated with preservation of musical instruments with foreign origin, especially piano, electric gadgets and software, it is also used as a base for information retrieval. Piano and other instruments being manipulated through electrical means require careful handling and when they develop faults, their sound quality begins to depreciate. This is an area where students can tap knowledge that will make them employers of labour.

Research studies will be appropriate here to help students acquire knowledge on how to repair these instruments when they go bad or are damaged. Music education is beginning to discover the economic and educational advantage in the use of this. Students can learn how to construct and repair these instruments and earn money from their hard work. The use of computer in music education will inculcate in learners the spirit of enquiry and creativity.

Concept of Computer System

One of the prominent benefits of technology in the 21st century is the computer system. Computer is an essential technological product that has helped man in his socio-economic development today. According to Anigbogu (2001) computer is an electronic device capable of accepting data and instructions, processing the data based on the instructions to generate result or outputs in such a manner that is yet to be equalled by any machine to mankind. Computer operations are input, storage, processing and output. Two main components of the computer system are the hardware component and software components. The computer system has interesting features that encourages its use in human society. For instance, computer gives an error-free or accurate result and also has a high storage capacity. Another feature is that the operational speed of computer is reliable in its performance for it can handle complex tasks and perform several functions for a long time with consistent

results and yet not reliable to fatigue like the human being and other machine.

The computer system is a technological product that is utilized in the 21st century in various professions. Some of the areas of application of the computer system are in medicine, engineering and technology, government, industry, education, communication, business etc. The computer is a technological innovation under the control of stored program that performs some of the intellectual role of man even beyond human capacity. It is a power driven machine, equipment and recording device for high speed performance. Reith (1993) defines computer as an electronic device which stores information on disc or magnetic tape, analyse it and produces information as required from the data on the tape. Sharing the same view point, Kingsley (1995) explained that computer is a device that accepts data in one form and processes it to produce data in another form. While Adekemi (2001) supported that computer is a combination of related devices capable of solving problems by accepting data, performs described operations on the data and supply the result of these operations.

Computer could be said to be a man made machine made up of electronic components that operate information on a very high speed to produce results that are meaningful to the user. In fact, computer is versatile in its use for it is applied in almost every aspect of human endeavour; with the aid of software or program, the computer can be made to perform any desired task. The application of computer to education and virtually in many sphere of life has brought us to a period in this age of our development; experiences which must be pursued in other that educational dream of every Nigerian will be achieved. The ICT is a vital resource material needed to access, research and evaluate all the components for global educational challenges.

Computer Education as a Tool for Learning

In recent times the world has witnessed a rapid increase in technological innovations. At present the computer has nearly all aspects of human organizational roles in education. Computer education encompasses almost all facts of human endeavours. Today, computer technology is one of the most far reaching and fast growing development in education. Computer education is aimed at increasing knowledge and understanding of ways in which digital technology can enhance education through the publication of high quality research which can extend to both in practical and theory class.

Computer education has become one of the vital tools necessary for promoting education worldwide. Information is sourced, disseminated, stored through the use of computers and internet facilities. It has become necessary to incorporate computer education into Nigeria system of education. The use of computer (information and communication technology) has become the most popularized subject of facilitating teaching and learning experiences in 21st century. Computer usage has turned out to

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be the fastest means of passing information to every educational sector and throughout the business world. The focus and emphasis on the use of information and communication technology (ICT) are not only limited to computer application alone but relatively in other subject areas. In general, Ogunsola & Aboyade (2005) observed that Nigeria had a late start in computer usage but its growth in the country 2 decades ago has increased remarkably. The private sectors are also not left out in this growth and awareness. The system has quickened the pace of daily activities, affected the structure of organization positively and influenced the nature of our reasoning. Ninsin (2000) opined that ICT is concerned with the storage, retrieval, dissemination and evaluation of information by electronic means. This means that in today's Nigeria economy, the use of information technology is very critical in nation building and development especially in education sector. As a result of this, there is the need for Nigeria to diversify her economic base in order to confront the challenges of contemporary issues in the globalization process if we must remain relevant in our quest to develop optimally.

The need to fundamentally promote the nation's educational sector has become imperative; our attention must be focused on information technology. We must research and build sustainable development on sound economic policies using the advantage of computer. Through ICT, Nigerians should have ample access to qualitative education, functional health service, portable water supply, employment opportunities and social security for the citizens of this country. Through this effort we must begin to realize the advantage of information technology to education. A research on infrastructural development, wealth creation and innovations are keys which must be used to promote educational growth for global economy. In recognition of this fact, the time has come when the government of Nigeria should encourage her citizenry to actively participate in ICT development.

Importance of Computer in Music Education

The essence of computer (ICT) in music education cannot be overlooked. The integration of computer into music curriculum will make students and teachers to have equal access to richer learning materials. It will further help to control their learning environment, have improved literacy level, language and communication skills. It will be necessary therefore to continue to emphasize on the importance of computer application to staff development in our educational system in order to help teachers acquire knowledge and skills. This will invariably improve on instructional effectiveness and increase productivity in music education through the use of computer since it has the potentials of making music students in Nigeria to share their knowledge with their peers in other countries. It will also make them gain access to move outside their country (Nigeria) and collaborate with other students anywhere in the world

on their projects. Regha (2007) noted that the use of computer has positively influenced the quality of teaching and learning through dynamic, interactive and engaging contents and research in traditional and distant educational institutions around the world. He further pointed out that computer (ICT) has the potential to accelerate, enrich and deepen skills, motivate and encourage students in learning, help to relate school experiences to work practices, help create economic viability for tomorrow's works, contribute to radical changes in schools, strengthen teaching and provide for connectivity between countries of the world.

The computer music education has helped immensely in developing the teaching and learning of music with the rapid development of technology. The technology is needed to improve on teaching objectives and methods in order to enhance major innovations. This explains why we must key into developmental technology like practical use of knowledge that will not emphasize on certificates alone but practical experiences where the products of every school system can work independently.

Conclusions

Our educational system should aim at the creation of new society of professionals who will adopt practical reasoning through research and innovation. Our educational knowledge should be able to lead us to global standard that can stand the test of time. It can be predicted that the future of computer music education will continue to

explore new grounds in innovations and methods for effective teaching/learning for better educational outcome. There is no denying in the fact that in this generation of globalisation, education has gone beyond one of the instruments to achieve socio-economic objectives. It is the vehicle to attain transformation in researches and innovations depending on how strong, dynamic and sustaining the education sector is in Nigeria presently. Education should be the foundation for national development and advancement; and subsequently a process for transmitting knowledge, cultural values and norms of the society into the youths in order for them to be responsible adults within their environment. The position of education in youth development is captured in national policy on education which clearly states that; the youths will be exposed to skills acquisition and the development of mental, physical and social abilities and competence as equipment for individual growth (2004 NERDC). This means a lot is expected in providing qualitative educational system that will make for positive change in our youths.

Music to us is an art which permeates the structure of every human development. Music is used easily in alliance with words as in songs; and also with physical movement as in dance. It has been credited with the capacity to reflect and influence human emotions. The implication of marrying music and computer is in the power to affect human behaviour for better educational standard. Research has proven to us that computer is

capable of solving an array of problems in music through technological experiences. We have noticed with facts that Computer application exists to aid every level of education from teaching simple addition to sentence construction. It is also used extensively in scientific discoveries; solve problems in music education, investigating into complicated music composition or the construction of gadgets that are too costly or impracticable to build. This means that there are areas where music and computer application are needed to facilitate knowledge. In order words, the use of computer for music education is to be encouraged.

Recommendation

It will be appropriate for research in educational reforms to consider the need for computer education and music to be able to identify the problems associated with teaching and learning process in our schools. This is because music is usually seen as a difficult subject; innovations and new methods should be used to make learning experiences interesting. While computer application deals with scientific knowledge, music on its own deals with the general wellbeing of man. Both are needed for technological transfer of knowledge in Nigeria for us to meet the global challenge in education. The following are also recommended:

1. Despite all efforts made in using computer and music education to improve on teaching and learning of music in schools, the subject has not been given adequate attention as a full-fledged subject. It is currently sharing a place with other subjects like fine arts and drama as culture and creative arts. It is also an optional subject in junior secondary schools in Nigeria. Researchers have shown that music education is a course that generates employment and Nigerian youths are reaping the benefits of the music industry to make a living. The global challenge on education has necessitated the encouragement of subjects like music and computer education in school curriculum to enhance wealth generation. Attention of government should be drawn to music education for nation building and sustainable development.

2. The government should review the school curriculum to address the current desire of being part of the global competitiveness and of meeting the challenges of unemployment, insecurity, service delivery and youth restiveness. The curriculum should give all subjects equal prominence for students to study and choose a career where they can excel and become self reliant after leaving school. This can be done through educational interventions to promote academic excellence. Proper funding reforms in music and computer will bring about relevant and functional education for global productivity thereby creating jobs for the citizens of Nigeria.

3. Computer has really helped in the study of music education but a lot still needs to be done in the current plan for reform in education if Nigeria must meet up with global realities and objectives. We know that computer literacy is still very low in Nigerian schools considering the

teeming population. Many schools and students are not exposed to computer applications; the government has to do something on computer acquisition. The education sector must provide avenues for free ICT programme in schools for easy access to internet and other benefits of computer.

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