ETHOS AND PATHOS IN MUSIC TECHNOLOGY: A STUDY OF ITS CHALLENGES FOR MUSIC EDUCATION IN TERTIARY INSTITUTIONS IN DELTA AND EDO STATES

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Abstract

The focus of this paper is music technological advancement and its enhancement to music education. This study highlights the role of music technology as it enhances general music learning and as it assists to achieve the objectives of music education. The paper aims at investigating the militating factors against the effective use of technological devices in the studies of music education in tertiary institutions in Delta and Edo States and to proffer some possible solutions. This paper leans on a survey and empirical studies for its methodology. It is observed that majority of the tertiary institutions are lagging behind in technological advancement in relation to music education. The paper concluded that the role and impact of music technology are so crucial to the development and advancement of music education in Nigeria and recommends that music technology be established in tertiary institutions in Delta and Edo States for economic and social empowerment of the students upon graduation.

Keywords; Ethos, Pathos, Music technology, advancement, Challenges, Music education.

Introduction

Technology is a scientific knowledge used in practical ways in all spheres of life. It is the most modern designed machinery or equipment for use in almost all facets of life including education. It is observed that technology and music work hand in hand. Every time you hear music, even in live performances, some sort of technology is applied. Technology has made music available in different

media, for instance, music can be heard on radio, television, cable networks, DS, DVD< VCD, in cars, ships, laptops, computers, and even making of instruments. Collins 1995:24; Hammond, 1991:32 explain that technology has the ability to enhance education because it involves an active participation of students. This can readily reflect the individual needs and experiences of students. This approach has been shown in general education literature to positively affect students' learning. It is observed that today, technology has evolved from its general term into music technology for music education. According to Rudolph, (1996) "As students are being engaged with technology, they are bound to discover information more on their own. In addition, technology is an active medium for students and much of technology used in a music classroom can be purchased and utilized at home" (p. 21). Hence Adedeji, (2004) expresses that ''the computer technology and the internet can be maximally utilized to complement the traditional pedagogical and didactic approaches.''(p. 7)

However, in spite of the awareness and the emphasis of the relevance and the impact of music technology on music education, music technology is yet to have its full course in the music education of the tertiary institution in Nigeria. It is on this ground the paper aims at finding out the profound challenges militating against the effective use of music technology and to proffer some possible solutions for the tertiary institutions in Delta and Edo States.

Clarification of terms

Music technology

Music technology on its own is very broad. It implies the creation of music through musical instruments and equipment, which make use of various technologies. (Adedeji, 2004, p. 4). Music technology is a term that refers to all forms of technology involved with the musical art; particularly the use of electronic devices and computer software to facilitate playback, recording, composition, storage and performance.

Wisegeek (2003) also refers to music technology as:

> The application of technology, such as computers and software, to the musical arts whether it is the use of sequencer and editing software or electronic musical devices, musical technology and its definition expands as technology expands. Music technology is sometimes referred to as sound technology, but while these two fields are similar, they are also

vastly different. Music technology encompasses the composition, recording, and playback of music, while sound technology may only encompass the production of various sounds (www.wisegeek.com)

According to Hilliard, (www.mhtml:file://H|Hilliard accessed December 6, 2011), the concept of music technology is intimately connected to both musical and technological creativity. People are constantly striving to device new forms of expression through music and creating new devices to enable them do so. Clifton (2010) also states that:

Music technology describes the technological equipment used mainly to compose, perform, record, store and play back modern music". People can study music technology at the university level, giving them a firm grounding in everything from music craft to today's commercial music business. New music technology creates new techniques and opportunities to explore musically, this field of music helps to spur new music and new forms of musical creativity in today's artists (www.ehowaskdeb.com)

It can be inferred that music technology encompasses the technical and scientific aspects of music such as acoustic science, programming, computers, soft and hardware, business practices, music psychology/sociology and music industry.

Ethos

Ethos or the ethical appeal means to convince an audience of the author's credibility or character. An author would use ethos to show to his audience that he is a credible source and is worth listening to. Ethos is the Greek word for "character." The word "ethic" is derived from ethos. Ethos can be developed by choosing language that is appropriate for the audience and topic (this also means choosing the proper level of vocabulary), making yourself sound fair or unbiased, introducing your expertise, accomplishments or pedigree, and by using correct grammar and syntax. During public speaking events, typically a speaker will have at least some of his pedigree and accomplishments listed upon introduction by a master of ceremony. https://pathosethoslogos.com/

Merriam-Web defines ethos as custom or character in Greek. As originally used by Aristotle, it referred to a man's character or personality, especially in its balance between passion and caution. Today ethos is used to refer to the

practices or values that distinguish one person, organization, or society from others.

In agreement with the above definitions, ethos is being able to convey multiple modes of expression and theorizing what composing with modes outside the written word looks and sounds like. It is the ability to skilfully display or show proficiency in a particular field (music) to your audience. It implies having mastery, command, prowess or competence in the field of music technology causing your audience to believe in you thereby creating acceptability and credibility.

Pathos

Pathos or the emotional appeal means to persuade an audience by appealing to their emotions. Authors use pathos to invoke sympathy from an audience; to make the audience feel what the author wants them to feel. A common use of pathos would be to draw pity from an audience. Another use of pathos would be to inspire anger from an audience, perhaps in order to prompt action. Pathos is the Greek word for both "suffering" and "experience." The words empathy and pathetic are derived from pathos. Pathos can be developed by using meaningful language, emotional tone, emotion evoking examples, stories of emotional events, and implied meanings. https://pathosethoslogos.com/

Cambridge dictionary defines pathos as ''the power of a person, situation, piece of writing, or work of art to cause feelings of sadness, especially because people feel sympathy."

Similarly, dictionary.com cites that pathos is "the quality or power in an actual life experience or in literature, music, speech, or other forms of expression, of evoking a feeling of pity, or sympathetic and kindly sorrow or compassion."

In addition to the forerunning, pathos is a way of convincing an audience through one's works; creating an emotional response\actions to an impassioned plea. In other words, pathos or emotional appeal in Nigerian music technological devices for use in music education can be seen through some musicologists' works lamenting for crucial attention.

Comparison between present and technological way of learning

Research on teaching /learning by (Anderson, Blumenfeld, Pintrich, clark, Marx and Peterson, 1995; National commission on teaching and America's future 1996) has shown that learning is contextual and that school represents a process not

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simply a place (Thorburg, 2002). In Garcia's viewpoint, schools now should no longer represent model modes of instruction. Schools in a post-industrial world need to embrace the trend of the modern way of learning with technology and non-linear modes of thinking including multi-sensory stimulation and inquiry based learning. Garcia further hints that, in 1998, a study by International Society for Technology in Education (ISTE) highlights the ways in which new learning environments can be compared to traditional ones as thus:

Traditional (Present)	Technological Way
Teacher centred instruction	Student centred learning
Single sense stimulation	Multi-sensory stimulation
Single path progression	Multi-path progress
Single media	Multimedia
Isolated work	Collaborative work
Information delivery	Information exchange
Passive learning	Active/ exploratory/inquiry based learning
Factual, knowledge based	Critical thinking and informed decision making
Reactive response	Proactive planned action

Garcia (2004) further states that:

> Students should no longer be considered 'products' of a learning system that 'teaches' them one independent concept at a time in irrelevant ways since we know that information devoid of content is meaningless especially to students who often claim that their favourite stage in learning was kindergarten because learning was linked to play. In other words, the distinction between school and the real world was not yet apparent because learning was still a holistic process then. (n. p)

Ethos in Music Technology

For the sustainability of music education in tertiary institutions in Nigeria, it is pertinent to follow the trends as it is obtainable in music education globally. It is

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the believe of some musicologists that music technology has graciously helped in advancing lives as it has broadened its scope especially in music business, which involves the musical arts. They solicit that this type of technology which uses electronic devices and computer software in playback, recording, composition, editing performance, construction of musical instruments and others should be adapted, to support the traditional way of teaching/learning of music education in Nigeria. Grarcia, (2004) provides an argument for the role of music technology to enhance and assist in the learning of traditional music education objectives as follows:

1. The use of technology in music education has effected change and attitude of students to music learning.

2. Embracing technology and using it to meet music education objectives has empowered students by giving them more control and access to their own (music) education while exploring interest close to their hearts and by becoming musically literate in the process.

3. The use of music technology has the potential to strengthen the position of music in schools.

4. Technology opened the doors to more students. It allowed them to experience music making as easily as if they were playing in a sandbox.

5. Technological innovations in music have allowed for the same kind of opportunities for general music education for students. What a teacher uses at school to teach can be purchased and used by students at home and teachers. This notion levels the playing field for students and teachers and expands the possibilities, definition and role of music programmes – enriching them and students for better.

Adedeji (2004) opines that ''the poor academic standard of our students will be improved upon if they are mandated to learn from their colleagues from other parts of the World on the Internet'' (p. 7). If this is done, it would open door for more music students. Moreover, it would produce productive graduates creating generation of revenue through the acquired knowledge, skills and experiences, as well as invigorate the position of music in school and acceptance in the society at large.

Onuora-Oguno (2009) also believes that the gains of computer applications to music pedagogy are numerous; the computer machinery is flexible and precise and can yield a wide variety of musical applications. He figures out that:

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> In using a computer as a tool in composition, the composer programmes the computer to produce pitches, rhythms, tone colours and musical elements and to screen these elements through criteria also chosen by the composer. The output may be transcribed for performance by conventional instruments or fed into another device for conversion into sound. The composer's input, in the form of mathematical functions, is translated by the computer into synthesized musical sounds that are stored in digital form and can be played back at will. Computer can be programmed to produce music in traditional styles and instrumental colours, its principal attraction to composers has been its ability to expand the previously available range of musical elements such as tone colours and pitches and the new approaches to musical form it makes possible. (p. 9)

It is observed that the present generation students like to embrace all the things in ambit of these modern devices. Since lecturers and students are captivated by technological devices, it is imperative to use same technology to teach and learn in the classroom. Onyiuke (2009) asserts that with the advancement in technology and resultant computer literacy, many benefits are seen in the process of teaching and learning of music in the following ways:

1. Computers are playing an increasingly important role in education for both the teacher and the student. Their uses enable each student to develop at his or her own pace and make the whole learning process more flexible.

2. Computer aids to music education have been a major component of the Western pedagogical process.

3. In the area of teaching, there are pedagogical tools that are used by music educators who want to share ideas and information with large or small group of students.

4. The electronic white board is a computer implement. This could be utilized by music educators in teaching music theory. It is a presentation device, which interfaces with a computer through a digital projector where they can be seen, and users can control the software both from the computer and from the board.

5. Computer usage in and out of the classroom has gone a long way in enhancing the students' learning experiences. (p. 103)

Similarly, Nwamara (2006) finds the place and purpose of computer technology in musicology in the following aspects for:

1. The teaching and study of music; proper and careful incorporation of computer technology enhances the teachers' sense of professional development and personal growth as computer technology provides the music teacher with tools for the development of skills and knowledge. Such tools include various computer software and hardware that satisfy diverse needs in almost every aspect of musicology. It also benefits the students whom these skills and knowledge are being transferred to.

2. Composition/production and preservation of music; computer technology is very essential to the musicologist (composer) from the time he conceives his ideas till he finalizes/rounds off his creative jobs.

3. Performance of music; in performance, the sequencer which is a computer aided device makes it possible for few individuals to play roles that would have required a large number of performers or even an orchestra under normal circumstances. Apart from aiding performance, the computer also helps to improve and control the texture of sound and accuracy of pitches in performances. (p. 130)

There are boundless potentials in music technology for both the lecturers and students that need to be harnessed to aid lecturers' and students' creative mind.

The Pathos in Music Technology

According to Garcia (2004) ''we cannot be anywhere but the present and if we are pinning for a past that has no relation whatsoever to today's society or schools, the future of music education is in trouble'' (n. p). Adedeji, (2004) laments:

> Although Nigerian music scholars have contributed in no small measure to the development of music education at the global level through their compositions, research, writings and performances, the field is not progressing as such at home, as evidenced from a number of problems yet unsolved e.g. technological backwardness, the problem of notation, lack of systematized body of theory, lack of sufficient literatures, uncooperative attitudes among colleagues, low level of scholarship in terms of teaching and research and inequality which characterize the standard of regional academic activities (p. 2)

Similarly, Ekwueme in Mbanugo (2006), Bemoans the attitude of music teachers who are not amenable to change as thus "most Nigerian music teachers appear to be lazy, complacent and readily settled for the traditional method of teaching without practical application. This category of teachers resists change and self-development" (p. 43). Dorfman, (2008) also asserts that "teachers lack music technology competence as well as lack understanding of pedagogical techniques of using computer in classroom" (p. 26). Nwamara (2006), on the other hand expresses grief that "it is very discouraging and appalling that most Nigerian musicologists are yet to be computer literate in this age of "computer madness," yet we organize lectures, seminars, and conferences hoping to catch up with the tempi in various parts of the advanced world. There has not been enough significant evidence of adequate use and proper utilization of our computers for musical purposes" (p. 133). Nwamara (2006) further bewails that:

> It is quite disheartening that with the rapid increase in the provision of music technological devices in various facets of our social environments, clubs, churches, recording studios and so on, Nigerian musicologists are still lagging behind in terms or maximal utilization of these devices in fulfilling their obligations. In church performances and even churches, our musicologists have not been able to incorporate computer technology fully. (p. 134)

Challenges Militating against the Effective use of Music Technology Devices for teaching/learn of Music Education.

Probing into the reasons music technology is yet to fully have its course in music education in tertiary institutions in Delta and Edo States it is discovered that there are many factors militating against the effective use of music technology for teaching/learning of music education in schools. There are obvious issues with equipment storage or providing access to a room and space needed for keyboard, computers, speakers etc, it is for many schools under study the most daunting challenge. Equipping the classroom with music technology equipment and facilities would cost the schools, parents, government and others to put these in place. Hence Elliot 2004; Savage 2007; Dorfman 2008; stress the reason technology is not used in curriculums is as a result of external factors such as the following:

   i.   Insufficient financial support.
   ii. Inadequate hardware and software provision

   iii.   Lack of space in music room
   iv.   Requires new approach to classroom management
   v.   Technology for music education is insufficient
   vi.   Anxiety-strategy planning investments are needed to implement the use of technology in music learning.

Syal in Onyiuke (2009) also notes that ''Music educators find it difficult to successfully implement computers into their music curriculum. They often resort to hit and miss strategy to implement computers into their classroom'' (p. 104). The music educators perhaps find it difficult to successfully implement the use of music technology due to the fact that it is not included in the music education curriculum as Olapade & Omole (2018) highlight that the music teachers interviewed argued that ''courses like introduction to modern technology, which focuses mainly on music software were supposed to have been incorporated in the course of study in higher institutions. They state further that the courses might have prepared them for future challenges like that.'' (p. 235)

Another factor is the fact that the music educators are music technology illiterate. Majority of the schools offering music in Delta and Edo States have inadequate proficient, skillful or experts on this field (music technology) to teach music. Although we have few (20%) music educators who are exposed to music technology based on personal development. Onyiuke (2009) affirms that ''some music educators are not being computer literates in this global world of computer technology'' (p. 104). Elliot 2004; Savage 2007; Dorfman 2008, also agree that teachers lack music technology competence as well as understanding of the pedagogical techniques of using technology in classroom. Some students even have more information technology (IT) expertise than teachers The inadequate supply or non-availability of this medium in schools makes music teaching/learning ineffective. For instance, students cannot apply some of these applications such as music software, hardware and others because they are unavailable in schools and in a case where they have one it is not enough for an effective teaching and learning. Beyond all of these, how can music technology be successfully utilized if it is not integrated into the music education curriculum. It infers that the non-inclusion of music technology and the unavailability of equipment, facilities and instructional materials for music education is the lead factor.

Some Possible Solutions to the Challenges

Following the footsteps of other countries where music education has stabilized its programmes through campaigns, workshops, seminars and rigorous research. National Commission for Colleges of Education (NCCE), National Universities Commission (NUC) and music educators should emulate and organize programmes to improve upon music education by using music technology in finding the solutions to the challenges and implementation. For instance, in the United States of America, several programmes and workshops were organized by the United States Department of Education for technology initiative to improve education.

The good news is that the marketplace is gradually mitigating many of these challenges. Online production tools for teaching/learning of music education Nwamara (2006) asserts that ''Computers are now easily available and accessible for use in music technological practical classes, recordings, performances, compositions, music typesetting and on-line exchange of musical materials and ideas in Nigeria.(p. 126)

The financial commitment on the training of teachers on music technology, the supply of teachers' and students' music technology devices and facilities required for use in the classroom is the responsibility of the Federal, State, tertiary institutions, parents and others to provide. Where the government and tertiary institutions failed to provide, the Heads of Music Department should solicit for funding from the latter and cooperate bodies. If music education in Nigeria must meet up with the trends globally, immediate action is required, for the integration of music technology into school system. According to Onyiuke, (2009) ''In-service training and workshops on computer literacy should be organised for both music teachers and otherwise who are already in the employ of different arms of government in Nigeria. Computers and other electronic musical equipment should be provided in schools to enhance the process of teaching and learning.''(p. 106)

On the bases of the fact that music teachers lack knowledge of music technology and how to integrate it in music learning as stated earlier on, some renown musicologists such as (Russell et al, 2003; Savage, 2007; Dorfman, 2008; Dammers, 2009) suggest what music educators should do as thus:

a) Develop a clear understanding of what constitutes effective music teaching with informative computer technology.
b) Include technology pedagogy and integration practices at the pre-service level.

c) Develop skills and knowledge for music technology, for example, sequencing and notation software.
d) Use technology as a pedagogy aid (which students are engaged) rather than as a tool.
e) Curricular support to provide a new framework of how new classes are structured. (Russell et al, 2003; Savage, 2007; Dorfman, 2008; Dammers, 2009)

Onyiuke (2009) also states that ''computer literacy should be made compulsory to all teachers in the school system. It should serve as a pre-requisite for employment of teachers'' (p. 106). Music educators should take the challenge of undergoing personal development to acquire knowledge and skills on music technology. The truth is that, it is a necessity for National Commission for Colleges of Education (NCCE), National Universities Commission (NUC) and music educators to reflect and examine their particular structural environment and troubleshoot many of the less glamorous issues involving technology implementation for it is the most vital step in beginning to realise the levels of engagement and potentials that technology can provide music students and their educators.

Findings

In spite of sophistication and advancements in music technology globally, majority of the tertiary institutions are still technologically backward due to inadequate or and non-availability of equipment, facilities and non-inclusion of music technology into the music education curriculum. In addition, there are insufficient experts in this field and few numbers (20%) of music educators in Delta and Edo States use their personal devices and software to teach. These have caused the school system to be technologically impaired by way of being stuck solely to the conventional way of teaching/learning rather than following the modern way. Moreover, the lecturers are compelled to undergo a yearly computer programme that has no bearing on their specialty (music). It is discovered that few schools (Delta State University, University of Benin-City and College of Education, Ekiadolor) have some music technology devices and some others are in progress. Few tertiary institutions have gradually integrated music technology into their system and students are given a group or individual projects to produce and present music technology at seminars. There is no impact in the commitment of the government and the institutions in the

provision of equipment and facilities for music technology in majority of the tertiary institutions who are offering music. The tertiary institutions all have studios but majority are not functional; lacks of maintenance culture of the studios are particularly disappointing especially in the colleges of education. This could be due to the negligence of either the department of music, institution or government in the sustenance.

Conclusion and Recommendations

The role and impact of music technology are so crucial to the development and advancement of music education in Nigeria; hence the call for its establishment in tertiary institutions. Some renowned musicologists in Nigeria have highlighted the relevance in music education. The challenges notwithstanding, there are Online production tools for teaching/learning music education such as Audiotool, Wevideo, Soundation, Audiosauna (and countless others) as well as notation platforms such as Musescore, Scorecloud and Noteflight are providing online tools that negate the need to purchase extensive software licenses, hardware, and can still be accessed from home and school. It is observed that some music educators personally purchased some of these music technologies to teach. This is commendable and worthy of emulation. Realizing the fast changing world of technology in music, it is imperative that the music educators be train in this field and undergo regular in-service training or course and workshops on music technology to acquire the appropriate knowledge and skills to teach the students who will then pass it on to the next generation; a kind of trans-generational transfer of wealth of knowledge, skills and proficiency; that will enable the students fulfil their dreams and aspirations in addition provide economic empowerment. In the absence of the governments' assistance, it is of vital importance and urgency that music educators seek for funds from the corporate sectors who take kin interest to support education; to acquire the needful such as music technology equipment, facilities and others, as well as acquire the appropriate knowledge and skills for the furtherance and functionality of music technology education in Nigeria.

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