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MUSIC TEACHERS' PERCEPTION ON THE RELEVANCE OF DIGITAL TECHNOLOGY IN ACHIEVING VISION 2030 IN SECONDARY MUSIC EDUCATION IN NIGERIA

Abstract

This paper examines the relevance of secondary music education in Vision 2030. It explores the effectiveness of music technology and the roles the music teachers are likely to play in birthing Vision 2030 secondary music education in Nigeria. This study adopted the cross-sectional descriptive approach. Secondary school music teachers' responses show that digital music technology will be continually relevant in improving secondary music education. The outcome of the study reveals that the greatest breakthrough that has revolutionized digitalization in music education and production is the development of music software. The development of software has led to the introduction, modification, and improvement of sound-based composition approaches and aesthetics into the professional and educational practices. Given the speed and rate with which modern technologies become fashionable and outdated, will this music software still fit into Vision 2030? Will the music teachers' knowledge, perception, years of experience, and utilization of this music software continue to be relevant in aiding the teaching and learning of music by 2030? To prognosticate, finding new ways of incorporating the existing and newly developed technologies into the teaching and learning of music will open new methods and innovative ideas in the teaching and learning of music. In conclusion, the current and future music teachers and students are more likely to apply innovative methods on the use of music software so that the teaching and learning process will be as free-flowing as possible. Also, the teaching and learning methods they adopt need be facilitative. It will continue to be used by music teachers and students as a tool to help achieve the aim and objectives of Vision 2030 secondary music education in Nigeria.

Keywords: Digital, Technology, Music, secondary, education.

Introduction

Digital technology is tools, systems, and devices that generate, create, store, and process data. The data processing and logic capabilities of digital technologies are enabled through microprocesses that are programmed to perform various functions. Innovative use of digital technology to support learning in secondary education is being driven by a changing world and an emerging awareness of the importance of addressing the material needs of all learners. Digital technologies are devices such as personal computers and tablets, tools such as cameras, calculators, and digital toys, systems such as software and apps; augmented and virtual reality, and less tangible forms of technology such as the Internet.

Digital technology is related to music. Murray (2002) defined music technology to be “any situation in which electronic technology is used to control, manipulate or communicate musical information”. However, music technology in the classroom involves the use of electronic keyboards, sound modules, multi-track recorders, synthesizers, hardware sequencers, and a wide range of software applications that allow sequencing, notation, editing, and recording through a musical instrument digital interface (MIDI) and acoustic means.

Ferreira (2007) viewed music technology as that which involves the use of technologies for musical purposes, thus incorporating skills that cut across arts and technology. Technology-rich environments enable teachers to develop personalized, accessible, relevant, and high-quality learning opportunities that improve student engagement and achievement. To provide new ways for students to be creative, collaborate easily, engage in learning, and build social and global connections, it also enables students to choose ways of working that meet their needs. Offer greater flexibility and the ability to customize lessons provide access to a rich mix of multimedia curriculum support which facilitate an increasing range of context, content, programs and learning pathways. However, the trend of technological resources in music education in Africa has been the opposite with the incorporation of digital technology into the arts during the early 1990s, and with palpable advancements in technology, digital tools had begun to permeate all aspects of creative music production, including composing, performance, and recording.

During this pioneering period of digital history, computer music emerged as a genre, although the term was soon rendered imprecise by the widespread use of computers in nearly all types of music productions. Today, electroacoustic or sound-based music are more generally accepted terms used to describe genres of music in which sounds and their development alone create and maintain musical interest (Landy, 2007). Although sound-based music can be traced historically to the late 1940s, the development and incorporation of digital tools and software into music also introduced sound-based composition approaches and aesthetics into both professional and educational practices on a broader scale, thereby bringing new aspects of timbre and musical structures within reach of more composers, musicians, teachers and students (Pierroux and Rudi, 2020). In developed nations, digital composition tools have become widespread in interval-based music, which is most prominent in music education curricula in schools and colleges (Dobson & Littleton, 2016; Vratulis & Morton, 2011). However, with the dynamic advancements in technology, the use of digital tools and apps has become the international norm in music education (Wise, Greenwood & Davis 2011).

Recently, numerous applications for iPhone and Android phones have opened up new possibilities for extending music pedagogies into exciting teaching and learning settings. As noted by Gouzouasis and Bakan (2011), “these applications (apps) are easy to use and learning to use them is as simple as finding app demos on YouTube and playing with the graphical user interface (GUI)”. Marcellino (1996) argues that music technology has challenged the traditional concepts of the art, i.e., the demarcation of composer and performer and the very element of music making. The past few years have witnessed an explosion of new technologies for music instruction. Finding new ways of incorporating the existing and newly developed technology into the teaching of music may open up new methods for the learning and teaching of music (Marcellino 1996).

Statement of the Problem

The importance of technological resources in the advancement of musical education has gained worldwide recognition, especially since we are in a dispensation where digital technology trends in all facets of life. However, despite the global improvement in the digitalization of music education, existing literatures still show some grey areas, indicating a lack of effective incorporation of digital music technology into the secondary educational system of developing countries. Because of this prevailing situation, this study seeks to assess the relevance of digital technology in secondary school music education using the views of music teachers in private and government schools within Port Harcourt metropolis.

Aim and Objectives of the Study

The aim of the study is to assess music teachers in both private and government schools of Port Harcourt metropolis' knowledge on the use of digital technology in music teaching and learning;

The objectives are to:

- (i) assess teachers' perceptions on the relevance of digital technology in secondary school music education based on teachers' years of teaching experience
- (ii) assess teachers' perception on the relevance of digital technology in secondary schools' music education on the use of music software as aid to teaching
- (iii) assess teachers' perception on the relevance of digital technology in secondary schools' music education based on type of school.

Research Questions

1. What is the level of knowledge of music teachers in private and government schools of Port Harcourt metropolis on digital technology used in music teaching and learning?
2. What is teachers' perception regarding the relevance of digital technology in secondary schools' music education?
3. What is teachers' perception on the relevance of digital technology in secondary schools' music education based on their years of teaching experience?
4. What is teachers' perception on the use of music software as aid to the teaching in secondary schools' music education?

Hypothesis

H₀: There is no significant difference in perceived relevance based on school type

H_a: There is a significant difference in perceived relevance based on school type.

Research Methods

This study is a cross-sectional descriptive study conducted among private and government secondary school teachers in 2021. It employs a descriptive survey to find out the perceived importance of digital technology in secondary music education from both private and government secondary school teachers in Port Harcourt. The target population was music teachers in sixty (60) selected schools made up of thirty (30) private and thirty (30) government secondary schools in Port Harcourt metropolis.

Purposive sampling was used to select the sixty 60 secondary schools used in the study. The same was used to select one hundred and twenty (120) music teachers who participated in the

study. The purposive sampling was chosen for this study because the subjects selected satisfied certain qualities that are not randomly distributed but show most of the characteristics of interest to this study. A pilot survey showed that music teachers were not randomly distributed across all secondary schools in Port Harcourt. The summary of the sample size used for this study is as follows;

SCHOOL TYPE	POPULATION OF STUDY	SAMPLE SIZE (30%)
Private Schools	54	16.2
Government Schools	66	19.8
TOTAL	120	36

The convenience sampling technique was later adopted to receive responses from participants that made up the sample. The instrument for data collection was a structured questionnaire. The questionnaire had two sections, A and B. It was determined by giving out the instrument to experts in music education and statistics to ascertain the face and content validity of the instrument.

With the help of a statistician, the reliability of the instrument was ascertained by using the test-retest method. The test-retest method involves the administration of the same instrument to the same sample at two different points in time. If the scores at both time periods are highly correlated, they can be considered reliable. Data were analyzed using Microsoft Excel and were presented in tables, graphs, and charts.

Findings and Discussion

What is Digital Technology in Music?

Digital technology as it relates to music is defined by Murray (2002) to mean “any situation in which electronic technology is used to control, manipulate or communicate musical information”. It is otherwise seen to be an invention that allows humans to produce and enhance better sounds organized to express feelings. Byne and MacDonald (2002) defining music technology in the classroom views music technology to involve the use of electronic keyboards, sound modules, Multi-track recorders, synthesizers, hardware sequencers; such as those incorporated into the on-board sequencer in keyboards, and a wide range of software applications that allow sequencing, notation, editing and recording through musical instrument digital interface (MIDI) and acoustic means.

Sundstrup (2009) cited that many popular music produced in contemporary times are based on the deep-sampled instrument technology. A deep-sampled instrument is a digital musical instrument using sound recordings of acoustic instruments, whose sonic attributes can be manipulated through automation processes to generate the feeling of live musical performances.

However, with growing appreciation for the genre of music derived from deep-sampled instrument technology, synthesizer musicians and deep-sampled instrument artists have become highly celebrated by many music organizations including recording academy and continuous innovations are constantly directed towards expanding digital instrument capacity for invoking musical expressivity (Sundstrup, music produced using digital technology which is associated with the musical elements (e.g timbre, dynamics, articulations, vibrato, pitch bending) makes listeners become acquainted with the expressivity of digital instruments.

Such is often expertly performed and manipulated by elite producers and performers in many popular music genres. Most times, the students, or even their teachers, fully understand and recognize the complexity and artistry involved in creating high-quality recordings". Hence, there is a need to incorporate digital technology into music education at primary and secondary levels of education. According to Nwamara (2007), computer education in music can help students to appreciate good music based on interaction with the computer during class sessions, enhance speed in composition, documentation, recording, and publishing; and also sustain interest through concentration, cooperative learning and creative thinking as they work together using computer studies have shown that the use of digital technology as part of the resources used to support learning in a music classroom, is today accepted in several countries around the world such as the USA, UK, New Zealand and Hong Kong, and is considered a necessary and desirable part of the teaching and learning environment. The reason is not far from research-proven benefits in making teaching and learning more flexible and interesting.

Considering the importance of the skills necessary for producing digital sounds and how a deep understanding of digital production can encourage future careers of upcoming professionals in the music industry, it therefore become imperative to equip future music teachers and their students with skills that will enable them to create nuanced and expressive digital music as expertly and creatively as would be expected of them while performing on acoustic instruments (Ruiz, Cooper and Muhammad, 2020). A study by Wise, Greenwood, and Davis (2011), showed that "many secondary school music teachers were products of the Western classical tradition, which was based largely on the conservatoire and the associated skills and traditions that this brings with it. These teachers may have difficulty understanding the need to use current digital musical tools in the classroom or may accept or welcome its use but not be comfortable to operate in a genre that is foreign to them".

A similar situation was pointed out in Wise, Greenwood and Davis (2011) cited in Eniolawun and Abolagba (2012) on the Nigerian music education. Teachers' needs to be prepared to widen their understanding of what constitutes music education because of the changing practices that digitization brought to music in its various genres. Using technology in music education will encourage teachers to rethink instructional practice and transform the way they have done things for many years as regards effective engagement of students in music education (Bauer, Reese & McAllister, 2003, p.289- 301). To evaluate the views of Bauer, Reese, and McAllister (2003, p.289- 301) in the Nigerian education setting, there is a need to explore the relevance of digital technology in our secondary education system using the perceived views of music teachers. But how can we incorporate these digital technologies and musical software into Vision 2030?

- ❖ By goal setting; this will build our imaginations and help develop creativity and innovative ways on how to handle the existing and newly developed musical software into vision 2030.

In bringing our desired goals to fruition. We will need three elements CCR [compelling, commitment and resilience]

- ❖ By creating musical software that is secure, reliable, and efficient.

Challenges in Digital Technology

In Nigeria, Eniolawun and Abolagba reported that one of the greatest challenges faced in the advancement of music education is associated with a low level of growth in the area of music technology. Their studies revealed an absence of computer-related music courses in the curriculum of most Nigerian institutions, stating that this has a role in the obvious underdevelopment of “digital technology driven music education” in Nigeria when compared with that obtainable in developed nations of the World. Hence, for the occurrence of exponential growth in the general appreciation of music education in Nigeria, there has to be a corresponding level of awareness and availability of resources to enhance a high level of productivity in music production and performance especially given the realities of the digital age dispensation that the World is currently in (Eniolawun and Abolagba, 2012, p. 2).

Music Education and Vision 2030

Vision 2030 is a long-term development blueprint for the country, and for educational activities, it is motivated by the collective aspiration for a better society by the year 2030. The aim will be to create a globally competitive and prosperous country with a high quality of education for all its citizens in a clean and conducive environment. However, the crises also saw global partnerships strengthen or newly forged to rethink the way forward for education and realize the education 2030 goals.

The Future of Music Education in 2030 will help music education students find answers to two far-reaching questions:

- What knowledge, skills, attitudes, and values will today's music students need to thrive and shape their world?
- How can instructional systems develop these knowledge, skills, attitudes and values effectively?

The activities presented in this paper were developed from the growing need of students to be fluent in their knowledge of digital technology in music education and their competence in handling computer in learning Music and ICT initiatives in recording their musical work, compositions and presenting it publicly this lesson provide a way for secondary school students to begin their journey in discovering ways to using digital technology in creating music.

The Views of Scholars

However, the tune of technological resources in music education in Africa has been the opposite of current trends in the Western World. A report by Rodger (2014) showed that digital music education in South Africa is, on average, more developed and better-funded in private schools than in government counterparts. In Ghana, a survey conducted by Mawusi, Klutse and Kwadwo (2020, p. 1150) revealed that although ninety percent (90%) of the music tutors used in their studies had good academic qualification with over five years of teaching experience, incompetence in handling computer technology in teaching music among some music tutors and

incoherent ICT initiatives were noted hindrance to proper application of computer technology in the field of music education. Also in Kenya, Achola (2007) reported that only very few schools can access, acquire, and embrace this technology and therefore fall in the category of innovators.

With this strategic vision, the government should support music education in developing digitalization in music education. To do this, the government should look forward to empowering music education with sophisticated digital tools to help music tutors and students in teaching and learning music education. They should build new studios in campuses where all the equipment will be kept, enhance our focus on training the music teachers on computer ICT in music teaching and learning. The vision underscores our commitment to developing digitalization in music teaching and learning in Nigeria. The music tutors and teachers should also be part of the curriculum makers to ensure digital technology is incorporated into the curriculum and that everyone owns the subject. This will make it become a solid launching pad for sustained progress towards the 2030 Agenda.

The government should partner with music professors, music tutors, and teachers to a new level in digitalization in music education. Through this strategic vision for Nigeria, we will support the country in developing digitalization in music education. The greatest breakthrough that has revolutionized digitalization in music education and production is the development of music software (Wise, Greenwood, and Davis, 2011). However, the development of this software has led to the modification, improvement, and introduction of sound-based composition. Taking important steps together in developing robust legal and policy frameworks, building stronger institutions, and enhancing the operational skills and capabilities of thousands of law enforcement officers and judges. The strategy vision aims to help better employ those capabilities and frameworks towards peace, security, and prosperity. Going forward, we will count on our partners to work with us in the design of programmes, projects, and initiatives aiming to translate this vision into tangible results.

This study explored the perceived opinions of music teachers in private and government secondary schools in Port Harcourt. It adopted the cross-sectional descriptive approach to receive responses from thirty-six (36) secondary school music teachers sourced from sixteen (16) private and twenty (20) government secondary schools in Port Harcourt metropolis. Data was collected via a structured questionnaire and analyzed using Microsoft Excel. Findings showed that the majority of the respondents (58.4%) were young adults, as the mean age was twenty-nine years. Female music teachers (55.8%) were more than their male counterparts (44.2%). The respondents' average age and years of teaching experience was seven.

All the respondents indicated their awareness of the term “digital music technology” and its meaning as applied to secondary school music teaching and learning. However, on a scale of basic, good, intermediate, and very good, results showed that their knowledge about digital music technology was basic. Digital technology software known by the majority of the teachers were Sibelius (67%), fruity loops (39%), virtual DJ (39%), and MuseScore (36%). Least known software included Groovemaker (6%) and GarageBand (3%). A greater percentage of the respondents (82.5%) viewed digital technology as making learning music interesting. Only 13% of the respondents maintained that early exposure to digital music technology shapes a music career. Others 30% stressed that the current trends in global music education/performance are towards digitalization.

When perceived relevance was compared with years of teaching experience, the former was highest among respondents with 5-9 years of teaching experience and least among those with 15-19 years of teaching experience. In terms of utilization of music software, only 41.7% and 19.4% of the respondents used Sibelius and Musecore, respectively, in their jobs as music teachers. More than half of the respondents (55.5%) supported the use of digital software. There was no significant difference in the perceived relevance of digital music technology in secondary school music education based on school type with a p -value > 0.05 level of significance. This study recommended the modification of the secondary school music curriculum to accommodate the use of digital music technology.

Conclusion

This study accessed the relevance of digital music technology in 60 selected secondary schools made up of 30 private and 30 government secondary schools in Port Harcourt metropolis. From the result of this study, digital technology is very relevant in secondary school music education and should be incorporated into the secondary music education curriculum as this has been perceived by teachers to make music education interesting and also encourage early career interest in music among secondary school students.

From this study, teachers in private and government secondary schools knew about digital technology software as it relates to music teaching and learning. The most commonly known and used software were Sibelius and MuseScore. Teachers perceived that digital technology is relevant in secondary school music education. Perceived relevance showed that digital music technology makes learning music interesting and gives early exposure that shapes a music career, and current trends in music education and performance are moving towards digitization. Perceived relevance based on utilization showed that digital music technology is very relevant in music teachers' jobs. Based on school type, there was no significant difference as regards the perceived relevance of digital technology in secondary music education.

Recommendation

From the results of this study, it recommends the incorporation of digital technology into the secondary music education curriculum as a way of enhancing career interest in music and facilitating efficiency in services rendered by music teachers to students.

Also, the study recommends that the undergraduate music education curriculum should be effectively improved to involve hands-on skills with digital music software as this is an efficient way of equipping teachers with abilities to navigate through new innovations in digital music technology. This will, in turn, make the transfer of this technology to secondary schools very effective and efficient.

This study hereby suggests that further studies be carried out in the following areas;

Utilization of digital music software among secondary school teachers.

Students' exposure to digital music software in secondary and tertiary institutions,

Job satisfaction with current music education curriculum among music teachers in private and government secondary schools.

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