

METHODOLOGICAL APPROACHES IN MUSIC EDUCATION TO ENHANCE MUSIC TECHNOLOGY INNOVATION IN TERTIARY INSTITUTIONS

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Abstract

Teaching and learning involve a systematic methodological approach, it is the application of these methodological approaches that aid learning to be carried out effectively. This study focuses on the methodological approaches used in music technology, importance of technology in music education, and its relevance in tertiary institutions. The aim of the study is to investigate the methodological approaches in which music technology is been taught as a course in the tertiary institution and to proffer some possible solution. The paper also featured the benefits of technology in music education and the merit of technology using different computer applications in music-education. This paper adopted a survey research design method where a group of people were picked and studied to represent the entire population. The targeted population was made up of lecturers and students. The paper further proffered solutions by putting optimization measures to promote the adequate application of methodological approaches in music technology through music education. The study concludes that the age we are in is the 21st century which is regarded as new age of knowledge development and adequate methodological approaches should be effectively used to carry out teaching and learning.

Keywords: Music-Education, Music-technology, Teaching methods, Methodological approach, Tertiary institutions.

Introduction

We presently live in an age where technology is consistently permeating into virtually every activity of man and that is largely because of its numerous and limitless advantages. With the rise of popularization of digitization in the world, technologies such as computer, music software and hardware have also been developed by leaps and bounds.

The application of computer technologies in the field of education most especially in music studies has gained and rapidly continue gaining ground in various educational sectors around the globe.

Technology is now an integral tool in all aspects of the musician's work be it composing, concert, performing, teaching, recording, browsing the internet, researching or managing a concert series.

Adedeji in Adedeji (2004) affirms:

There is virtually no aspect of musical processes that is not realizable with the computer technology and internet, including global music teaching, research, marketing, audio, and video recording, editing, mixing, mastering, harmonization, and orchestration. Adedeji (2004) further states that "there is over 4,000 music software of different categories. Popular notation software used in Nigeria currently includes the Cakewalk series, Sibelius, Finale, and Noteworthy Composer. Of them, Sibelius is the most comprehensive, easily operated, and less deficient (p. 3)

Technology provides rich possibilities and applications to teachers and students in educational settings and its facilitates effective and permanent learning by supporting teaching. It also offers different perspectives on events and situations. Technology-centric tools have long been an indispensable part of music and music education, the technology that has been shown in the field of education has given a new perspective to the understanding of education. The tools in music education combined with technology, bring a very practical form of technology in the music curriculum, provide an expanded education for music students and help them to step into the 21st century music world.

Technology is known as a scientific knowledge used in practical ways in all spheres of life, it is the most modern designed machinery or equipment for the use in almost all facets of life including education. According to research technology and music work hand in hand, every music production has some sort of technology in it. The methodological approaches in teaching and learning of music using technology cannot be overemphasized because the global wave in the use of educational technology and its revolutionary effect has been a major attraction in the academic performance of the students. With the innovation of technology music have been available in different media platform such as television, radio, computer, laptops, mp3 players etc., technology is a driving force of development and education and it plays a key role in attaining to this development. Music as a subject has many sides and aspects. It has it theoretical, practical and other aspects. As opined by Savage (2001) the use of technology innovation in the music classroom has the potential to challenge the approaches to music teaching and learning (p.25). The

adequate use of the right approaches of technology in classroom brings the learner to various activities to aid understanding of the subject matter, the technological revolution at its invention of computer system and network increasingly enhanced global anxiety of media with its connectivity, boundary elimination and personal computer practices which exposed the students and society to a new trend of digital music consumption culture.

Music Education

Music education is the art or process of teaching, training and learning music which can be formal or informal because education originally starts from conception. As such music education starts in the home informally as traditional folk or indigenous music of one's society.

Ezeugwu (2016) states

Music education is a field of study associated with the teaching and learning of music. The study of music seeks to develop the whole person. It is a basic life skill just like walking or talking. It has so much to do with person's moods, emotions, feelings, attitudes and opinions. Hence, it is considered a fundamental component of human culture and behavior. Every normal child naturally is endowed with the basics of musical activities which include singing, dancing and playing musical instruments. Again, the aim of music education is to develop the child's knowledge and skills on music and the arts in order to be useful in the environment. This means that the process of continuity from what is obtainable in the child's environment should be made available in the school environment (p.1).

Okechukwu (2017) defines music education as "the art or process of teaching, training, and learning music which can be formal or informal because education originally starts from conception; as such, music education starts in the home informally as traditional folk or indigenous music of one's society" (p. 141).

Music education also means the all-round inculcation of musical practices by an expert into his amateur/learner so as to equip him musically in his environment and to face his life challenges musically. Music education is the acquisition of musical knowledge and skills in a formal or informal setting by one who desires it. In a formal setting, it is a systematically planned programme centered on the three domains of learning (cognitive, affective, and psychomotor) to suit the learner and, upon completion, is awarded a certificate. While in an informal setting, it can be organized outside the four walls of education. It can also be acquired by participation or observation.

According to Obiesie and Nwamara (2018), music education:

Touches every aspect of learning/educational taxonomy. These include the cognitive domain (the acquisition of knowledge), the affective domain (the learner's willingness to receive, internalize, and share what is learned), and the psychomotor domain (the development of skills). Music education has often been defined by various Nigeria music scholars to be the sum total of all skills, knowledge, principles, and strategies which a music practitioner needs to acquire in order to be effective and efficient in his/her job as a professional (p. 207)

Hebert (2019) define music education as a field of practice in which educators are trained for careers as elementary or secondary music teachers, it is also a research area in which scholars do original research on ways of teaching and learning music. (p. 22).

Music education is fundamental to global lifelong educational system. It is pivotal and indispensable to the educational advancement and development to any nation, as indicated by Effiong (2013) opines "whether in the informal or formal system, music education stands as the panacea for life, and as an unavoidable weapon per-excellence in enhancing facilitating and boosting the educational standard of any nation". (p. 327).

Music Technology

Music technology is a comprehensive aspect of music that deals with the application of science and technological tools, techniques and processes in music composition, performance , research, education and therapy and so on. Music technology is the study or the use of any device, mechanism, machine or tool by a musician or composer to make or perform music to compose, notate, playback or record songs or pieces or to analyze or edit music. According to Beam (2023) Music technology is the application, such as computers and software to the musical arts. Whether it is the use of sequencer and editing software or electronic musical devices. Music technology and its definition expands. It is sometimes referred to as sound technology, but while these two fields are similar, they are also vastly different. Music technology encompasses the composition, playback of music and recording, while sound technology may only encompass the production of various sounds. Accessed February 8, 2023. From <https://www.musicaexpert.org>.

Music technology is the technological version of musical instruments, musical devices, software used in playback by the computers, composition and also the electronic gadgets used in performances and recordings. Musical creativity combined with technological advancement gives rise to musical technologies that are transforming the way music is being created and enjoyed. According to Nmadu (2020) Music technology is also a field of study in music education specialized in different areas of music technology (mechanical) music technology (electric) music technology (electronic and

digital).(p.239) Mechanical music technology involves using any device, machine, mechanism or tool by musician to make or perform music while Electronic music technology deals with musical instruments and recording devices that use electrical circuits, often combined with mechanical technologies. Music technology is connected to both artistic and technological creativity and has been used in modernist and contemporary experimental music situations to create new sound possibilities. As technology advances, it finds its way into all sorts of musical applications. According to Clifton (2010) Music technology describes the technological equipment used mainly compose, perform, record, store and playback modern music. (p. 6).

Teaching Method

According to the Contemporary English Dictionary, “methodology is defined as a set of methods and principles that are used when studying a particular subject”. Leonhard & House (1972) stated that the procedures used by a teacher to organize the learning experiences of his students are called teaching methods. (p. 276). The term teaching methods refers to the general principles, pedagogy and management strategies used for class-room instruction. Your choice of teaching method depends on what fits you as an individual. According to Westwood (2017) “teaching method comprises the principles and methods used by the teachers to enable students’ learning. These strategies are determined partly on subject matter to be taught and partly by the nature of the learner” (p. 24). He further stated that for a particular teaching method to be appropriate and efficient, it has to be in relation with the characteristics of the learner and the type of learning it is supposed to bring about. The basis of teaching methods include the nature of the subject matter, the objectives of instruction, the nature of the learning process, the maturity level, experiential background and present needs of the students, teacher competencies and such physical conditions as material available, time available and class size. The approaches for teaching can be broadly classified into teacher centered and student centered. In a teacher- centered approach to learning teachers are the main authority figure in this model, the students are viewed as “empty vessels” whose primary role is to receive information (via lectures and direct instruction) with an end goal of testing and assessment. Leonhard and House (2017) asserted that, these methods of teaching fall into two broad categories, teacher-centered method and student-centered methods. (p.277). Lecture and recitation methods are teacher-centered. Both are characterized by teacher domination in instructional planning, in the conduct of classroom activities, and in the evaluation of results.

In student- centered approach to learning, while teachers are the authority figure in this model, teachers and student play an equally active role in the learning process, the

teacher's primary role is to coach and facilitate student learning and overall comprehension of material. Student learning is measured through both formal and informal forms of assessment including group project, student portfolios and class participation. Nilson (2016) asserts that teaching methods are the broader techniques used to help students achieve learning outcomes, because it help student to master the content of the course and it enables them to learn how to apply the content in particular contexts (p. 42) According to Shipley (2020) he defined teaching method as the combinations of strategies and principles used by teachers to enable student or learner learn by the subject matter to be taught and in part by the nature of the learner. (p. 50).

The teacher's methodology in teaching music is central in disseminating music knowledge effectively, the selection of a method of instruction is in most cases influenced by personal and environmental factors such as objectives of a particular lesson, group sizes and availability of resources, entering behaviour of learners and teacher preference.

Methodological Approaches for Music- Education.

Lecture method- The lecture method is regarded as the most comprehensively used pedagogical method within educational institution at all levels. In simple terms, this is the method in which the instructors are imparting information to the students in terms of lesson plans and academic concepts within the classroom settings. In a lecture the instructor tells, explains, describes or relates whatever information the trainees are required to learn through listening and understanding. The lecture method is more teacher- centered but it can be effectively applied in rendering instructions and explaining key points. The lecture method can be used along with other methods of teaching and learning in introducing a new topic and illustrating it with numerous examples. The approach can be appropriate in situations when certain information must be provided especially in introducing new concepts in a relatively short period of time. The lecture method of instruction is recommended for trainees with very little knowledge or limited background knowledge on the topic. It is also useful for presenting an organized body of new information to the learner. To be effective in promoting learning, the lecture must involve some discussions and, question and answer period to allow trainees to be involved actively.

Project method.-The project method is one of the modern method of teaching in which the student's point of view is given importance in designing the curricula and content of studies. This method is based on the philosophy of pragmatism and the principle of learning by doing. The product method is also an educational enterprise in which students are given practical problem to solve over a period of several days or weeks. Music

students design and conduct project under the supervision of the lecturer. The project method gives the students the opportunities to conduct, investigate and gather information on what they would use in achieving their goals. The project method requires practical demonstration at the beginning by the teacher, a music educator needs some skill and knowledge in some areas of his/her own culture, where the teacher does not possess the requires skills, it is necessary to engage the services of a resource person. The learners should be encourage to collect or borrow materials from home. The teacher needs to demonstrate the procedure before the students while the students commence the process simultaneously as the teacher directs.

Demonstration Method.

The demonstration method in teaching can be defined as giving a demo or performing a specific activity or concept. In other words, the demonstration method is a teaching-learning process carried out in a very systematic manner. Demonstration often occurs when students have a difficult time connecting theories to actual practice or when students are unable to understand the application of theories. It is a teacher-centered method that combines both telling, showing and doing for the benefits of the student. The teacher demonstrates using his/her voice, movement of the body and black board illustration. Maduewesi (1997) assert that demonstration is the teacher's greatest assets in arriving at fundamental skills and practices in a very short time, it is also good in developing understanding and introducing new skills to the students. (p. 37). A method demonstration is a teaching method used to communicate an idea with the aid of visuals such as posters, musical instruments, power point etc.

In the teaching and learning of music, demonstration appears to be very good means of achieving objectives. It is an effective method of teaching music. It is widely used by teacher/ student- centered method. It can be applied in teaching quite a good number of performance skills. Demonstration should be supplemented with pictures, recordings diagrams and films. It requires some practical demonstration by the teacher which involves student's active involvement through observation, imitation and reproduction. In connection to music studies, music teacher can demonstrate the technique of using technological gadget and computer application to compose music, create beats, produce music and jingles and transcribe staff notation to solfa notation using music softwares.

Technology in Music Education and Its Benefits.

Technology in music education is an essential part of a contemporary pedagogical approach to music learning. The use of technology in music education can provide asynchronous learning, individual instruction that engage students through the

development of new learning strategies, the music education technology resources are innovative, interactive and easily downloaded. The use of technology in music education classroom invigorates students and allow them to adeptly learn the tools that professional composers and musicians use today. The music education technology resources include digital recording software, interactive white board and interactive education application that provide an extensive array of digital learning tools. Advances in digital technology enhances students ability to create and analyze music. This means that students in music classroom who use technology can look at it as another instrument. Using technology in music classroom allows student to work at their own pace. The use of technology in music education allows a more efficient instruction of basic fundamentals through the use of practice to create a strong knowledge of rhythm and note recognition. Technology affects practically everything we do in life. Technology and music interwoven, they are practically inseparable. Sahasiabuddhe, (2003) assert that “the interplay of technology and arts is unmistakable. The arts put tasks in front of technology and technology put opportunities in front of the artiste. (p. 8). Modern technologies can serve as a tool to enrich educational approaches in learning music knowing that it can provide students feedback and enrich their knowledge and experience in developing and enhancing their self-expression. The benefits of Music technology in Music Education

Music technology helps to improve the understanding of musical theory

You can use it to teach students pretty much any topic especially the use of dynamics, in hands on practical way. The plug-in and automation features in Logic Pro and most music software, enable students to understand classical terms such as crescendo and diminuendo on an interactive platform. Automation tools also give a level of interaction during the process, as they are able to control the dynamics according to each section and instrument. Plug – in controls such as attack, release, sustain and decay help students to visually interact with terms such as staccato, legato and accent; all essential tools when creating a highly expressive composition.

Develops performing, composing and arranging skills through an integrated approach

Through Music technology students can have access to composition and arrangement techniques in a creative way. When composing a song using an acoustic instrument, it can be challenging to write parts of the composition, plus arrange different sections, without an understanding of compositional structure and the ability to play a musical instrument. Using software solutions such as GarageBand, Sibelius, Musescore, students are able to substitute these requirements through access to a world of instrumental loops and

samples, whereby students may listen, cut and paste various samples to begin to build their own composition. The software allows students to use the interface as a canvas for their creations; to visually manipulate melody, harmony, rhythm, form and timbre.

Discovers hidden talents within the classroom

The benefit of using music technology in a classroom is the fact that students get exposure to unlimited resources and possibilities to use as a platform for their creativity. Music technology is a medium whereby students may uncover skills they did not know they had. The use of music software such as Soundation4Education, allows a student to think critically, independent choices and cognitive judgments in the music production process. Presenting a range of musical opportunities provides the prospect of raising self-esteem, increasing motivational levels of a student and enabling them to use their creative skills for a career in the industry.

Music Technology enables students to extend their learning and creativity outside the classroom

The use of music technology software aids to remove certain barriers to learning for students. Music technology is a fairly new skill, especially for school students. With the likes of Soundation4Education, students are able to access music production software outside of the classroom without having to afford the costly price of music production software. Through access to the Internet, students may develop music production skills by watching the vast array of tutorials from music producers from the comfort of their bedroom.

The Merits of Technology using Computer Application in Music Education.

The merit of technology in music education are enormous, Onuora- Oguno's (2009) assert that the benefits of computer applications to music education are numerous; the computer machinery is very flexible and precise and yield a wide variety of musical applications. Onwuekwe (2010), on the other hand, enumerates the uses of the computer in music education through music composition as thus.

- (i) Computers can be used for musical score writing. This could be characterized as an information -translating function.
- (ii) The most significant use of computers has been to synthesize sound waves.
- (iii) The use of computers is to compose or assist composers to create works for instruments or electro-acoustic performance.

Chukwuma (2021), on the other hand, discovers that with the advancement of technology, many merits are seen in the process of teaching and learning in the following ways.

Research-The merit of computer application to music pedagogy is very vital in the aspect of research. The internet provides a gateway into the world, in music pedagogy one can learn and research through prerecorded and live performances of virtually every style, different historical period, and origin of music of different composer. Through the use of computer application one can research the history and musical genres, examine relationships within the music and other arts, discipline and analyze and describe the music to its simplest form for better understand.

Composition – The merit of computer application to music pedagogy is that it makes composition very fast and learning how to compose easy, the computer through the Sibelius and other music software has become a godsend to composer and musician of all kinds, whereby all the sequence pattern, and functions for multi tracking has been programmed digitally that makes creating of beats easy and more creativity of unique sound has been achieved depending on the person's knowledge on how to use the software. Through the computer most learner create music from home using different software, some individuals can notate and compose music and even participate in their online community and share creations. Using the computer application in music pedagogy has opened door to real learning in music such software allow student to pace their own learning and it helps to develop a student as an independent learner.

Recording- One of the merit of computer to music pedagogy is that it is used for recording, through the computer application it is easy to create a good quality recording either with a USB mic or professional computer recording interface and music production can easily adjust the timbre of the music at all time. One can automate regular tasks such as launching specific application or software, its relationship to music pedagogy is that it can be programmed for the purpose of creating Jingles, advertisement concerning different topics.

Multi-tasking – Multi-tasking is one of the merit of computer application to music pedagogy, a person might do many different tasks at the same time while working on the computer, e.g one can transcribe a piece of music using Sibelius software and still play music, an email can be sent, electronic piano can also be used to tune musical instruments during a musical performance. It also helps in storage, Storage is very important in computer application and music pedagogy, some of the information accessed from the internet can be stored using the computer application, data can be stored separately for years in the computer storage, beside one can easily find any specific file using the search feature. This eliminates the need for paper and encourages people to improve the world.

Arrange, Rearrange and Analyze pieces- Through the computer application, composers can arrange, rearrange another composers work to his own musical style , secondly, a composer might use the computer to rearrange musical pieces for orchestration and instrumental ensemble in different part, one can identify sound and pitch through the electronic keyboard or software. There are several application that enable one to play the piano, transcribe musical score into solfa notation.

Modern technologies can serve as a tool to enrich educational approaches in learning music knowing that it can provide students feedback and enrich their knowledge and experience in developing and enhancing their self-expression.

Theoretical Framework

Constructivism Learning Theory

This work is hinged on Constructivism theory where teaching and learning are based on the premise that cognition (learning) is the result of "mental construction, constructivism is a learning theory found in psychology which explains how people might acquire knowledge and learn. It therefore has direct application to education. The theory suggests that humans construct knowledge and meaning from their experiences. In other words, students learn by fitting new information together with what they already know. Constructivists believe that learning is affected by the context in which an idea is taught as well as by students' beliefs and attitudes. Driscoll (2000) explains that constructivist theory asserts that knowledge can only exist within the human mind, and that it does not have to match any real world reality. Learners will be constantly trying to derive their own personal mental model of the real world from their perceptions of that world. As they perceive each new experience, learners will continually update their own mental models to reflect the new information, and will, therefore, construct their own interpretation of reality. According to Driscoll (2000), constructivism learning theory is a philosophy which enhances students' logical and conceptual growth. The underlying concept within the constructivism learning theory is the role which experiences-or connections with the adjoining atmosphere-play in student education. Students can now create music using Music software to compose, notate perform and improvise on midi instruments and listen to variety of genres and styles all through the use of computer software and a midi instruments. Students can now create music using notation programs, perform and improvise on midi instruments and listen to a variety of genres and styles all through the use of computer software and a midi instrument.

Conclusion

Arising from the findings, this study concluded that methodological approaches in music education to enhance music technology innovation are pivot to the enhancement of music education in tertiary institutions, through the methodological approach students actively participate and learn to do things on their own (learn by doing) and they get to discover ideas, facts and knowledge for themselves, and its impact in music education has globally opened doors for varieties of vast for music education courses

Recommendations

Based on the findings, the following recommendations were made.

1. Technology in music learning should be included in the educational music curriculum as this will sustain the interest of the student to learn music at all levels.
2. Music educators should be versatile in different area of music technology so as to know how and when to use the proper methodological approach and teaching methods to carry out practical lessons with the aim of getting a positive result as feedback after illustration.
3. The University authority should assist the Music department to make available technological gadgets that will enhance effective learning adding advantage to the student growth academically and also organize workshop and training programmes on Music technology for the lecturers.
4. The music educators are to utilize technology potentials to motivate the students interest in studying music. The evidence of the technology potentials is most visible when one looks at how new technologies have revolutionized the ways in which people perform and compose music

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