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Multimedia Technology: A Vital Instrument for Music Composition

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Abstract

Music composition over the years has continued to be a much dreaded course of study by so many Nigerian students of Music in tertiary institutions. Through the interview conducted in this study, it was discovered that the students' fear of the course stems from its abstractness or rather as a result of the erroneous belief that it is a very complex area of specialization to venture into, in music pedagogy. This study is aimed at disabusing the minds of the students of music from this xenophobic wrong impression and by creating an enabling mind-set and interest in music composition through this expository study on the multimedia technology as a vital instrument in music composition. A simple observation and comparison of the old manual system of music composition/notation with the new computer-assisted multimedia system reveals that the computer-assisted multimedia method is much better in terms of facility as well as performing numerous tasks than the old system and it is therefore recommended for compositional and notational purposes. Participation, interview, observation and literature review were the research methods employed for this study.

Key Words: Multimedia, Technology, Music, Composition

Introduction

The concept of music has gone beyond an embodiment of organized sounds pleasing to the ears to a channel through which information is disseminated through coordinated sounds and often times with texts. As a matter of fact, the texts and tones of the music may bear corrective messages, counselling, warnings, rebukes, exhortations, and admonitions which may be unpleasant to the listeners hence, the description of music as mere pleasant sounds is deficient. Esimone (2009) observes that, "music goes beyond organized sounds that please the ears to penetrating the innermost being of man to cause conspicuous change in the attitudes of man" (p. 1).

Music composition involves the creation of works of music. Randel (2001) defined composition as, "the activity of creating a musical work, the work thus created" (p.182). In her own definition of music

composition, Onwuekwe (2007) stated that it is “the art of creating an original melody that has not been created by any other composer” (p.134). These definitions imply that composition is the creation of original works of music as well as the created work itself.

In our own context of music composition, everyone is not expected to be a ‘Meki Nzewi,’ a ‘Dan Agu’, a ‘Sam Ojukwu’, a ‘Felix Nwuba’, an ‘Okechukwu Ndubuisi’, a ‘Mozart’, a Bach or any of the numerous art music composers of the world to be able to write simple melodies with simple harmonies. A music composition does not have to be complex to be able to pass a message across to the public. Hence, all and sundry in the music studies must be involved in this gospel of music composition as a means of impacting on lives positively. There is a better way to music composition that is communicated to the readers in this study that will enable all students of music as well as musicologists to compose music without much difficulty, and that is the multimedia (computer technology) approach to music composition.

Multimedia

Multimedia is a compound word containing two words, ‘multi’ which means many or ‘several’ and media, which means channels through which information is disseminated. According to Salawu, Ajalabi and Inegbedion (2006), “the word multimedia means ‘many’. This implies that many media are put together to form a single medium of instruction (p. 1).

Theoretical Framework

Philip in Salawu (2006) highlighted that:

Multimedia is characterized by the presence of text, pictures, sounds, animation and video. Some or all which are organized in some coherent programme. It is the integration of multiple media elements (audio, video, graphics, text, animation etc.) into one synergic and symbiotic whole that results in more benefits for an end-user than one of the media elements that can provide individually (p. 3).

From the foregoing, multimedia means the integration of different media into one medium which enables the user to perform more functions than when a single medium is being utilized. Based on the above assertion, the researcher emphasizes on the efficacy of multimedia technology in music compositions since it performs several tasks as the framework.

The Computer Technology as a Multimedia

The word technology originated from Greek word ‘tecnologia’. ‘Techne’ means ‘craft,’ and ‘logia’ means ‘ordering or arranging’. Technology refers to all tools and procedures and man’s ability to control nature. The term can be applied to specific areas such as ‘construction technology’, ‘educational technology’, ‘computer technology’, etc. (Wikipedia 2006). This implies that in technology, we re-order our environment using our God-given wisdom.

Fenrich in Salawu et al (2006) defines multimedia as “the existing combination of computer hard ware and software that allows you to interpret video, animation, audio, graphics, and texts resources to develop effective presentations on a computer” (p. 7). In their own contribution, Salawu et al, also enlighten that, “people see multimedia as a computer based instruction” (p. 2).

Multimedia often refers to computer technology. Nearly all PCs built today are capable of multimedia because they all include a C-D ROM or DVD drive and good sound and a video card often built into the motherboard (C:\Documents and settings:\user\Desktop/multimedia /Definition-Scala.him.)

All these definitions of multimedia point to the fact that it is synonymous with computer technology hence multimedia can be used interchangeably with computer technology. This is so because the present day computer has the capacity to carry texts, graphics, audio, video and animation and these qualifies it to be multimedia equipment since it is capable of performing these tasks.

Computer

A computer is an electronic device that is used for storing information as input, processing it and then retrieving it as output. According to Iwu (2005), “Computers are ancillary equipment, software, hardware and similar procedures (including support services) and related resources, any equipment that is used in the automatic acquisition, storage, manipulation, management, movement, transmission, or reception of data or information” (p. 8).

Onuorah- Oguno (2009) described computer as, “a device for processing, storing and displaying information” (p. 2).

Software

Wikipedia (2014) defined software as, “a collection of computer programmes and related data for telling a computer what to do and how to do it”. On-line Encyclopaedia (2014) described software as “a general term for the various kinds of programmes used to operate computer related devices.” Eshemokha (2008) defined software as “programmes created to perform specific tasks. They provide the users’ desires because they are programmes created specifically to meet the users’ needs” (p. 49). As clearly stated above, soft-wares are application programmes designed for performing specified tasks. Examples of softwares that aid in the tasks of music composition are finale, noteworthy, sibelius, forte, nuendo etc. For this research, we shall concentrate on finale software.

The Multimedia Components of the Computer Finale Software

The finale application software has in it, an integration of texts, graphics, audio, video and animation etc. in form of self-tutorials or computer-assisted instructions. This makes it perform several tasks.

Texts self-tutorial

This tutorial displays graded instructions in texts formats on the use of the finale software in music composition and notation. It is a “Read only” package in the Read Only Memory (ROM) of the computer and as such the instructions in texts cannot be edited since it is not a rewritable programme.

Audio Self Tutorial

The audio tutorial enhances the sense of hearing. It enables the composer to listen to a set of graded instructions on the utilization of the finale software for the purposes of music composition and notation.

The Video Self Tutorial


This package enables the composer not only to listen to instructions but also allows the user to watch or view the demonstrations therein on the use of this software for notation and composition. It therefore enhances the senses of hearing and that of seeing. The graphics involved here are motion pictures, texts (in addition to sounds).

Animation

Animation means giving motion or movement to inanimate objects. This component of the finale software moves texts, pictures and objects to the required location as the instruction goes on.

Features of the Finale Screen and the Usage

When a computer completes its booting (i.e. switches on), an environment called the desktop appears. Once the finale icon is clicked, the finale screen is displayed. It is at this environment that the composer does the compositions and notations. The taskbar and pointer appear. Other icons are also displayed.

Icons: These are commands in picture form that serve as shortcuts to programmes, files or commands e.g. clef icon  time signature icon (⁴/₄), dynamics icon (*mf*), repeat icon: || etc.

Menu: The menu reveals all the necessary commands that can be used in working in the finale environment.

The Text Board Icon: This icon represented by (A) enables the composer to type the text of his or her song.

Dynamics icon: This icon is represented by *mf*, and when clicked enables the user to select the required expression marks/terms among so many that are displayed. Selection of instruments/voice parts is possible when 'new document' is activated. A dialogue box appears from where the composer selects document with wizard set up. It displays so many instruments/voices from where the composer selects the instruments/voices to compose for. These are placed automatically on the template staves.

Play back: This is a very interesting feature which enables the composer to listen to his or her compositions and effect changes where necessary. It is very important for people who are deficient in aural work and sight-reading.

Tools icon: This icon enables the composer to perform some graphic tasks such as resizing (scale to view), import selection, 'tiff graphics', and then it is saved and sent to document file or to Microsoft word (MS word) environment depending on the capacity of the PC for printing purposes as hard copies.

Notation: The finale software allows the composer to notate his compositions by making available in-built staves for it.

Insertions

The finale allows the composer to insert the clef, time signature, dynamics, key signature, musical notes and rests on the staves.

Transposing: The finale enables the user to automatically transpose his compositions to convenient keys. In orchestrating, the computer finale software inserts the keys of all the transposing instruments and retains the home key for the non-transposing instruments.

Editing: The edit tool enables the composer to edit his composition by deleting the unnecessary notes using the backspace or delete key or even its eraser.

The Mass Edit Tool: This tool enables the composer to copy a section of the work and paste it at the required location, instead of the laborious task of recopying the whole section especially when new texts are required and repeat marks cannot serve the purpose.

The Undo/Redo Tool: The undo tool cancels the last operation if it is not required while the redo tool returns the last operation if it is needed immediately.

Composer's Assistant: The composer's assistant allows the composer to carry out some creative work more competently. It gives chords and styles options e.g. homophonic or contrapuntal (canonic) arrangements, chord progressions, modulations suggestions. An amateur composer benefits tremendously by using the composer's assistant.

Midi and Mixing: There are musical instruments/voices that tend to outshine the rest by their timbres or natural loud volumes. The ‘midi’ when activated mixes the sounds of the instruments through an inbuilt microphone level for each instrument/voice. Today, recording studios do not need to buy mixers since they are inbuilt in our present day PCs.

Sequencing: Muro (1993) defines a sequence as “a device that records and plays back performing information.” (p.23). Sequences make it possible to change or edit almost any aspect of this information. A sequence also makes it possible to save or store performance information usually on a computer diskette. The storage capacity will allow you to retrieve the data and playback any song at a later time without having to re-record the music. A sequence therefore is a device that can record edit, store, play back digital data that represents a musical performance.

Methodology

The researcher interviewed some Music students from three Nigerian tertiary institutions namely; Nnamdi Azikiwe University, Awka, Nigeria, University of Port Harcourt, Nigeria and the Alvan Ikoku Federal College of Education, Owerri, Nigeria using the purposive sampling method. Sixty students (twenty from each university) were interviewed to ascertain why students dread music composition as a course of study in music. Also, an excerpt of the researcher’s piano music composition with the aid of the finale, is documented in the Appendix for reference purpose. The data was analyzed using simple percentage and mean.

Hypotheses

The following hypotheses were postulated for the study:

1. Students of music in Nigerian tertiary institutions dread music composition in their music studies.
2. Students of music lack interest in music composition.
3. Students of music dread music composition because of its abstractness.

Testing the Hypotheses

Hypothesis 1: Students of music in tertiary institutions in Nigeria dread music composition in their music studies.

	AGREE	DISAGREE
SCHOOL 1	19 (95%)	1(5%)
SCHOOL 2	20 (100%)	0(0%)
SCHOOL 3	19 (95%)	1 (5%)
TOTAL %	290	2
MEAN	96.7	3.3

Hypothesis 1 is accepted since mean of 96.7% of music students from the three universities agree that students dread music composition as a course of study while 3.3% disagree.

Hypothesis 2: Students lack interest in music composition as a course of study.

	AGREE	DISAGREE
SCHOOL 1	2 (10%)	18(90%)
SCHOOL 2	1 (5%)	19(95%)
SCHOOL 3	1(5%)	19 (95%)
TOTAL %	20%	280
MEAN	6.7	93.3

Hypothesis 2 is nullified because mean of 6.7% of the students agree that students do not have interest in music composition while mean of 93.3% disagree.

Hypothesis 3: Students of music dread music composition because of its abstractness and complexity.

	AGREE	DISAGREE
SCHOOL 1	20 (100%)	0(0%)
SCHOOL 2	20(100%)	0(0%)
SCHOOL 3	20(100%)	0 (0%)
TOTAL %	300%	0%
MEAN	100	0

Hypothesis 3 is upheld because mean of 100% of the students agree that students dread music composition because of its abstractness and complexity.

Findings

1. Most students of music in tertiary institutions in Nigeria have interest in music composition.
2. In spite of their interest in music composition, the course is dreaded by music students because of its abstractness.

A Comparative Study of the Old Manual or Hand Written System and the Computer-Aided Multimedia System of Music Composition/ Notation

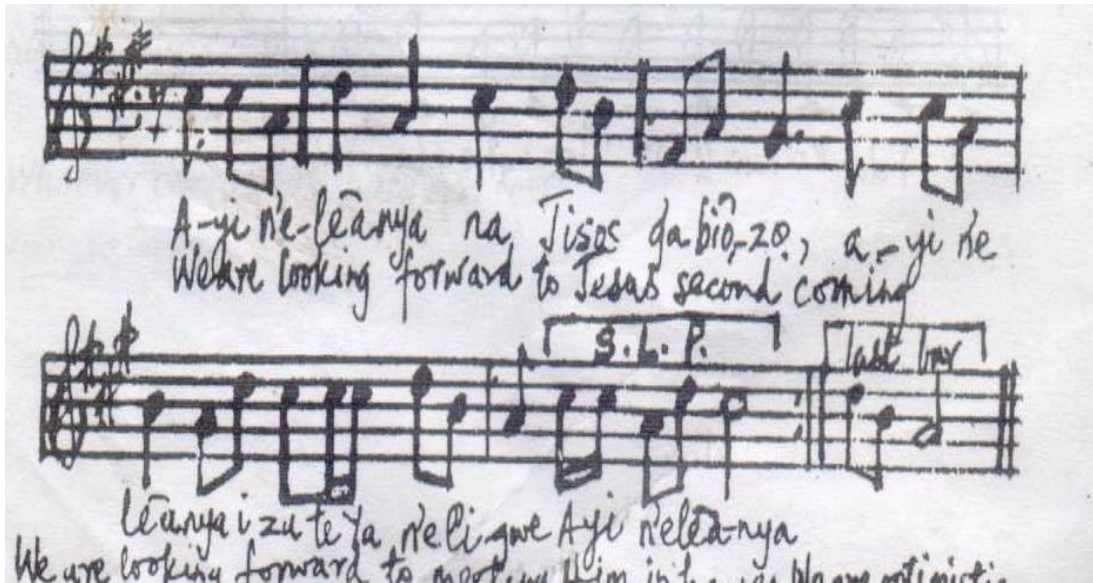
Anyi N'ele Anya

Finale Notation

From Dan Agu's Form and
Analysis of African Music(p.26)

A-nyi n'e- lea-nya na Ji-sos ga-bio- zo, a-nyi n'e-
lea- nya i- zu- teYa n'e-li-gwe A-yi n'e-lea-nya

The Hand-written or Manual Version of the Music Above



A Comparative Study of the Multimedia (Computer System) and the Manual (Hand-Written) Method of Music Composition/Notation

	Multimedia system (computer Technology)	Hand written/Manual System
1	Insertions are made	No insertions are made
2	Edits automatically	Manual erasers are used for corrections
3	Neater	Not as neat as the computer work
4	Faster	Slow
5	It has an in-built transposer which automatically transposes	It has no transposer and so all the transpositions are done manually
6	The five senses are utilized	Not all senses are utilized (no sound, no motion pictures)
7	Gives self-instruction	No self-instructions
8	Text board used to type texts	Texts are hand-written
9	Allows playback	No play back
10	It is multimedia friendly	It is single medium friendly
11	Utilizes composer’s assistant	Only self-efforts
12	Mass edit tool allows copy and paste	Copies manually
13	Electronically written	Hand written
14	Accurate data	Can give inaccurate data
15	Enables animation	No animation

The Importance of the Computer Technology in Music Composition

Speaking on the importance of computer in music composition, Drikiristine (2009) in an internet source states as follows:

1. It makes almost everybody a composer as key tends to compose pieces with little musical skills.
2. It helps those with sound and more training to produce more complex and interesting music.

3. Computer composed music enables the composers the opportunity to listen to what he has composed without looking for a choir or orchestra. He stands in position to correct his score. The score sheet is even mass produced, with neat and better presentation.

Taylor (1980) also informed that “with the computer, the student can easily compose, and document his/her own original works, record with ease and learn modern ways of making music faster than they had even done before (p. 53). Agu (2011) added:

No doubt technology has permeated all spheres of music by providing it with various kinds of equipment with greater creative values. This has immensely contributed in widening the creative scope of the composer. The synthesizer being the latest technological advancement in music industry is so versatile and powerful in performance. The instrument has the capacity to produce sounds similar in tonal qualities and texture to that of the known instrument. It is therefore quite convenient for a solo performer to attain good results with the electronic instrument in any class of performance singlehandedly (pp. 19-20).

Disadvantages of Computer Aided Compositions

In as much as the computer assists tremendously in music compositions, it still has some shortcomings as stated below by Salawu et al (2009).

1. Multimedia requires high-end computer systems, sound, images, animation, and especially video.
2. It constitutes large amounts of data which slow down the computer
3. It may not be accessible to a large section of intended users if they do not have access to multimedia capable machines (projectors).
4. Development costs in multimedia are very high and it takes much time.
5. It requires a considerable level of computer literacy to be able to use the software.
6. Retrieving a saved work is a challenge especially if the user forgets the name used or the location for saving the composed music. In some cases, if the composer forgets to save the work before shutting down the computer, the whole work is lost.
7. A virus or the attack of the system ruins the whole work. It is advisable to save the work in CD or flash.
8. The computer assisted approach to composition has rendered many composers uncreative and lazy, since the computer does virtually most of the work and replays them. (p.9).

Agu (2011) lamented thus:

The availability and use of technologically advanced appear to have made majority of pop musicians lazy and incompetent. Most pop musicians now prefer achieving their goals through the easiest means. Most of them are no longer prepared to toil for several months or years to master their instruments since the electronic instrument could give them whatever tone quality they desire. Despite the gains of technology, we should not be misled by its great advantages to sweep away the basic musical concepts of our folk/traditional music. We should not allow numerous opportunities in the acquisition of skills on instruments playing to be underutilized (p. 19).

Conclusion

Music composition is a necessity as a medium of expressing our views, opinions, channelling ones ideas and messages to the public. This document has been able to give an expository description of multimedia (computer technology) as an aid to music composition. Although the multimedia approach to music composition has its challenges, its advantages supersede these challenges and therefore are recommended for music composition and notations.

Music composition should no longer be seen as a dreaded course with the finale application as an eye-opener on composition made easy. Students of music are therefore enjoined to be involved in music composition. They need to gain a reasonable knowledge of the theory of music as a precursor to music composition before attempting the utilization of the finale soft-ware application in music composition.

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APPENDIX

AN EXERPT FROM MABEL OKPARA'S PIANO PIECE USING THE FINALE
COMPUTER SOFTWARE

My Little Piano Piece

Mabel Okpara

Cantabile

Piano

mf

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8