Enhancing Music Compositions with Computer Devices Problems and Prospects

By

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Abstract

In recent times, there has been an aroused and sustainable interest in composing music with the computer devices. These devices are also not limited to the new improved and sophisticated mobile phones, tablets, iPad and other related electronic devices alike. The purpose and objective of this paper is to investigate the many problems and prospects in using these devices which includes notation and facilitation of scoring and arranging, storage, preservation, dissemination, retrieval, recording and playback, sound synthesis that makes music analysis easy to understand. It also automates music composition and makes it easy visually, clear and comprehension of sounds. However, the problems that persist discouraging the continued usage, and fascination militating against the continued use of these devices especially for learners, (students) of composition and amateurs border on unemployment, discouragement of live performances, negative facilitation and hastiness of teaching and learning of live instruments and the non-inclusion of imputations of performance signs of music of other world culture amongst others are paramount and reoccurring decimals noticed in this paper. Having used the descriptive, analytical, observation and participatory and literal methods, the researcher in conclusion suggest and recommends ways to improve on these menaces and bring to light some ongoing new ideas recently being researched and experimented on through the evaluation of students by marking and grading them using automated information communication Technology (I.C.T) device.

Introduction

The electronic devices that are used in the writing of music are something

Music

The Webster's Dictionary of English Language International edition (2000) defines music as: "The art of giving structural form and rhythmic pattern to combination of sounds produced instrumentally or vocally by the written score of a composition of such score" (p. 658)

Composition/composer

On the term composition, the Chambers Dictionary (1998) International edition defines composition as "a work of art, especially in writing prose or verse" (p. 337), but Albert (2006) opines that "before composition begins, the medium to compose for should be considered first, as each medium has its characteristics and challenges in matters of moods, expressions, texture or timbre, effects, sonorities and other aesthetic beauty" (p. 23)
Similarly, Scholes (1777) sees music composition as

> The art of putting together of words, to make a poem or piece of prose, of notes to make a waltz or symphony, or details to make a picture. In music, the putting together consist chiefly in (a) combining successive notes to make melody, (b) combining simultaneous notes to make harmony, (c) combining melodies to make counterpoint, (d) combining phrases to make sentences and sentences to make long passages, (e) combining theme and their treatment to make pieces of movement in pieces, (f) combining movements to make the cyclic forms. (p.64).

Drawing from the above citation, the researcher views a composer as a unique artist, an educator in the field of music with their musical elements as tools on which their artistic works are formed for performance and learning. Still on the concept of a composer, Nuttin in Achinivu (1979) says "one can make music in an instinctive way, that is to say, music without any conscious theory of music at all. That is the kind of composition (such a person is a kind of composer." (p. 115). However, Achinivu further explains that his view or perception of a composer is a bit contrary to Nuttin's view by the following statement:

> I am thinking of a composer in the sense that Mr Akpabot, Dr Echezonma, Fela Sowande and Mr Bankole are composers: That is, men who consciously plan in advance the music they want to hear, and how are fully conscious intellectually of the qualities and relations of the sound which they choose. To be a composer in this sense, one has to have knowledge of the theory of music. (p.115)

It is probably based on this statement by Nuttin and Achinivu that Udoh (2007) in Nwamara identifies two major kind of composers thus:

1) Those who make music in an instinctive way; without any conscious theory of music; and
2) Those who consciously plan in advance the music they want to make; with a conscious theory of music. (p.31)

Computer Devices

A computer is a programmable electronic device that performs mathematical calculations and logical operations, especially one that can process, store and retrieve large amounts of data very quickly; now especially a small one for personal or home use employed for manipulating text or graphics, accessing the internet, or playing games or media from 20th Century. Accessed on April 12th, 2018

Prospect

"A reasonable advantageous and positive expectation" (New Webster's Dictionary of the English language International edition (2000:802).

Problems

"A matter that causes worry or perplexity". (New Webster's dictionary of the English language, International edition (p. 797).

In line with the above definitions of the keywords, one would conclude that the available devices to use include: Desktop and laptop computers, tablets, phones and Ipadsto compose music. According to Rudolph (1996) there are two accessible and usable types of technological devices for music which are either passive or interactive.

Passive Devices

These are technological devices that provide the user with some useful perceptive materials or information but do not allow interaction with the devices. Examples of these are cassette player or Audio Compact Disc which are basically used in playing an audio recorded piece of music to be listened to. Rudolph (1996) refers to as a passive device since the listener only perceives the sound of the music playing but cannot interact with the player as it is designed for listening alone.

Interactive Devices

These devices allow the participant or the user to interact with the device. Rudolph (1996) explains further that using a computer is an interactive activity since it allows for interaction between the user and the device. Therefore, the basic content of this paper will focus more on these technological devices with special interest on the computer.

One essential thing to do on the computer is to first of all install software on the computer in readiness for composing and learn the imputations of notes, rest , ties, slurs, arrangement of measure and systems and last the dynamics and expressions respectively.

Different Types of Music Notation and Recording Softwares
There are different types of music notation and recordable software's with diverse advantages and disadvantages.

Music Notation and Recordable Softwares
There are many music notation softwares namely: finale, Sibelius music score, cake walk and cubase whereas music recording software's for studios includes: Sonia, Flootyloops, Cubase, Reason propella head and Logic pro and so on.

The softwares mentioned earlier have different usage targets, some are to notate music without the natural voice sound waves while others can accommodate voice sound waves. Therefore, the latter now becomes more effective and functional for recording studio work purposes.

Functions of Notational Softwares
The following software outlined for notation include Finale, Sibelius, Mus score, Cakewalk and Cubase.

These softwares are used to facilitate music compositional scoring, storage, preservation and retrieval, automate music composition, visualizing and clarity of music scores, make music analysis easy to understand and to create sound synthesis. These softwares have no provision for voice recording but have capability to edit instrumental works of data already imputed in it. It can also playback such recordings since they are graphic symbols with waves.

Recordable Softwares and Their Functions
Music recordable software include Sonia, Flootyloops, Cubase, Reason propella head and Logic pro e.t.c. These ones have provisions for both receptions of musical symbols and voice waves, and can also edit by quantizing data imputed into it and playback such recordings as well. Both notational and recording softwares can regulate tempo, change of keys, musical instrument digital interface (MIDI) connectivity alike respectively.

Problems
The use of software technology was originally designed to accommodate the western compositional idiom therefore signs used for effects and other grace notes or melodic devices could not perform their roles when imputed and used playback command to hear them. Although it could observe ties, trills, turns, acciaccatura, appoggiatura and many more, this is not the case with the African idiom. For instance, exclamations, stamping of

feet, clapping of hands and laughter can only be explained with L.H and R.H. signifying left hand and Right hand. Similarly, L.L. and R.L. also signify left leg and right leg respectively. Others like vocal glissando or portamento will only show downwards falling arrow with the word portamento written beside the note. (See Adedeji, 2004)

Micro and Macro Rhythms and Pitches

In African performances, there exist micro and even macro rhythms and pitches in course of our music, but these are not reflected in the inputs from the design of the software and this possess a serious problem.

Complex Extemporization

Again, this is another problem the researcher found in the course of the work. Although the western imputations used (ad lib) to mean nearly close idea, however, that is better understood as coloratura, and if this is applied to African music, it greatly distorts the tonal inflections and sometimes the progressions also. In accordance with the above Nwankpa (2013) observes that "musical software technological devices have many deficiencies, some includes non-standard notations for micro and macro rhythms and pitches, glissando and portamento signs, hand claps, foot stamping and even laughter" (p. 15)

Music technology makes composition neat, clear and visible. The difference between using the music software and manual pen on paper notation cannot be overemphasized or even compared, because it comes out very neat, clear and visible and becomes very attractive to use.

Software Technology Increases Hasty didactic Process

Because of the quest to become a celebrity as societal yearnings is growing very fast, the quality for in-depth teaching and learning has been greatly compromised. Nowadays, students only read to pass not to understand. This short term memory is not sustainable for life, and can cause early lifetime job loss because of excessive cramming.

Software Technology Discourages Manual Learning of Instruments

The use of computer technology has in no small measure hindered the learning of live instruments. Composers just go ahead to input anything believing that the end justifies the means. This menace if not aborted or checked will cause more harm than good to the music industry at large. No wonder, Blakeslee in Nwamara (1994) asserts thus:

> For the arts, technology thus offers means to accomplish artistic, scholarly, production, and performance goals. But the mere availability of technology cannot

> ensure a specific artistic result: the pencil in a student's hand ensures neither drawing or competency nor a competent drawing (p.129).

Software Technology Militating Against Live Performance

A survey of producers' operations drives home the conclusion that everything done in the studio is digitized. Dependably, the voice for now has not been falsely imitated; therefore its practice in music is naturally regulated, whereas the digitalized sound remains inferior to the live sound not withstanding how purified the editing and sharpness can be. Natural sounds remain purer. Albert (2013) has this to say, "Anyone who calls himself a musician must be able to do one of the following as he proposed the acronym WAP OR CAP meaning.

W or C - Write a play or Compose music
A - Analyze the play or composition
P - Perform the composition

Continuing further, he says music practice must be encompassing on these three for successful output. (p.173).

Software Technology Eliminates Thoughtful Imagination and Creativity

It is believed that the quality of a good composition depends on ones understanding of theory of music and its related techniques. The many arguments made by researchers about plentiful composers also have its much limitation bordering on quality. It is only in areas like song writing and contemporary music of today or hymns and chant tunes that we have vast number of compositions that may meet standard. Orchestral music, wind band music, film music, country classics and a few other genres still suffer setback because they seem to fall short of thoughtful imaginative skills and creativity is required, situating their arguments on artistic freedom. It is in light of this that Achinivu (1979) in Nutting says,

> I am thinking of the composer in the sense that Mr. Akpabot, Dr. Echezona, Fela Sowande and Mr. Bankole are composers: That is, men who consciously plan in advance the music they want to hear, and who are fully conscious intellectually of the qualities and relations of the sound which they choose to hear. To be a composer in this sense, one has to have theory of music (p.115).

Software Technology Creates Unemployment

Referring to early musical periods in the days of King Esther Harzy and Haydn, one would notice that the patronage system diversified the monopoly of church musicians. The employment of (Kapeil) chapel masters who served as cantoris or cantors in the courts of kings of many private chapels enhanced the production of skillfully well trained and quality performers on stage. Maybe the reason could be that technology have not crept in those days, therefore, everything have to be done manually including entertainment and with music. Today, everything has become digital and electronically or technologically friendly is the in thing. It is observed that some music practitioners argue that our instrument today is the digital world, however, their thoughts may not overwhelm on the vocalized music which cannot be impersonated anyway. In fact, the worrisome situation now is the absence of live band or instrumentalist against C.D. recorded instrumentals being used for public and stage performances calls for doubt and worries to serious minded audience.

Software Technology Poses Treat of Virus

Virus attack could be one dreadful uncertainty that can mar composer's efforts. Although, sometimes the signals are evident and the user can take precaution, it is said that to be forewarned is to be fore armed; however, this accident poses a great danger for loss of already composed music files in the computer.

Watson in Onuora-Oguno (2001) relates thus:

> A virus consists of a set of instructions that attaches itself to other computer programs, usually in the computer's operating system, and becomes part of them. In most cases, the corrupted programs continue to perform their intend functions but surreptitiously execute the virus's instructions as well. A virus is usually designed to execute when it is loaded into a computer's memory. Upon execution the virus instructs its host program to copy the viral code into, or "infect" any member of other programs and files stored in the computer (p.20)

However, the installation of anti-virus can meaningfully save someone from this unwanted accident but other related matters include hacking and so on

Prospects

Software Technology Encourages Economic Advantage of Time and its Management

In the past, a composer after finalizing his work will rely on rehearsals by a choral group to do a testrun of the music, bearing in mind the vocal sootiness of the work, in relation to pitches and rhythm both in the melody and harmony respectively. The composer will also observe the contrast of both chorus and accompaniment parts if included, whereas contrapuntal sections and modulatory passages of interest must also be checked, before distribution can be made to others for use. Nowadays, the playback device of the software has facilitated speedy readiness to use new and fresh compositions.

Software Technology enhances Inspiration and High Persuasion

The ease in quick use of newly ready compositions now causes high inspiration and persuasion of students and amateurs to arouse their interest to write more by encouraging themselves. Once the play back has been done and it sounds interesting irrespective of standard (academic) composition rules, they produce their music for the public usage, although, this speed creates wealth but poses challenge to creativity.

Software Technology and Cloud (Email) Preservation

The risk of loss of soft copy of compositions is nearly unpredictable because of computer crash and virus attacks. Therefore, a prevention method for this kind of unwanted situation will be the storage of such soft copy(ies) of compositions in an email box or even in the span for retrieval anywhere in the world provided the software used in notating that work can be retrieved at the said location. Again, the compositions can be converted to post document format (PDF), to safeguard for easy retrieval even with micro-soft word software.

Composing For Cultural Sustainability

In time past, our folk music may only be best preserved en mass through motion visual media. This significantly made the African Art music dissemination impaired in terms of print media documentation. These (African) indigenous cultural heritage of music practices may have gone into extinction just like our languages are today because of post-colonial influence on the African arts.

Many practitioners teach our indigenous music through rote learning methods. The rote learning methods become evident and preferred because of their inability to either sight-sing or score their music since the complexity in the rhythms is challenging to be manually notated. In any case, many performers are not proficient in teaching these songs if notated. Bowen in Sunday-Kanu (1994) reveals thus:

> The musical computer enables us to experience the creation of new music ideas and assist with the teaching of traditional music concepts. For centuries, only few fortunate humans were able to compose their work and hear it performed. For others, being musical interested meant performing with works of earlier composers or turning on a cassette or CD player. Now the whole concept of music for the masses has been moved from "playback" or "reproduction only" mode to "create it" or "interactive" mode. Bowen (p.5).

In the light of the above, it is observed that the playback interactive modes will make for good rehearsals for complex rhythm study and appreciation assisting even the composer to prepare himself to further teach his group in matters of rhythm, tempo, accuracy or cue in and outs plus short leading phrases (SLP), of call and responses and other aesthetics of expressions.

Software Devices as an Enhancement for Instrumental Composite Colouration

This is a great prospect to composing, especially instrumental music. Many decades ago, the availability of orchestral instruments was almost a mirage. This has caused a false illusion to many composers who believed that writing for the symphony orchestra is impossible especially for blacks or African indigenes. But for the interactive use of computer today, composers have done much of experiment. Although, it may be seen as trial and error success, however, it is said that the end justifies the means.
It is in line with this thinking that Robin in Sunday-Kanu (1995) opines thus:

> Music has always been the art form of technology born of the primal need for self-expression, music consistency draw on the prevailing resources to give flight to the thought and feeling. Musicians now have a symbol of abundance of musical sound with which to express themselves and there was never a time in the history with such aural landscape for listeners to enjoy. This is a great time to explore the world of music and computer (p.3).

X-raying the quote above, one will observe that some genres of school music composition like wind band music and film music genres like Art/plot tune, signature tunes or other sound effects are clear cuts for composition majors with the interactive technological devices like, the desktop; and laptop computers, Ipad, tablets or phones. The complexity and dexterity of these genres of music are only simply achievable with the devices mentioned above to manage time spent in notation and less reliance of assembling of instruments for colour combinations.

Software Technology Aides Easy and Successful Analysis

Nowadays, many music theorists are propounding diverse analytical styles and methods to compositions. While one remembers the Allan Forte and Shriners analytical method of the Western origin, their African contemporaries are not left out in global recognition. Agatha Onwuekwe, Onyee Nwankpa, Christian Onyeji, John Kwabena Nketia, Kofie Agawu and Bode Omojola, to mention a few are some in this outstanding rankings. In line with the Google's definition of computer captured under keywords in this paper, one realizes that the computer can manipulate both text and graphics alike perfectly in its technological configurations. Yet, there exist Word Data-based Processing software like the Microsoft, Excel, Power Point and so on, while the Graphic data (based) Processing like Finale, Sibelius, Mus score, Cakewalk, Cubase, Flootyloops and Archicad mainly used by Architects also exist. These graphic designed software alongside with the word processing software are used interchangeably to standardized music analysis. This is very possible because they can be converted to PDF files for wider accessibility.

Software Technology as an Aid to Sound Synthesis

The availability of the computer now gives the composer and performer especially during recording a wide and varied sound synergy to play with to realize diverse expressions. Hall (1980) stated that "The development of integrated-circuit electronics in the 1960s, has made electronic music synthesizers widely available in the 1970s, and a great quantity and variety of music is now being produced with them" (p. 210)

Software Technology as a Tool for Evaluating the Student or Amateur Composer

In recent times, an in-depth study is ongoing to incorporate an automated plugin that can recognize student's fault during teaching and learning. This device, when completed, will now make the problems of using the computer to compose less to the student because, instrumental compass that have been exceeded will not accept further inputs for notations. Many other rules of harmonization like not doubling of thirds (3^{rd}) at initial learning process will be handled as the system may reject it. Parallel fifths (5th) and Octaves (8^{th}) will not be an exception amongst several others.

Software Technology and Easy Commercialization through Online Publishing

Script music and sales has come to stay, but this is easily accessible through the soft copies via the internet. It is, therefore, necessary that we key into this prospect to also distribute our heritage through our Art music scores. Notwithstanding, the subscriptions made before printing these scripts of scores from the internet will enlarge our revenues, make us online book authors like our Western counter parts and will also publicize our products

globally. On the other hand, it also encourages free import stamp duties and other related revenues as against importation of hard paper books.

Conclusion

Having discussed the advantages and disadvantages of composing music with computer devices, it is necessary to advice beyond all human risk imaginations that the ratio of percentage is unquantifiable. The advantages are much more than the disadvantages. It is also advantageous to send the soft copies to air to be saved in the cloud via email. This way, the intellectual and creative properties will last for many years if not for life.

Suggestions

It is said that:

- The devil you know is preferable in association to the Angel you don't know.
- The journey of a thousand miles begins with a step.
- The fear of the unknown causes procrastination.
- Procrastination itself causes failure.

Therefore the earlier faster and seriously we incorporate technology composition, the smarter, quicker and easier we make voluminous results in return for both cultural sustainability, entrepreneurial realization, economic boost and sustainability, global recognition, human capital and power development and technological flexibility on the whole, to meet up with best global practices in professionalization respectively.

Recommendations

In line with the suggestion above, we will need to

1. Build a digital composition centre
2. Create a digital composition classroom
3. Allow for Musical Instrument Digital Interface (MIDI) plugin for easy, fast, effective and massive output and productions.
4. Write to the software development companies to incorporate African signs to enhance cultural functionality that can incorporate music of other world culture for global inclusion.
5. Africans can also design and develop software that will possibly have the capacity of solving the problems.

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