Benefit of Upskilling in Information and Communication Technology (ICT) Knowledge amongst Music Educators

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Abstract

The study sought to find out the benefits of upskilling in ICT amongst music educators. It aimed at surveying the use of ICT for teaching music and exploring the instructional prospects for computer technology usage in music amongst music educators. The benefit of ICT to music cannot be over flogged as it improves teaching and learning experiences like the use of interactive whiteboard to bring realism to class. The study employed Rogers' Diffusion theory and descriptive survey research method. Data was collected from the respondents using observation. The study concludes that teachers who are current in upskilling themselves should be granted access to technologically improved classes. It is however envisioned that increasing access and coherent computer technology initiatives will be vital for the teaching of music amongst music Educators.

Introduction

Teaching has evolved globally due to technological advancement. Teaching usually used to be based on the teacher as the source of knowledge while the students as the recipient; but the advancement of technology have brought a shift from teacher centred learning to student centred learning, students can now learn

at their own pace through being ICT compliant.The application of Information and Communication Technology (ICT) in sectors of human endeavour including education seems to be a paradigm shift from the normal traditional concepts of operations towards a more refined and transformational processes with significant enthusiasm. Social, political, religious, economic, and technological changes of the past decades make education and training for all and sundry more crucial than ever. However, educational systems, to different degrees worldwide, are struggling to afford educational opportunities for all, to provide their human resource with the necessary knowledge and skills for capacity building in evolving economies and sophisticated living environments, and to prepare citizens for lifelong learning (Soloway& Pryor, 1996).

Music educators and learners alike may not be fully aware of the possibility, let alone effectiveness, of using computer for the dissemination of information and development of skills that facilitate learning in music (Okonkwo, 2008, pp38-39). Going by the submission, the study sees the need for relating the benefit of upskilling in ICT skills amongst music educators.

According to the Royal Conservatory Music (2018), technology allows the teacher to provide supplementary materials that can help support students. Some of the methods can take the form of online conferencing, instructional videos, and the ability for students to upload performances and receive feedback. They note further that even though it may be intimidating for any teacher to stay updated on current platforms in this world of rapid technological developments. The use of technology should still be encouraged because when technology is used properly, it can be a valuable asset to any teaching practice.

In a similar direction, Akande (2020) emphasizes the importance of the use of technology in schools when he states that technology has changed the needs of education as well as the potential processes. He states that: “messages or information (lesson content, videos and pictures) can be communicated through a flash share, Bluetooth, WhatsApp and other means” (p. 173).Thesemethods make dissemination of information easy and less cumbersome thereby giving room for class time management.

Going by the submissions above, the music educators and students alike are the benefactors of ICT Knowledge but the onus lies on the music educator to embrace the opportunities with ICT knowledge in other to remain relevant, competent in the field. From all indications the students and teachers stands a chance to benefit from the change.

Statement of Objectives

The objectives set for the study were to:

1 ascertain how preparedis the music teachers Knowledge in ICT

2 determine the music teachers' usage of ICT knowledge

Research Questions

The following research questions were formulated to guide the study:

1 What are the necessary preparation needed by a music teacher in the knowledge of (ICT)

2 How often do the music teachers apply (ICT) knowledge in teaching

Statement of Problem

Learning is becoming technological globally, by this, are the music educators' knowledge in the field competent to meet with global technological trends (ICT) in teaching? Marcellino (1996) contends that music technology has brought challenges to the traditional concepts of art, and the very elements of music making. From the recent happenings after the pandemic there is a paradigm shift from the one on one system of learning to video conferencing, use of social media handles, software's for composing music like Finale, Sibelius, MIDI and so forth. also from observation the new normal after covid-19 pandemic have greatly affected many schools in Nigeria, several schools could not cope with online learning either because they were not prepared or they did not believe it would have such effect on them or because music educators shy away and do not embrace these advances made by (ICT). The new normal trend in the society requires that a teacher have the ability to utilize (ICT) knowledge in other for efficiency and effective delivery of lectures, these could be seen in the use of smart boards, computer in composition, application like zoom, google meet, social media handles and music technological appliances which the educator could leverage on to sending assignments, class exercises and more.

Methodology

The study is an opinion paper, which adopted descriptive research design but dwelt on the subset which is historical method. Mike (1999) explains that historical method can be regarded as a systematic and objective reconstruction of the past through location; evaluation and synthesis of data in order to establish facts and arrive at verifiable conclusions. He further affirms that the rational for historical research in education is to enable us understand the past happenings and the present and to predict the future. With concrete evidence of the past happenings and the present, one could decipher what would be needed by music educators in other to stay abreast with the moving trend of globalization. This method would help the researcher to carrying out her data to a reasonable conclusion on the subject matter "Benefits of upskilling in (ICT) knowledge amongst music educators".

Review of Related Literature

Information and Communication Technology (ICT)

Odachi (2009) opined that "information and communication technology is arange of technology for gathering, storing, retrieving, processing, analysing and transmitting information" (p. 64).ICT is a major wave in speed transfer of knowledge it equally eases the learner from the stress of class routine, attendance and thereby enhances the music teachers class presentation of a subject matter.

According to Crawford (2009)"modern music technology comprises such items as computers, the internet, synthesizers, MIDI (Musical Instrument Digital Interface), drum machines, sound modules, MP3 players, minidisk players and more" (p. 473). These types could help in the teaching and learning of listening/aural skills composition, transcription and analysis.

mini-disk

Byrne and MacDonald (2002) state that music technology in the music classroom includes electronic keyboards, sound modules, multi-track recorders, synthesisers, hardware sequencers, and a wide range of software applications that allow sequencing, notation, editing and recording through MIDI-based and acoustic means. From the submission above, there is a need of inculcating music

media and technology as a course of study for both the music teacher and the students to archive the global trends of educational technology

Olorunsogo (2009) also itemized modern technologies including hardware and software for music that are in use today which include music players like iPods, VCD MP3, DVD, CD-ROM, projectors and software for music production like Cakewalk, Cubase, and Sawpro as well as software for writing music like the Finale, Sibelius and so on.

Going by the forgoing, the emergence of these ICT tools in music education had brought about a paradigm shift in the music world, most students are motivated to do music when aided with these tools, but a good number of music educators are yet to upskill in this knowledge.

Music Teachers' Education

According to Cremin in Chazan (2022) "education is the deliberate, systematic, and sustained effort to transmit, provoke or acquire knowledge, values, attitudes, skills or sensibilities as well as any learning that results from the effort" (p. 27).This is in agreement with submission of Adesemowo and Sotonade (2022), education is defined as "the act or process of educating or applying discipline on the mind or a process of character training" (p. 1).

The desired results to be acquired through education would require efforts from both the music educators and the students.Brown (2013) refers to music education as a type of education that enhances natural abilities such as language development, sound and word decoding, and word recognition, all of which are important for a child's development. The formative life of a child cannot be successful without music knowledge/application. According to Modeme and Adeogun (2020)"Music education is an area of study which concerns itself with the teaching and learning of music. It impresses on all domains of the teaching and learning process, which includes the cognitive domain which emphasizes knowledge acquisition; the affective domain which anchors on emotional appreciation and sensitivity; and the psychomotor domain which lays emphasis on the developmental of physical skills".(p. 27). Music affects the wholesome

behaviour of the students, and further enhances the capacity development of the mind.

Students and infrastructure in learning music

Concina (2015) also states that music education has some definite structures which make it different from other fields of academics. Therefore, in the discipline of music, the teacher's and the student's cognitive, motivational and psychological characteristics affect the teaching learning process.Learning to this point is said to be mediated by tools and signs; these tools are said to be created by the culture of the people in which the environment places greater role. Computer technology as a tool changes the culture. The purpose of the tool is to meet the goals of the participants in the culture and thereby transforming their participation in the culture (Duffy & Cunningham, 1996).

From the above submission of what learning entails, Gardner (1991), observed that many students do not actually understand or find meaning in what they learn. To some, education becomes nothing more than drill and practice or drill and response to routine tasks without relevance for the materials that students are expected to learn… Gardner stated that Psychologists such as Piaget believed that the learner must be active to be engaged in real learning. From all indications, active learning is regarded as the ability of the learner to interact, participate by connecting to a new knowledge with prior understanding as a behavioural change which is the affirmation of learning through organised objectives or experiences.

Music teachers' evolvement and ICT

According to Gorbunova and Hiner (2019), there are now changes in music educators' work due to the use of digital educational resources, the widespread adoption of network interaction techniques and methods, and modern music computer technologies (MCT).Notable among scholars who have researched the use of technologies in music education are Goncharova and Gorbunova (2020), through their studies where able to mention teaching materials in music teaching and learning through the use of mobile technologies in music theoretical courses. They noted, among many other things:

> that the use of mobile technologies allows teachers to organize their teaching activities (create a portfolio or a website), create an environment for remote support for learners (virtual classroom with assignments, tests, etc.), change the principles of classwork and homework through mobile applications and by making training programs personal and individual, adapted to the needs of each student. (p. 2)

With the evolution and upskilling in music media and technology, the teachers' work is meant to be stress free with the of use ofmusic software, MIDI, acoustic guitar and piano, few teachers' who have acquired ICT knowledge attest to the positive effect of using it, it is cost efficient, it helps for proper grasp of the subject matter.In the light of this study Wall, k Higgins, S and Smith, H. (2005). Observed that:

> A study of primary pupils' responses to aspects of ICT found that they believed that Interactive White Boards made them think more deeply about their learning, that is, there was a metacognitive impact. They provided real, concrete examples to illustrate or stimulate discussion points, facilitated remembering and helped them to concentrate. In other words, the pupils thought that the boards helped teachers explain concepts more effectively (p.41)

Going by the above submission, realism is brought to the class room with the use of Interactive White Board, which also fosters insightful and interactive learning with the happenings outside the class room. No matter how complex a concept might look, with the use of Interactive White Board complex concepts are simplified.



Figure 1: Interactive Whiteboard in Music Classroom
Source: https://scholarlyoa.com/wp-content/uploads/2020/03/Interactive-WhiteBoards768x512.jpg

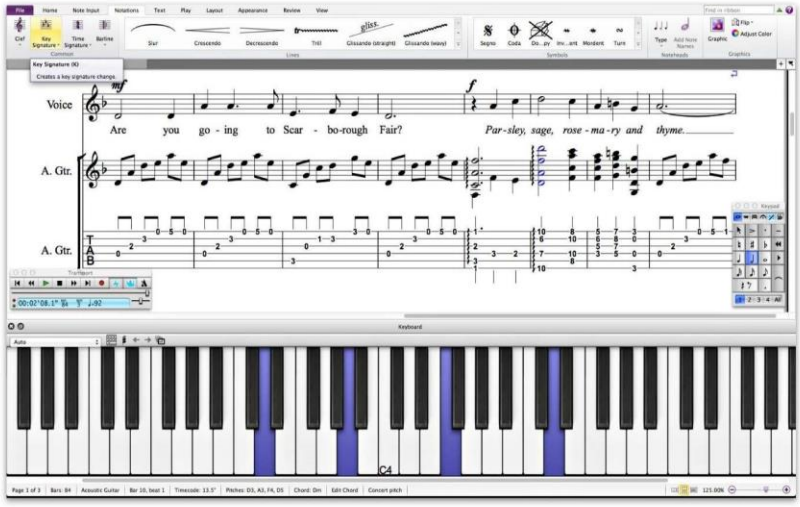


Figure 2: Music Composition Software: Sibelius
Source: https://rekkerd.org/img/201205/SibeliusFirst.jpg

Challenges with ICT usage

Waddell and Williamon (2019) note that "the expansion of technology in the twenty-first century is revolutionizing the domain of music, where technology affects musical creation, production, expression, dissemination, promotion, and consumption" (p. 1). Going by the submission, musical creation of this time is not unique in terms of quality, although knowledge of music is a plus to music educators who is upskilled in music and media technology; although those who are not musically inclined still do well with the ICT devices in music, the music educator without the knowledge of ICT would not contribute to the modern trend. Maharaj and Gill (2021) also note that technology in music education is an essential part of a contemporary approach to music learning as students today, are digitally inclined having grown up using computers, the internet, video games, iPads and various computer applications.Using the traditional approach to teaching and learning would end up demotivating the music students who are used to ICT tools that could aid efficient teaching.

Benefits of ICT to the teacher and students

According to the Cambridge Dictionary as cited in Padmaja & Mukul (2022) upskilling is seen as "the process of learning new skills or teaching workers new skills". going by Padmaja & Mukul (2022) upskilling denotes the process of acquiring new skills or imparting new skills to workers. Given the need to remain relevant, efficient, effective, and impactful in the rapidly evolving field of music education, it is imperative for educators to engage in continuous upskilling. This is especially necessary when working with technologically driven students who demand innovative and adaptive approaches to music education. By embracing upskilling, music educators can improve their knowledge base and skills, providing them with a competitive edge in their field.

Swain and Pearson (2002) revealed that teachers and students must be educated to use the computer as a productivity tool, as well as a tool for learning, research, networking, collaboration, telecommunications, and problem-solving. Abuse is inevitable when the reason for using the computer is compromised. Whatever one does whether in playing video games, the type of games should have music incorporated. In a similar view Gilbert (2015) notes that technology used in music settings can increase student motivation, promote higher levels of confidence, and

allow for more individualized learning among students. True to the fact submitted, most student learn best without pressure at their own pace which is aided by ICT.
According to the Royal Conservatory Music (2018),

> technology allows the teacher to provide supplementary materials that can help support students. Some of the methods can take the form of online conferencing, instructional videos, and the ability for students to upload performances and receive feedback. They note further that even though it may be intimidating for any teacher to stay updated on current platforms in this world of rapid technological developments.

Therefore, the use of technology should still be encouraged because when technology is used properly, it can be a valuable asset to any teaching practice.
In perspective, the following have been identified by researchers as benefits of upskilling in ICT knowledge amongst music educators and students:

- Technology aids efficiency in classroom time management
- The students/learners are empowered to find their own answers
- Links to personalization and innovation
- The ability for students to compose in styles
- Students study at their own pace which fosters creativity without pressure
- Improvements in the quality of presentation and recording
- A focus on creativity not inhibited by lack of playing skills
- Improved teaching and learning
- Instructional repertoire is expanded allowing opportunities for multimedia and interactivity that are impossible with more traditional instructional techniques.
- Gives access to composition for those without formal theoretical or practical music skills.
- Allows the means to perform music that would otherwise lie beyond students‟ capabilities
- Technology gives students room for feedback to music educators without restrictions in location.

- Scoring of music with Sibelius software could aid performance of a piece in parts for a choir without looking for one.

Theoretical Framework

The theoretical framework for the study hinges on diffusion theory by Rodgers and Rogers (1962) and cited by Malachi (2007) also supplemented by Operant conditioning theory by B. F Skinner (1968) in establishing the benefits of upskilling in (ICT) knowledge amongst music educators. The theory of Diffusion advanced by Rodgers and Rodgers (1962) as cited by Malachi (2007) states that: "diffusion is the spread of a new idea from its source of invention or creation to its ultimate users or adopters" (p.15). Going by the theory of diffusion one could see that covid-19 pandemic gave rise to the spread of new ideas which should be adopted as a new normal that is; the use of (ICT) in technology in teaching/learning by music educators. Operant conditioning theory on the other hand advanced by skinner (1968) as cited by Malachi stipulates that behaviour is learned as a result of reinforcement. When the government or employers reward the music educators, there would be increase desire to growing and seeking for knowledge.

Conclusion

Teachers who are current in upskilling themselves should be granted access to technologically improved classes. Education is about improved learning thus; every music educator should strive to embrace this new normal of learning.

The students stand in a better chance to know the current trends, thus the music educator should be humble to enquire/acquire this new skill for improved class learning and teaching.

There are so many benefits in upskilling in ICT that music educators should not allow the challenges faced to debar it's use.

Recommendation

1. That music teachers should update themselves with the knowledge and skill to use modern technology for music classes.
2. Educators should strive to embrace these new skills so as not to left behind from global trend
3. Music educators should see the positive impact of upskilling in ICT as it improves teaching and learning

4. Heads of department should make workshops/ symposiums available in other to ensure continual growth amongst music educators
5. Modern technological gadgets should be encouraged for class use often times in other to gain efficiency.

References

Adesemowo, P. O., & Sotonade O. A. (2022). The meaning and scope of education. In P. O. Adesemowo (Ed.), Basic of education: The meaning and scope of education (pp. 1-9).

Akande, S. O. (2020). Perception of ICT use in teaching and learning of music in selected secondary schools in Ibadan, Nigeria. *Journal of applied Information, Science and Technology, 13*(2), 171-178.

Brown, L. L.(2013). The benefits of music education. Retrieved from https://www.kstate.edu/musiceducation/eportfolio/rcline/TheWonderful World of Music/Blog/Entries.

Byrne, C. & Macdonald, R. (2002). The use of information and communication technology (ICT) in the Scottish music curriculum: A focus group investigation of themes and issues. Music Education Research, 4(2), 263-273.

Chazan, B. (2022). What is education. In B. Chazan, Principles and Pedagogies in Jewish Education (pp. 13-21). doi:https://doi.org/10.1007/978-3-030-83925-33

Concina, E. (2015). Music education and effective teaching: Perspectives from a critical review. *Literacy Information and Computer Education Journal (LICEJ), 6*(2), 1332-1336.

Crawford, R. (2009). Secondary school music education: A case study in adapting to ICT resource limitations. *Australian Journal of Educational Technology, 25*(4), 471-488.

Duffy, T. M. & Cunningham, D. J. (1996). *Constructivism: Implications for the design and delivery of instruction.* In D. H. Jonassen (Ed.), Educational communications and technology (pp. 170-199). New York: Simon & Schuster Macmillan Education, 32 (1): 30-43 e705.doi:http://dx.doi.org/10.20511/pyr2020.v8nSPE3.705

Gardner, H. (1991). Frames of mind. New York: Basic Books. Gateway to creating an inclusive learning environment", *The Journal of Economic*

Gilbert, A. D. (2015). An exploration of the use of and the attitudes toward technology in first year instrumental music. Student Research, Creative Activity, and Performance - School of Music, 79, 1-196.

Goncharova, M. S., &Gorbunova, I. B. (2020). Mobile technologies in the process of teaching music theory. PropósitosyRepresentaciones, 8 (SPE3),

Gorbunova, I., &Hiner, H. (2019). Music computer technologies and interactive systems of education in digital age school. In O. D. (Ed.), Proceedings of the International Conference Communicative Strategies of Information Society, (pp. 124-128).

Irele, A. O. (2022). Digital integration into the Nigerian educational system: Challenges and prospects. *Texila International Journal of Academic research, 1-7*.

Maharaj, A., & Gill, A. (2021). Technology in music education. Retrieved from https://www.researchgate.net/publication/344927415

Malachi D. (2007), *A survey of computer usage in Secondary School*. Nairobi Kenya; Unpublished thesis

Mike A. M. (1999). *Fundamentals of educational research*. Versatile printers, 5, 70-71

Modeme, E. &Adeogun, A. O. (2020). Appraising the extent of digital divide between music teachers and students in Anambra State secondary schools, *Nigeria. International Journal of Music Studies, 2*(1), 26-43.

Odachi, G. (2009). Introduction to information and communication technology (ICT). In E.N. Nwajiobi and I. Osegbo (Eds). Computer applications and operations. West and Solomon Publishing Coy. Ltd.

Okonkwo, V. N. (2008). ICT and Music Education: The New Path Music Enthusiast in the Nigerian Society. *Journal of Women in Colleges of Education (JOWICE) 10 (1),* 36-38.

Olorunsogo, A. (2009). The advancement of computer music: A perspective for music education in Nigeria. *Journal of the Association of Nigerian Musicologists (JANIM) Special edition.*

Padmaja, V. &Mukul, Kumar. (2022). Upskilling and Reskilling in the Digital Age the Way Forward for Higher Educational Institutions.

Soloway, E.,& Pryor, A. (1996). The next generation in human-computer interaction. *Communications of the ACM, 39(4),* 6-18.

The Royal Conservatory of Music. (2018). The important role of technology in music education. Retrieved May 28, 2023, from https://www.rcmusic.com/about-us/news/the-importantrole-of-technology-in-music-education

Waddell, G.,&Williamon, A. (2019). *Technology use and attitudes in music Learning*. Frontiers in ICT. doi:https://doi.org/10.3389/fict.2019.00011.