Perceptions of Music Educators on ICT use in Teaching and Learning of Music in Selected Secondary Schools in Lagos, Nigeria

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Abstract

This study investigates the perceptions of music educators regarding the use of Information and Communication Technology (ICT) in the teaching and learning of music in selected secondary schools in Lagos, Nigeria. The primary objective was to examine the perceived benefits, ease of use, and challenges associated with the integration of ICT in music education. The study utilized a quantitative method. The findings reveal that a significant majority of educators perceive ICT as a valuable tool in enhancing music lessons, making them more engaging, interactive, and effective in clarifying musical concepts. ICT was also found to support students' independent learning, promote better time management in classrooms, and provide lasting memory retention of musical terms and ideas. Moreover, educators noted the potential of ICT in musical composition and fostering student participation in the classroom. However, the study also identifies several challenges in the use of ICT, including technical issues such as frequent errors, unreliable power supply, and the difficulty and cost of maintaining ICT equipment. These barriers were seen as impediments to the consistent and effective use of technology in music education. In conclusion, while music educators in Lagos acknowledge the positive impact of ICT on music teaching and learning, there is a clear need for improved infrastructure, reliable power supply, and ongoing professional development to help educators effectively integrate ICT into their teaching practices. The findings of this study provide crucial insights that could inform policies aimed at enhancing ICT adoption in music education, ultimately improving the quality of teaching and learning in secondary schools across Lagos, Nigeria

Keywords: Perceptions, Music Educators**,** ICT Use, Teaching and Learning, Music

Introduction

Technology used to create, transmit, store, share, or exchange information is referred to as information communication technology. Radio, television, video, DVD, satellite systems, telephones (both landline and cell phones), computer and network hardware and software, and the equipment and services related to these technologies, like video, are all included in this broad definition of ICT. Other technologies that are included include video conferencing and electronic mail. (UNESCO, 2006). Technology has transformed our perception of the world and become essential tools. It is impossible to downplay the importance of information and communication technology in both education and society at large. ICT is a revolution, according to Bandele (2006), that encompasses the use of computers, the internet, and other telecommunications technologies in all facets of human endeavor. It is believed that teaching and learning are human endeavors that necessitate dynamic and efficient communication between the instructor and the pupil. The pervasive influence of ICT around the world has undoubtedly had an impact on the field of education. ICTs are becoming more and more crucial to society's ability to generate, access, adopt, and use information, according to Aribisala (2006).

However, because of their capacity to transmit the learning of musical knowledge, they are being hailed as instruments for the post-industrial era and the cornerstones of the knowledge economy. Olorunsola (2007) emphasized the significance of ICT use in schools and proposed that ICT has been used to meet educational needs, altering both the educational needs and potential processes. Flash sharing, Bluetooth, WhatsApp, and other platforms can be used to transmit messages or information (lesson content, videos, and images). This demonstrates how the use of ICT in education has improved instruction and is a significant change from the days when a teacher had to rely on charts, lesson notes, and drawings on cardboard or plain paper to deliver a lesson.

ICT is a crucial component of educational administration because its use increases productivity and efficiency in institutions, leading to the development of a wide range of tools to support and improve teachers' pedagogical efforts. The teacher no longer stands in front of the class and imparts knowledge without the students' active and sufficient participation; teaching and learning have evolved beyond this (Ajayi, 2008).The teacher can ensure that students actively participate in the teaching and learning process, push them beyond the boundaries of traditional learning, and create essential environments for experimentation and exploration with the help of ICT. This recent development is a clear sign that the days of teachers not using ICT are over.

Statement of the Problem

The integration of Information and Communication Technology (ICT) in education has been recognized globally as a critical factor in improving teaching and learning outcomes. However, the extent to which ICT is being utilized in specialized fields such as music education remains underexplored, particularly in the context of secondary schools in Lagos, Nigeria. While ICT has the potential to enhance the teaching and learning of music through tools such as music software, digital instruments, and online learning platforms, there is limited research on how music educators perceive its effectiveness and practical challenges in its implementation.

In Lagos, Nigeria, a city known for its rich cultural heritage and diverse educational system, the integration of ICT in music education presents both opportunities and challenges. Despite the growing awareness of ICT's potential, music educators' attitudes, knowledge, and perceived barriers toward incorporating technology into the classroom remain unclear. Factors such as access to resources, training, infrastructure, and the cultural context of music education in Nigeria may influence educators' perceptions and willingness to adopt ICT in their teaching practices.

This study seeks to examine the perceptions of music educators in selected secondary schools in Lagos, Nigeria, on the use of ICT in the teaching and learning of music. The research will focus on understanding the benefits, challenges, and barriers music educators face in utilizing ICT tools, as well as how these perceptions influence their teaching strategies and students' learning experiences in music education.

Objectives of the Study

The purpose of this study was to investigate the use of ICT in the teaching and learning of music. Specifically, the study aimed to:

1. explore the perceived benefits of using ICT in the teaching and learning of music and
2. identify the perceived ease of use and challenges associated with incorporating ICT in music education.

Significance of the Study

The findings will provide valuable insights into how music educators perceive the integration of ICT in their teaching. By identifying the benefits and challenges of ICT use, the study will help inform effective teaching practices and highlight ways to enhance music instruction through technology. As the Nigerian educational system increasingly embraces technology, the study's outcomes could serve as a foundation for policy recommendations related to the integration of ICT in schools. The study may guide policymakers and educational authorities in designing professional development programs, infrastructure upgrades, and curriculum reforms aimed at improving ICT adoption in music education. By exploring the perceived ease of use and challenges of ICT, the study will highlight the need for targeted teacher training and professional development. Music educators will be better equipped to incorporate ICT into their teaching if they are provided with the appropriate resources and training programs tailored to their needs. Understanding how ICT impacts music teaching could lead to more engaging and interactive learning experiences for students. This study can help identify ICT tools and methods that enhance students' learning outcomes, making music education more accessible and relevant to the digital age.

Methodology

This study employed a descriptive survey design. For this study, data from both primary and secondary sources were used. A well-designed, fifteen-item questionnaire with a four-point rating system was used for the primary data. In Lagos, Nigeria, two hundred music students and one hundred music teachers from particular public and private secondary schools were given questionnaires, all of which were returned.

The internet, books, journals, and magazines were the sources of the secondary data.

Descriptive statistical measures were used for the analysis of the data.

Theoretical Framework

The study employed Constructivism theory. Constructivism (Vygotsky, 1978; Piaget, 1950) is an educational theory that posits that learners construct their own understanding and knowledge of the world through experiences and reflection. In the context of music education, constructivist principles emphasize the active role of students in learning, using ICT to engage in creative, hands-on activities, exploration, and problem-solving.

Constructivist learning in music education suggests that ICT can foster deeper learning through interactive and collaborative tools that promote critical thinking, creativity, and self-expression. Educators' perceptions of how technology supports or hinders this process are crucial in determining the effectiveness of ICT integration in the classroom. This theory also highlights how technology can cater to different learning styles and create an environment where students actively participate in the learning process, rather than being passive recipients of information.

In this study, constructivism will help understand how music educators perceive ICT as a tool to foster student engagement, creativity, and deeper learning in music. It will also highlight the extent to which teachers view ICT as facilitating an interactive, student-centered classroom.

Teaching and Learning Music with ICT

Digital video, multimedia computers (such as laptops and notebooks), application software (such as Word processing, spreadsheets, and PowerPoint), the internet and intranet, digital libraries, and computer-mediated conferencing (such as audio conferencing, video text, and interactive video disk) are some examples of contemporary ICTS that offer dependable sources of interest for learning music, according to Mangaland (2009).Accordingly, ICT can help students and music educators save musical compositions, access earlier lessons, and share information like assignments online. Moreover, taking into account the ICT resources mentioned by Managaland (2009). For the purpose of music analysis, which enhances their subsequent performances, music students can record and replay their performances with the aid of a digital video camera. The digital video would be helpful in ensuring that rehearsals are flawless during the process of getting ready for a musical performance (Falodun, 2018).

Thus, ICT innovations support music education by first generating curiosity and enthusiasm for learning. Technology-enhanced instruction is perceived by students as engaging, relevant, engaging, and appealing (Beeland, 2002). To improve instruction, music teachers utilize Internet resources and music samples from iTunes or Windows Media Player (Nolan, 2009).

This highlights the usefulness of ICT in music education since it allows teachers to provide multiple examples that students can relate to during class, preventing a lesson from being just a discussion. The development of music software, including Finale, Smart Music, Notable, Sibelius, and other programs, is also noteworthy (Baker, 2007). These programs are resources for teaching harmony and composition in music. This gives the students the opportunity to hear their compositions and works in order to get a sense of their quality.

According to Richmond (2002), there are three general approaches to the use of computers and the Internet in the classroom: a. learning about computers and the Internet, where the ultimate goal is technological literacy; b. learning with computers and the Internet, where the technology helps students learn across the curriculum; and c. learning through computers and the Internet, which combines curriculum applications with the development of technological skills.

Prospects in the Application of ICT in Teaching and Learning of Music

Since it offers an alternative to the traditional teaching methods, information and communication technology has proven to be highly beneficial in the teaching and learning of music in schools. (Voogt, 2008; Voogt & Pelgrum, 2005; Voogt 2010; Voogt et al., 2013) ICT in education was supposed to change the teaching and learning process from a traditional instructional teacher-centered endeavor to a learner-centered approach with the learner coach actively involved. In addition, Anderson (2008) believes that ICT offers a different method of instruction than traditional classroom instruction. This allows each student to learn at their own pace and also gives music students the chance to review what they have learned in class. According to Miller and Glover (2010), teachers can end the lesson on time because of the saved materials made possible by ICT tools like Interactive Whiteboards, which relieve them of the burden of constantly rewriting on the board.

Anderson (2004) claims that the introduction of ICT has created learning opportunities that have transformed the way that education is delivered to a virtual setting. This indicates that ICT allows any student to learn at a time that works for them.

Importantly, ICTs give students and teachers of music the ability to access digital resources, such as digital libraries, for assignments, research materials, and course materials at any time and from any location (Bhattacharya & Sharma, 2007; Cholin, 2005). Given this assertion, music students can read widely in advance of the lesson because they have access to educational materials. The potential for interaction between music students and teachers is highlighted by the irreversible impact of ICT (Reed, 2001). This implies that music students can discuss topics like harmony and composition that are relevant to their musical compositions with their teachers. According to other researchers, using ICT in the classroom improves student learning and makes the most of their capacity for active learning (Finger & Trinidad, 2002; Jorge et al., 2003; Young, 2003; Jamieson-Procter et al., 2013). According to this perspective, active learning gives music students the chance to watch and listen to musical snippets, in contrast to the conventional method that solely uses cards and charts as teaching aids. For instance, if the sound of a composer's compositions is not perceived or felt by the ear, learning about them live can be dull. Additionally, if the vocalist's mouth shape or instrumental work allows it, pay attention to the guitarist's right finger placement.

Challenges

There are numerous obstacles that hinder the use of ICT in Nigerian secondary schools. Ojo (2005) claims that the corps of educators who are supposed to reform the Nigerian educational system experienced the "old" system without being exposed to ICT. Because teachers cannot give what they do

not have, this presents a significant obstacle to the use of ICT in music education. Teachers were not given the chance to learn ICT skills under the previous educational system, which had an impact on how lessons were delivered using ICT. According to (Haruna, 2005), ICT infrastructures, including electricity for the operation of ICT components and epileptic power supplies, are costly and out of reach for many private and public institutions. The lack of ICT resources in schools can be discouraging for many teachers, especially in the present day when some are working independently to develop their ICT skills. Lessons in schools with ICT facilities may be disrupted by the persistent problem of epileptic power supply. Other issues include the lack of sufficient trained labor for the construction, upkeep, and operation of ICT facilities to meet Nigeria's growing demand for ICT services; inadequate compensation for the underqualified ICT personnel, which keeps them out of Nigerian labor markets; the government's lack of full commitment to ICT development; and a lack of internet connectivity and facilities. Additionally, many teachers have a poor attitude toward computer literacy. Becta (2004) asserts that the lack of hardware, software, or other ICT materials in schools is not always the only reason why ICT resources are inaccessible. Poor resource organization, subpar hardware, inappropriate software, or a lack of personal access for teachers are just a few of the possible causes (Becta, 2004). According to Sicilia's study from 2005, one of the biggest obstacles for teachers is technical issues. Waiting for websites to load, not being able to connect to the Internet, printers not printing, broken computers, and teachers using outdated computers were some examples of these technical obstacles. "Technical obstacles hindered the lesson's seamless delivery or the activity's organic flow in the classroom" (Sicilia, 2005).

Note: SA=Strongly Agree; A=Agreed; SD=Strongly Disagree; D=Disagree

Table 1: Perceived Benefits of ICT use in Teaching and learning of Music

S/N	Items	SA	A	SD	D
1	ICT use adds excitement to music lessons.	70%	29%	0%	1%
2	Using ICT clarifies musical concepts.	70%	25%	2.5%	2.5%
3	ICT provides more examples for music students to learn from.	70%	30%	0%	0%
4	ICT may be used to teach all facets of music.	65%	25%	4%	6%

5	All aspects of Music can be taught with ICT	31%	64%	5%	0%
6	ICT use creates a persistent recollection of musical concepts and vocabulary.	85%	25%	0%	0%
7	Teachers can more efficiently manage their teaching time with the aid of ICT.	30%	59%	1%	0%
8	Students can learn independently or re-watch lectures with the aid of ICT.	65%	25%	10%	0%
9	Students can relate earlier lessons to the new ones with the aid of ICT.	80%	19%	1%	0%
10	ICT can be applied to the creation of music.	30%	68.5%	0%	1.5%
11	ICT use increases student engagement in the classroom.	78%	12%	5%	5%
12	When using ICT, technical issues cause music lessons to lag.	13%	70.%	0%	12.5%
13	ICT appliances are challenging and costly to maintain.	43%	32.5%	7%	17.5%
14	Interrupted power supply affects the use of the ICT in Classroom	70%	28%	0%	2%
15	ICT helps effective teaching of Music	80%	20%	0%	0%

Table 2: Perceived ease of use of ICTs for teaching and learning Music

S/N	Items	SA	A	SD	D
1	Not every student has access to a computer.	70%	23%	7%	1%
2	Not every educator is proficient with computers	65%	25%	5%	5%
3	A small percentage of teachers have access to computers	71%	29%	0%	0%
4	ICT can be used to teach all facets of music.	80%	10%	5%	5%

5	Teachers frequently use ICT in the classroom	30%	5%	65%	0%
6	Teachers are trained regularly on the use of ICT	25%	15%	60%	0%
7	ICT helps teachers to manage instruction time effectively	35%	64%	1%	0%
8	Teachers have access to internet	10%	15%	75%	0%
9	Every classroom has adequate ICT resources	15%	10%	25%	50%
10	Teachers can use personal computers	10%	10%	15%	65%
11	ICT devices like computers and projectors are costly to purchase and maintain.	74%	26%	0%	0%
12	The problem of epileptic power supplies the use of the ICT in Classroom	86%	12%	%	2%
13	Most Music teachers have no knowledge on the use of ICT	15%	5%	30%	50%

Discussion of Findings

This study aimed to investigate how ICT was used in a few secondary schools in Lagos State for music instruction and learning. Student engagement is one of the most crucial elements that influences both teaching and learning as well as students' motivation to learn. For example, they foster students' independence (Harlow, Cowie, & Heazlewood, 2010; Minor, 2013), and they have been shown to boost students' motivation and excitement (Schmid, 2006; Torff & Tirotta 2010; Wood, R., & Ashfield, J. (2008)).

According to the study, music teachers and students gain from using ICT in music lessons (tables 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10). This result supports Kwache's (2007) argument that the use of ICT improves and facilitates pedagogical activities and makes educational institutions and instruction more productive and efficient. The study found that factors like computer component availability, internet access, and high maintenance costs have an impact on ICT use in secondary schools in Nigeria (Tables 1, 2, 3, 6, 9, 12, 13, 14, and 15 of teachers' items). According to Hawkridge (2009), nations that have

incorporated technology into their curricula have reportedly invested a significant sum of money and resources in their projects. Purchasing an interactive whiteboard requires a significant financial outlay. Schools should make an effort to raise money.

A persistent issue that is harmful to all sectors, the epileptic power supply is a national phenomenon. The findings corroborate those of Yusuf (2005) and Ofodu (2007), who argued that erratic power supplies pose a significant barrier to ICT use across all industries. Weinstein (1989) asserts that when students' opinions are valued in the classroom, the instructor has access to data about their viewpoints and subjective experiences, which encourages the teacher to be more receptive to the educational, social, emotional, and physical needs of the students. Student engagement is the most significant factor influencing both teaching and learning as well as students' motivation to learn. Both students understand the difficulties and the scope of the interactive whiteboard's use.

Conclusion

The findings from this study provide valuable insights into the perceptions of music educators regarding the use of Information and Communication Technology (ICT) in the teaching and learning of music in selected secondary schools in Lagos, Nigeria. Overall, it is evident that music educators recognize the significant potential of ICT in enhancing music education. The majority of respondents agree that ICT makes music lessons more interesting, helps clarify musical concepts, and provides students with more examples to facilitate their learning. Furthermore, ICT is perceived as a useful tool for fostering student engagement, promoting independent learning, and facilitating better time management in the classroom. Music educators also acknowledge the lasting impact of ICT on students' retention of musical ideas and terms, as well as its potential to aid in music composition. The use of ICT was found to support students' ability to relate new lessons to previous ones, further enriching their learning experience. Notably, ICT is seen as a tool that can enhance students' participation and create a more interactive, engaging classroom environment.

However, the study also highlighted several challenges that hinder the effective use of ICT in music education. Technical issues, such as frequent errors and unreliable power supply, were identified as significant obstacles to the smooth integration of ICT in music lessons. Additionally, the difficulty and cost of maintaining ICT equipment were concerns for educators, suggesting that sustainable solutions need to be developed for ICT infrastructure in schools.

Despite these challenges, the overwhelming perception among music educators is that ICT can significantly enhance the teaching and learning of music. It is clear that, with the right support and infrastructure, ICT has the potential to transform music education in secondary schools in Lagos, Nigeria, making it more accessible, engaging, and effective for both teachers and students.

In conclusion, the study underscores the need for increased investment in ICT resources, teacher training, and improved technical support to address the challenges faced by music educators. With these measures in place, ICT could play a crucial role in advancing music education in Lagos, contributing to the development of a more

dynamic and forward-thinking educational system.

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