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# Need for ICT adoption in the teaching of Christian religious education at the basic education level in Nigeria

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**Abstract:** The acquisition of essential skills and knowledge is considered a primary aim of education to effectively navigate and succeed in various aspects of life. In modern times, the role involves proactive engagement in a society that is rich in information, where knowledge is considered the primary driver for the socio-cultural and politico-economic progress of nations. The teaching and learning of religious education has not fully utilized the abundant resources available in the Information and Communication Technologies (ICT) era, owing to several limitations. This study analyzed the current status of religious education during this era, as well as the factors that facilitate, inhibit or hinder the integration of ICT in Nigerian basic education level. The research provides recommendations for the effective integration of ICT initiatives in the teaching of Christian religious education within Nigerian basic education level in the contemporary era. The study employed quasi-experimental design. The research suggests that it would be beneficial for Nigerian basic education level to be equipped with contemporary computer laboratories by the appropriate authorities, for the benefit of both basic education level students and teachers.

**Keywords:** ICT; Christian religious education; pedagogy; basic-education; teaching; learning

## 1. Introduction

The merger of Information and Communication Technologies (ICT) in pedagogy serves as a means of imparting knowledge to students, thereby facilitating their acquisition of the necessary skills to thrive in the contemporary era. Blurton [1] defines “ICT as heterogeneous array of technological instruments and resources that are employed for the purposes of communication, information creation, dissemination, storage, and management”.

ICT’s are comprised of a synergistic amalgamation of physical components such as hardware, software, media, and delivery systems. Tinio [2] has identified “a range of technologies that include computers, the internet, broadcasting technologies (e.g., radio and television), and telephony. In contemporary times, a diverse range of smart phones and touch pads have been unveiled. The swift advancement of ICT and its associated technology over the past few decades has had a noteworthy influence on the transformation of various facets of teacher education. In contemporary times, scarcely any profession exists that does not necessitate the utilization of ICT in some capacity.” According to Aladejama [3], “ICT is significantly transforming our lifestyles, education, and employment. ICTs exert a substantial influence on various domains of human endeavor. Numerous studies have demonstrated the advantages of a population equipped with ICT in enhancing the standard of education.” According to Davis and Tearle [4], “the utilization of technology in education has the potential

to enhance and intensify proficiency, foster student motivation and engagement, establish a connection between academic learning and professional application, promote economic sustainability for future employees, and fortify pedagogy while facilitating educational reform.”

In the context of contemporary globalized education Agboola and Popoola. [5], maintained “the utilization of ICT is imperative for individuals to effectively access and apply information.” Adeyemi and Adeyemi [6]. corroborated further that the “acquisition of such capability necessitates the incorporation of ICT within the context of the interconnected global community” Currently, there exists a significant need for educators who possess exceptional creativity and innovation skills to guide students towards achieving meaningful learning outcomes. In the same vein, Adigwe and Iyase [7] averred “the presence of a proficient and productive educator is a crucial element that will positively impact the effectiveness of pedagogy in the educational process.” Ogunlade and Oluwatayo [8] postulated that “attainment of successful teaching and learning within educational institutions has persistently posed a challenge in the field of education.” Additional issues of concern as highlighted by Aderinoye. [9] pertain to the structure of the educational programmer, contentious aspects of the topics covered, and inadequate pedagogical approaches.

Religious education/studies is a challenging subject to instruct in contemporary secondary schools. The pedagogical methodology employed in the instruction of the aforementioned subject has undergone various stages. Previously, the focus was on imparting religious doctrines and utilizing a factual examination-based methodology. Presently, the subject matter has shifted towards inquiry and empirical analysis as opposed to dogmatic instruction.

Various terminologies are employed to refer to the subject in contemporary educational institutions. The aforementioned terms encompass a spectrum of concepts, including but not limited to the acquisition of knowledge pertaining to religion, the academic discipline of religious studies, and the imparting of ethical guidance. In most cases, these terms are used interchangeably. One issue pertaining to religion is its inherent association with values, judgement, and emotions, resulting in a lack of consensus within society. This has led to the subject’s controversial nature, inconsistent linguistic discourse, and unstable conversational patterns, ultimately contributing to its technical difficulty. This is largely accountable for low enrolment in the subject/ course in tertiary institutions. Harshit et al. [10] avers that “the major deficiency threatening the subject is adequate use of innovative teaching aids and literature. Hence, the integration of ICT is deemed crucial in the pedagogy of the subject in order to enhance the process of instruction and acquisition of knowledge.”

## **2. Literature review**

The present study aims to elucidate the fundamental notions employed in this research, specifically, ICT and Religious Education. ICT is an abbreviation commonly used to refer to the field of technology that deals with the processing, storage, and communication of information. In its most narrow definition, information refers to a communication, whether it be spoken or written, that is

comprised of a structured arrangement of symbols. Alternatively, information can also refer to the significance that can be derived from such a communication or collection of communications. Data can be captured or conveyed. The phenomenon in question may be documented through visual symbols or transmitted through oscillating patterns of energy known as waves. According to the definition, information refers to any event that has an impact on the condition of a system that is in a state of flux. The term encompasses a multitude of connotations across various contexts. Furthermore, Olawale [11] averred, that “the notion of information is intricately linked to the concepts of oblige, transmission, dictate, representation of facts, method, command, awareness, intention, insight, model, cognitive, substitute, and particularly tendency or measurement. In fact, the term "information" may be defined as data that has been processed.”

Effective communication necessitates the presence of a sender who conveys a message to a designated recipient. Communication has the potential to take place across significant temporal and spatial expanses. Effective communication necessitates that the involved parties possess a shared communicative ground. The process of communication is deemed to be concluded when the recipient has comprehended the message conveyed by the sender. Information technology (IT) refers to the utilization of computer systems and software applications for the purpose of organizing and processing data. The field of Information Technology IT involves the utilization of microelectronics-based computing and telecommunications to acquire, process, store, and distribute various forms of information, including vocal, pictorial, textual, and numerical data. Information Technology IT encompasses a broad range of fields, additionally, but not restricted to series of computer software and data structures. It involves the management of technology and its various applications. In summary, any means of presenting data, information, or knowledge through visual media using various multimedia distribution channels falls within the scope of the IT field.

Ivorgba [12] opined “Religious Education refers to the instruction of a specific religion, encompassing its diverse components such as beliefs, doctrines, rituals, rites, and individual responsibilities.” The term Christian Religious Education pertains to the cognitive advancement of an individual, wherein the teachings of Christian religion are integrated and serve as the focal point of all other forms of knowledge and competencies acquired within a specific environment. This study investigates the utilization of ICT as a means to instill Christian religious principles among students in educational institutions. In academic and curriculum discourse, the terms Christian Religious Education, Religious Studies, and Moral Instruction (Bible Knowledge) are occasionally utilized interchangeably. The present study has adopted Christian Religious Education as the religious education programmer that is provided to secondary school students as a mandatory component of their curriculum. While on the other hand, basic education refers to the whole range of educational activities taking place in primary and junior secondary school levels of schooling in Nigeria.

The National Policy on Education [13] emphasized that the “Nigerian government emphasizes the integration of ICT in education as part of its broader strategy to improve educational quality. Recent revisions and implementations of this policy have focused on enhancing digital skills among both students and

educators. Similarly, National Information Technology Development Agency NITDA further delineate that NITDA has launched initiatives aimed at promoting ICT in education, including the development of e-learning platforms and resources that can be utilized in teaching Christian Religious Education.”

Currently ICT methods are not fully employed in teaching of Christian religious education especially at the basic level of education which is why this research is emphasizing the introduction and adoption of ICT in teaching and learning in Nigeria. Therefore, the research will do justice to this aspect in subsequent headings.

### **3. Statement of the problems**

The utilization of ICT has become pervasive in various domains of human activity in modern times. The pervasive nature of increased usage is evident across nearly all academic disciplines. However, this innovation has not been observed in the domain of Christian religious education pedagogy. The lack of enthusiasm towards Christian religious education may be ascribed to the indifferent disposition of either the instructors or pupils, or conceivably, the absence of engagement with the subject matter. The researchers find it imperative to investigate the reasons behind the limited utilization of ICT in the instruction of Christian religious education, with the aim of gaining a comprehensive assimilation of the discipline.

While there are no strong engagement between the learner and the teacher in respect to ICT adoption, there lies serious problem from government agencies in the implementations of ICT policies at the basic education level. The experience is more of rhetorical formula where much is said yet little or nothing is done. This research therefore, serves as a clarion call to government and its agencies to be more proactive in terms of project implementation in the Nigerian schools.

### **4. Methodology**

The study employed quasi-experimental design. Here we used before-and-after design (i.e., students taught without ICT and those taught with ICT respectively). Here, is a time lapse after the observation and before the second ‘after observation’ (2nd test). However, there is no further treatment or manipulation of the independent variable after 1<sup>st</sup> test, but time lapse is allowed before the second observation, 2nd test with no further manipulation of independent variable. The results of the 2nd test is thereby compared with the result of the 1st test. The study population comprised of all the basic education level students offering Christian Religious Education in Calabar Education Zone. The study employed a purposive undefined collection technique to select a part of 100 individuals from the assigned instrument. Data for the study were collected through a standard test on Christian Religious Education. The data so collected were coded and subjected to analysis using the version 21 of Statistical Package for Social Sciences SPSS. The test statistic adopted for analysis of data was independent t-test.

### **5. Data analysis and the results**

The statistical analysis was conducted to evaluate the hypothesis at a significance level of 0.05 alpha level.

### Hypothesis

Students taught with ICT do not significantly perform better in Christian Religious Education than those taught without ICT. The hypothesis was tested using an independent t-test analysis. **Table 1** displays the outcomes of the analysis.

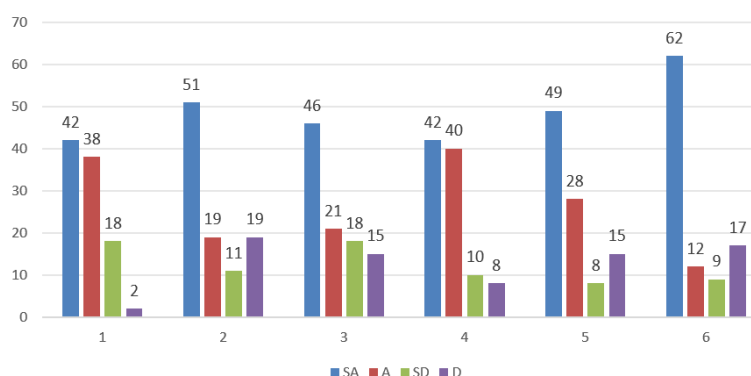
**Table 1.** Independent t-test analysis of students’ taught with ICT and those taught without.

	Group	N	Mean	Std. Deviation	Std. Error Mean	t.	Sig. (2-tailed)
Scores	Taught with ICT	100	67.33	11.187	1.119	16.376	0.00
	Taught without ICT	100	38.26	13.782	1.378		

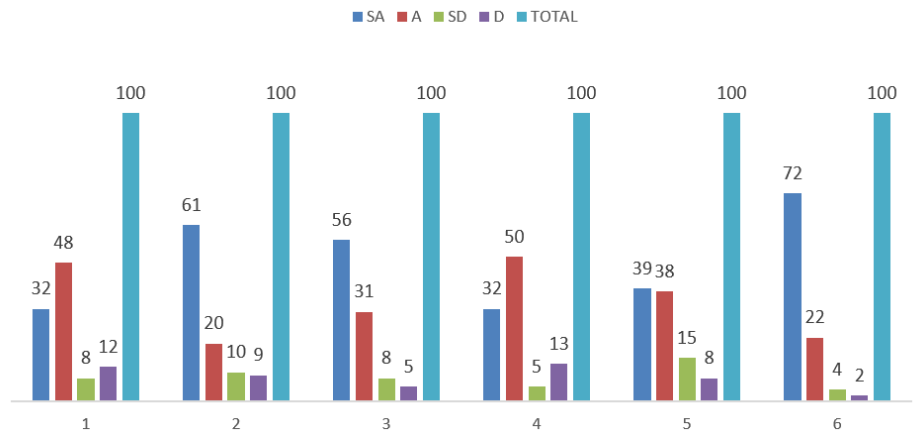
Note: The obtained result is statistically significant at a significance level of 0.05, with a degree of freedom of 198 and a critical *t*-value of 1.649.

**Table 1** displays the outcomes of the analysis, indicating that the computed *t*-value of 16.376 surpasses the critical *t*-value of 1.649 at a significance level of 0.05 with 198 degrees of freedom. That is, students taught with ICT had average score of 67.33 while those taught without ICT had mean score of 38.26. This means that, students’ taught with ICT do significant perform better in Christian Religious Education than those taught without ICT. The results further show that, the higher the level of ICT usage in teaching Christian Religious Education, the better the performance students and vice-versa. Based on these findings, the null hypothesis has been rejected and the alternative hypothesis has been supported. The result is equally shown in **Figures 1 and 2**, based on the respondents age and the respondents gender.

We do here confirm the research was conducted under due process and that the research had received ethical approval from the Ehtics Committee, Faculty of Arts, University of Calabar, Ethical Research Committee and the research ethical approval number is UC/FA/EC/22/006. We further consent that the research under-went a thorough field work which involved human participant respondents and the approval for human participants was received through verbal information and approval from the principals of the schools, namely: Mayne Avenue Government Secondary school, Calabar, Cross River State, Nigeria and Atu Government Secondary school, Calabar, Cross River State, Nigeria.



**Figure 1.** Bar graph showing the respondents decision.



**Figure 2.** Bar graph showing the respondents decision.

We also affirm here that the human participant involvement was derived through the use of examination results obtained from two schools. One of the schools uses and apply ICT, in its teaching and learning as well as in the conduct of examination, while the other school does not apply the use of ICT in teaching and learning as well as conducting exams. We also affirm that the results of the findings showed that the school with the application of ICT indicated in the general exams report shows students performance was greater than those without the use of ICT, hence indicating that there is need for ICT adoption at the basic education level in Nigeria.

## 6. Discussion of findings

### Need for ICT Application at the Basic Education Level in Nigeria

The significance and necessity of contemporary technologies in the realm of religious education cannot be overstated. Upon careful observation, it can be inferred that there exists a certain degree of ICT integration in Nigerian basic education level. ICTs have a significant impact on education in Nigeria, according to the National Policy of Education established by the Federal Government of Nigeria in 2004. The Policy on Education further states that the government must provide the necessary infrastructure and elementary school training programmers in order to fulfil this goal. Currently, computer education is listed as a pre-vocational elective for junior high school students and a vocational elective for elementary school students. According to Ogyeman’s [14] assertion, “the objective of government is to facilitate the provision of essential infrastructure and training required for the complete assimilation of ICT at basic education level of Nigeria. The Nigerian education ministry has not yet developed ICT for education policy. This result may have been influenced by the noted anomalies and lack of durability of the country’s ICT policy.”

Okebukola [15], observed that the “inception of computer education in Nigerian schools can be traced back to the latter part of the 1980s0. They maintained the proposed strategy involved the implementation of pilot schools to disseminate innovative computer education practices initially to secondary schools, followed by primary schools. Regrettably, the project failed to progress beyond the allocation and implementation of individual computing devices.”

In their findings, the computer is not considered as a component of Information Technology. In nearly 90% of Nigeria's public schools, there is no technology in the classroom. The inference drawn from this is that the employment of traditional teaching tools such as chalkboards and textbooks remains prevalent in the majority of Nigerian secondary schools. New Partnerships for African Development evaluation of African students' ICT proficiency and experience yielded a similar subpar rating.

According to Aduwa-Ogiegbu and Iyamaya [16], "Several measures have been implemented to enhance the nation's internet utilization capabilities. The incorporation of ICT at the basic education level in Nigeria has been a concern that prompted the establishment of School Net Nigeria, a nonprofit organization. The initiative was supported by various government ministries." As a public sector Endeavour, the initiative was aimed at mobilizing Nigeria's human and financial resources to promote the utilization of ICT in the country's education sector. To date, the organization has collaborated with MTN, a mobile network operator, to establish information and communication technology laboratories/cyber cafes in four states. This initiative is part of a four-phase project that involves the use of local internet service providers. In conjunction with BusyNet, SchoolNet has established laboratories and cyber cafes in twelve states of the federation, spanning four schools [17].

Zinoc Computers, a private consortium, has undertaken a commendable initiative aimed at revolutionizing the utilization of ICT in education across all three levels of the educational hierarchy, ranging from primary to tertiary education, within the country. First Bank and Zenith Bank have contributed their financial resources to facilitate Nigeria's attainment of a substantial level of per capita computer and internet usage, thereby aligning with other developed nations.

The Digital Bridge Institute DBI has significantly contributed to enhancing computer literacy among the academic community in Nigeria. The organization has initiated a comprehensive programme to address the lack of skills among Nigerian school staff in utilizing computers and related accessories. This programme aims to train and develop the skills of education sector personnel in a "train the trainer" scheme. The organization's efforts are in response to the absence of corresponding initiatives by other organizations providing computers and accessories to Nigerian schools. The objective of this programme is to expedite the acquisition of computer skills among Nigerians to meet the educational demands of the 21st century. The country has been partitioned into six geopolitical zones by DBI utilizing the Adapt Definition and Meaning, ADAPT adaptation scheme. The trainees are typically selected from tertiary institutions and undergo a rigorous and comprehensive workshop that covers Microsoft Word, Excel, PowerPoint, and internet usage. The anticipated outcome is that at the conclusion of the imparting and acquiring skills programme, the trainees would acquire the necessary skills and knowledge to assume the role of trainers upon their return to their respective institutions.

The National Open University of Nigeria, NOUN was founded in 2002 and currently has 27 study centers throughout the country. Its goal is to expand its reach by establishing study centers in all 56 states and local government areas, thereby providing access to computer-based tertiary education for all Nigerians. Every center

is furnished with a laboratory/cyber cafe that comprises several dozen computers arranged in a Local Area Network, LAN configuration.

At present, all higher education institutions in the nation, including universities, polytechnics, and colleges of education, mandate the inclusion of computer education courses in their curricula. It is anticipated that upon graduation and subsequent employment, these students will serve as enablers of computer education in their respective workplaces. According to recent statistical data, Nigeria exhibits a notable prevalence of Internet usage. It is widely believed that Nigeria has exceeded other prominent countries such as South Africa, Egypt, Morocco, and Kenya in terms of internet usage, with a reported figure of over 43 million users. However, in the context of per capita internet usage, Nigeria lags significantly behind these nations. According to Nation Master.com [18], “Nigeria’s Broadband subscriber per capita was 0.004 per 1000 individuals, placing it at the 115th position in the global profile in 2005. Similarly, the Host Per capita was 0.01 per 1000 people, ranking Nigeria at the 205th position in the world in 2008. In terms of secure Internet servers (per capita), Nigeria was positioned at 0.2 per 1 million people and ranked 110 in 2006.” The statistical data fails to portray a favorable depiction of internet accessibility and usage in Nigeria.

Religion is widely regarded as a crucial element in contemporary societies, and as such, its significance cannot be disregarded or marginalized without potentially dire repercussions for said society. Religion is deemed an essential and inescapable facet of human existence. The importance of instilling moral grounding in young individuals cannot be overstated, as it plays a critical role in shaping their overall personality development and moral growth. As Qmoregbe [19] astutely observed, “the advancement of a nation is contingent upon the ethical maturation of its populace. During the pre-Christian era, the primary focus of traditional religious education was the cultivation of ethical principles, even prior to the advent of Christianity. Christianity has emphasized the importance of moral education for both individual and societal growth.” The National Policy on Education’s Section 3(3) underscores the significance of instilling virtuous among individual for proper inter-personal relationships and to foster character development.

Ankur et al. [20] opine “the integration of ICT in education has been widely adopted across various disciplines, including religious education. It has been emphasized that contemporary technologies are crucial for proficient and productive pedagogy and scholarship. Enhancing teaching and learning is considered a fundamental aim of educational technology.” The incorporation and application of ICT within the pedagogy of religious education has the potential to address the inherent challenges associated with the instruction of this subject. Sofowora [20] posits that “the utilization of instructional media has the potential to augment comprehension, retention, and recall.” According to Adetunji’s [22] perspective, “a considerable number of students have the potential to acquire income at a faster pace, when an oral presentation is accompanied by visual aids or tangible objects that are perceptible to the senses of sight, touch, or manipulation.”

According to Sutton [23], “the utilization of ICT has the potential to enhance students’ cognitive abilities by facilitating higher level thinking, problem-solving, enhanced communication abilities, and a thorough



understanding of the teaching method and its underlying idea are all expected outcomes.” According to Harkins [24], “ICT has the potential to foster interactive teaching and learning communities that are supportive in nature. Furthermore, ICT can function as a beneficial asset for students, including those with exceptional requirements, by offering them diverse educational aids.” Franke [25] has reported that “computer graphics have been employed to represent diverse relationships particularly those that are dynamic in nature and cannot be effectively conveyed through singular images.” The utilization of Power Point, complemented by field and animation effects, presents an effective means of showcasing significant biblical events such as the Ten Commandments, the crossing of the Red Sea, the Exodus, the baptism of Jesus, miracles of Jesus, and St Paul’s missionary journeys. This multimedia approach surpasses other forms of media, particularly in terms of its capacity to convey information. In addition to efforts aimed at promoting literacy and numeracy, empirical evidence exists to support positive results in various academic fields, including mathematics, modern foreign languages, science, history, geography, physics education, and the creative arts. According to Ifinedo and Olorubo [26], “ICT has the potential to facilitate students’ learning about and from religion by enhancing their practical communication skills, granting access to diverse information and perspectives, and supporting them in tasks such as organization, documentation, reporting, and dissemination of their findings.” The internet can serve as a valuable tool for exploring the global observance of Easter and Christmas through the acquisition of information, personal narratives, visual media, and audio recordings. Additionally, it can facilitate communication between schools of varying religious backgrounds via email correspondence or with guest speakers. Multimedia software can be utilized to create interactive presentations on religious education topics, incorporating graphics, text, and sound animations. Digital photographs and videos of visits to Christian churches can also be employed to enhance subsequent coursework and displays.

ICT encompasses a diverse array of tools and technologies that extend beyond conventional computing and website development. The aforementioned items encompass a variety of technological devices such as audio cassettes, CDs, overhead projectors OHP, televisions, camcorders, cameras, videos, telephones, and scanners. Due to their high level of manipulability, computers have the capability to execute a vast array of tasks through programming. Currently, it is possible to undertake a journey or religious journey to Jerusalem or any other global destination without physically removing students from the classroom. This allows for the exploration of shrines, the perusal of saints’ biographies, independent theological analysis, and the attainment of answers to basic religious inquiries.

The adoption of ICT in the teaching of CRE at the basic education level in Nigeria is crucial for enhancing educational outcomes and making learning more engaging. This process will enhance Learning experience; ICT tools can facilitate interactive learning, making religious education more engaging for students. Multimedia resources such as videos, animations, and interactive quizzes can help illustrate complex concepts better than traditional methods. According to Agyeman [27] “ICT usage in teaching and learning further grant access to Resources. He maintained ICT provides access to a wealth of online resources,

including digital libraries, educational websites, and e-books, which can enrich the curriculum and provide diverse perspectives on Christian teachings.” Moreover, Ogunjimi [28] averred “teacher training would adequately intensify effective integration of ICT requires with teaching of Christian religious education because they are adequately trained. Professional development programs focusing on digital literacy and the use of educational technology can empower teachers to incorporate ICT effectively into their teaching practices.” Again, the National Policy on Education [13] emphasized that the Nigerian government emphasizes the integration of ICT in education as part of its broader strategy to improve educational quality. Recent revisions and implementations of this policy have focused on enhancing digital skills among both students and educators. Similarly, National Information Technology Development Agency NITDA [29] further delineate that NITDA has launched initiatives aimed at promoting ICT in education, including the development of e-learning platforms and resources that can be utilized in teaching CRE.

## **7. Recommendations**

The ensuing suggestions are intended to enhance the circumstances pertaining to the advancement of ICT integration and utilization in the context of religious education instruction at the basic education level.

- 1) It is recommended that the relevant agencies provide modern computer laboratories in Nigerian basic education levels. Additionally, governments at all levels should subsidize computers for institutions, teachers, and students to facilitate their procurement and use both in schools and at home, thereby enhancing productivity in Nigerian schools.
- 2) It is recommended that the budgetary allocation for education in Nigeria be enhanced to meet the United Nations Educational, Scientific and Cultural Organization (UNESCO) benchmark of 26% of the country’s annual budget. This will facilitate the allocation of adequate funds towards the development of ICT at the basic education level across the nation.
- 3) There is an increase in the availability of workshops for religious education teachers to enhance their knowledge and skills in utilizing ICT at the basic education level settings.
- 4) The implementation of an ICT-based education system necessitates a reliable source of electricity. It is imperative to focus on ensuring that Nigeria assumes the role of a net electricity supplier, as opposed to relying solely on private sector and individual initiatives.
- 5) It is recommended that secondary schools undergo classroom retrofitting in order to facilitate the integration of ICT facilities.
- 6) It is recommended that the government formulate a comprehensive ICT policy for primary and secondary education within the nation.

## **8. Conclusion**

Research investigation suggests that students derive pleasure from learning through ICT owing to the widely held belief that it enhances their retention and elaborates on lessons. The merger of ICT in the pedagogy of religious education at

basic education level will be a notable advancement. The government has expressed a strong interest in promoting the use of ICT by educators to enhance the learning experience of students. In order to accomplish this objective, it is imperative for the government to transcend mere rhetoric approach and establish essential infrastructure and support systems that are required to effectively initiate the integration of ICT at the basic education level.

**Authors contributions:** Conceptualization, OAE and JOO; methodology, GAE; software, EOE; validation, OAE, JOO and GAE; formal analysis, EOE; investigation, OAE; resources, OAE; data curation, GAE; writing—original draft preparation, OAE; writing—review and editing, EOE; visualization, JOO; supervision, OAE; project administration, GAE; funding acquisition. All authors have read and agreed to the published version of the manuscript.

**Conflict of interest:** The authors declare no conflict of interest.

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