



# **Artificial Intelligence Usage for Teaching and Learning of Christian Religious Education in Tertiary Institutions in Abuja, Nigeria**

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**Abstract:** The study assessed the perception of undergraduate students on Artificial Intelligence usage for teaching and learning of Christian Religious Education in tertiary Institutions in Abuja, Nigeria. Survey research design was adopted in this study. The multi-stage sampling technique was used to select the sample. Two out of the three public tertiary institutions in Federal Capital Abuja, Nigeria were randomly selected for the study. 260 undergraduate students were selected for the study randomly. A self-constructed questionnaire was used to gather data for the study. The questionnaire was titled “Perception of Undergraduate Students on Artificial Intelligence Usage for Teaching and Learning of CRS in Tertiary Institutions Questionnaire” (PUSALUTLQ). The instruments were validated using Face validity method. The reliability of the instrument was ascertained using Test-retest method. The data collected from the subjects on two occasions of administering the instruments were correlated using Pearson product moment correlation statistics and the reliability coefficients were found to be 0.76 to 0.78 r-values. Pearson product moment correlation statistics (r) were used to analyze the three hypotheses. The result obtained led to the conclusion that Artificial Intelligence can be used for implementation of teaching and learning of CRS in tertiary Institutions. Artificial Intelligence can be used to carry out researches in Christian Religious Education in tertiary Institutions. Artificial Intelligence can aid in the provision of community services by Christian Religious Education lecturers to the host communities where the tertiary institutions are located. Based on its findings, the paper recommended that federal government should increase funding of tertiary institutions to enable the institutions acquire modern Artificial intelligence to aid implementation of teaching and learning of Christian Religious Education in tertiary institutions. Tertiary institutions administrators should ensure conducive environment are provided for the smooth operation of Artificial intelligence in tertiary institutions in Abuja, Nigeria.

**Keywords:** Artificial Intelligence, CRS, Tertiary Institutions

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## **Introduction**

The Christian Religious Education has emerged as a subject of prime importance in Nigerian

schools. Its value in the school curriculum is unique among other subjects. The teaching of Christian Religious Knowledge in Primary schools in Nigeria can be dated back to the first half of the nineteenth-century when the Christian missionaries established the first school in Badagry in 1842. This form of education spread to the North in the early 19th century and CRK was taught in the schools. At the early period, proprietors of schools were the Christian missionaries (Methodist, Church Missionary Society (CMS), and Roman Catholic who considered CRK as an important subject to be taught in schools. Since then, Christian Religious education has occupied a prominent position in Nigerian school curriculum till date. The view was asserted by Onovughe in (Sunday & Mordi 2017).

Adeyinka, Okeke and Orebanjo (1991) identified the objectives of CRK as: to provide opportunity for the students to learn more about God and further grow in faith in God; to enable students accept Christ as their Saviour; to enable students accept the guidance of the Holy Spirit in their daily activities; To enable students accept Christ as the founder and sustainer of the Christian church; to help students understand the basic teachings of Christ and to apply these to their daily lives and work; to develop and foster in the lives of the students values such as humility, respect, love, kindness, justice, fair-paly, spirit of forgiveness, obedience, devotion to duty, orderly behaviour and selfless service to God and humanity; to prepare the youth for higher education and for service within the community.

Christian Religious Education are offered in all Nigerian educational institutions as subjects in basic schools, junior secondary schools and senior secondary schools. Also, Christian Religious Education is offered as an academic programme in tertiary institutions. As Nigerian Certificate Education in college of education, B. Ed, Master level and PhD in tertiary universities.

There are several methods that can be used effectively. These include both old and new methods. The methods are storytelling, lecture, discussion, the question and answer, the study trip, the panel discussion, debate, the forum discussion, dramatization individualized, discovery, mimicking, pantoming and role play and role play.

In order that teaching may be successful, a teacher needs to use teaching aids to support his method of teaching Religious Education. Joshua (1995) stresses that pupils remember, 10% of what they read, 20% of what they hear, 30% of what they see, 50% of what they hear and see, 70% of what they say and 90% of what they see, hear, say and do. This information goes with the Old Chinese saying that “What I hear I forget; what I say I remember; what I do I know and understand”. This means that seeing and doing things will make a person know, understand and remember things learned best. This is the essence of learning with Visual Materials. Visual aids are very important in the teaching of CRK in the tertiary institutions.

Tertiary education is the education final stage of education that handles the production of manpower for the social, economic and technological development of a country. Tertiary education is an organized education that deals with intensive teaching, research and provision of community services (Akin-Ibidiran, Ogunode & Ibidiran John 2022; Ogunode & Adihikon, 2023). National policy on Education 2013) sees tertiary education as the education given after Post Basic Education in institutions such as Universities and Inter-University Centres such as the Nigeria French Language Village, Nigeria Arabic Language Village, National Institute of Nigerian Languages, institutions such as Innovation Enterprise Institutions (IEIs), and Colleges of Education, Monotechnics, Polytechnics, and other specialized institutions such as Colleges of Agriculture, Schools of Health and Technology and the National Teachers' Institutes (NTI). Tertiary institutions are micro section of the larger society. Tertiary institutions is an organized fraction of the whole society curved out for teaching programme, research and provision of

community service. Tertiary institution can also be seen as a subset of the general society that is made of collection of different people, different culture, different life style and different value (Ogunode & Odo 2023).

Tertiary education cardinal goals include training, research and provision of community services. Teaching and learning of CRK in tertiary institutions can be narrowed down to these three critical programme of tertiary institutions. Ogunode, Onaolapo, Onaolapo, Adeosun & Ayoko (2023) and Ogunode (2023) viewed teaching programme as the first rated programme of tertiary institutions. It is use to determine the quality of tertiary institutions. Training programme involve implementation of curriculum in the tertiary institutions.

Ogunode, Jegede, Adah, Audu, and Ajape, (2021) and Paul (2015) submitted that the conduct of research is one of the basic functions of tertiary institutions. Research is mostly conducted in higher institutions to solve extant problems pertinent to the society. Ogunode & Ade (2023) asserts that Research is regarded as the second most important part of the academic programme in tertiary institutions. They are carried out to advance the social, economic and technological development of their immediate community and society at large; research is conducted by both staff and students in the university system.

Ogunode, Aude, & Olatunde-Aiyedun, (2022) and Ogunode, Ohibime, & Jedege (2023) and Ogunode, Olaoye, & Yakubu (2023) defined community service programme as the third cardinal programme of the tertiary institutions. Community service programme is an organized and planned service programme of higher institutions for the benefit and betterment of their host community. Community service programme of higher institutions are community inclined services initiated by the institutions to develop the communities. Community service of higher institution are services provided by institutions to benefits the community people. Community service of tertiary institutions involve all organized services provide by the institutions to the host communities with the aim of improving their communities positively.

The implementation of these three programme of tertiary institutions are carried out by both human and materials resources (Ogunode & Emmanuel 2023). One of the materials resources is the Artificial intelligence. Artificial intelligence according to Ogunode & Ukozor (2023) is the ability of a machine to carry out tasks usually carry out by human intelligent. Artificial intelligence is a branch of science that deals of programming machines with *a simulation of human intelligence to performance similar tasks normally carry out by human beings*. Artificial intelligence (AI) is *the intelligence of machines or software to carry out human related tasks*. Artificial intelligence (AI) is *the packaging of machines or simulation or approximation of machines with human intelligence to function and carry out task like human beings*. Alagbe (2023) viewed Artificial Intelligence (AI) as the ability of a computer or machine to mimic the capabilities of the human mind – learning from examples and experience, recognising objects, understanding and responding to language, making decisions, solving problems – and combining these and other capabilities to perform functions a human might perform, such as greeting a hotel guest or driving a car.

Artificial intelligence in recent times have been deployed into the tertiary institutions for implementation of teaching, research and community service programme. In Nigeria, Artificial intelligence deployment for implementation of teaching and learning have not be maximally done due to many problems. It is important to know the impact of Artificial intelligence in the implementation of teaching and learning of Christian Religious Education in tertiary institutions in Abuja, Nigeria. Based on tis, tis paper is aimed to assess the perception of undergraduate students on Artificial Intelligence usage for teaching and learning of CRS in tertiary Institutions in Abuja, Nigeria.

The objective of the study is to assess the perception of undergraduate students on Artificial Intelligence usage for teaching and learning of CRS in tertiary Institutions in Abuja, Nigeria. The specific objectives are;

1. To assess if Artificial Intelligence can be used for teaching of CRS in tertiary Institutions in Abuja;
2. To ascertain if Artificial Intelligence can be used for research in CRS in tertiary Institutions in Abuja; and
3. To find out Artificial Intelligence can be used for provision of community by CRS lecturers in tertiary Institutions in Abuja.

Based on the above, the following were developed as hypotheses for the study;

Ho1. There is no significant relationship between Artificial Intelligence and usage for teaching of CRS in tertiary Institutions in Abuja;

Ho2. There is no significant relationship between Artificial Intelligence and usage for researches in CRS in tertiary Institutions in Abuja; and

Ho3. There is no significant relationship between Artificial Intelligence and usage for provision of community services by CRS lecturers in tertiary Institutions in Abuja.

### **Methodology**

Survey research design was adopted in this study. The multi-stage sampling technique was used to select the sample. Two out of the three public tertiary institutions in Federal Capital Abuja, Nigeria were randomly selected for the study. 260 undergraduate students were selected for the study randomly. A self-constructed questionnaire was used to gather data for the study. The questionnaire was titled “Perception of Undergraduate Students on Artificial Intelligence Usage for Teaching and Learning of CRS in Tertiary Institutions Questionnaire” (PUSALUTLQ). The instruments were validated using Face validity method. The reliability of the instrument was ascertained using Test-retest method. The data collected from the subjects on two occasions of administering the instruments were correlated using Pearson product moment correlation statistics and the reliability coefficients were found to be 0.76 to 0.78 r-values. Pearson product moment correlation statistics (r) were used to analyze the three hypotheses.

### **Result Analysis**

Ho1. There is no significant relationship between Artificial Intelligence and usage for teaching of CRS in tertiary Institutions in Abuja.

**Table 1: Test of Relationship between Artificial Intelligence and Usage for Teaching of CRS in Tertiary Institutions in Abuja, Nigeria.**

Table	N 260				
Variables	Mean	SD	$r^2$	<u>Sig@0.05</u>	Decision
<b>Artificial Intelligence</b>	2.63	1.04	.678	.0081	Significant Rejected
<b>Usage for Teaching of CRS</b>	2.81	.71			

### **Sources: Fieldwork 2023**

Table 1 finds out if there is a significant relationship between relationship between Artificial Intelligence and usage for teaching of CRS in tertiary Institutions in Abuja, Nigeria. A significant

of value of .0081 (less than 0.05 alpha level of significance) was obtained. At 0.05 alpha level of significance, the decision rule states that when calculated is greater than the tabulated, we reject HO and accept H1, and when calculated is less than the tabulated value, we reject H1 and accept HO. Therefore we reject HO and accept H1 which states that there is a significant relationship between Artificial Intelligence and usage for teaching of CRS in tertiary Institutions in Abuja, Nigeria. It can be infer from the finding that there is a positive relationship between Artificial Intelligence and usage for teaching of CRS in tertiary Institutions in Abuja, Nigeria.

Ho2. There is no significant relationship between Artificial Intelligence and usage for researches in CRS in tertiary Institutions in Abuja.

**Table: 2 Test of Relationship between Relationship between Artificial Intelligence and Usage for researches in CRS in Tertiary Institutions in Abuja, Nigeria.**

Table		N 260			
Variables	Mean	SD	r <sup>2</sup>	<a href="#">Sig@0.05</a>	Decision
Artificial Intelligence	2.60	1.02	.656	.0073	Significant Rejected
Usage for researches	2.73	.70			

**Sources: Fieldwork 2023**

Table 2 finds out if there is a significant relationship between relationship between Artificial Intelligence and usage for researches in CRS in tertiary Institutions in Abuja, Nigeria. A significant of value of .0073 (less than 0.05 alpha level of significance) was obtained. At 0.05 alpha level of significance, the decision rule states that when calculated is greater than the tabulated, we reject HO and accept H1, and when calculated is less than the tabulated value, we reject H1 and accept HO. Therefore we reject HO and accept H1 which states that there is a significant relationship between Artificial Intelligence and usage for teaching of CRS in tertiary Institutions in Abuja, Nigeria. It can be conclude from the finding that there is a positive relationship between Artificial Intelligence and usage for researches in CRS in tertiary Institutions in Abuja, Nigeria.

Ho 3. There is no significant relationship between Artificial Intelligence and usage for provision of community services by CRS lecturers in tertiary Institutions in Abuja.

**Table: 3 Test of Relationship between Relationship between Artificial Intelligence and Usage for provision of community services by CRS lecturers in Tertiary Institutions in Abuja, Nigeria.**

Table		N 260			
Variables	Mean	SD	r <sup>2</sup>	<a href="#">Sig@0.05</a>	Decision
Artificial Intelligence	2.65	1.08	.679	.0089	Significant Rejected
Usage for provision of community	2.89	.75			

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### **Sources: Fieldwork 2023**

Table 3 was designed to find out if there is a significant relationship between Artificial Intelligence and usage for provision of community services by CRS lecturers in tertiary Institutions in Abuja, Nigeria. A significant value of .0089 (less than 0.05 alpha level of significance) was obtained. At 0.05 alpha level of significance, the decision rule states that when calculated is greater than the tabulated, we reject  $H_0$  and accept  $H_1$ , and when calculated is less than the tabulated value, we reject  $H_1$  and accept  $H_0$ . Therefore we reject  $H_0$  and accept  $H_1$  which states that there is a significant relationship between Artificial Intelligence and usage for teaching of CRS in tertiary Institutions in Abuja, Nigeria. It can be concluded from the finding that Artificial Intelligence can aid in the provision of community services by CRS lecturers to the host communities of tertiary Institutions in Abuja, Nigeria.

### **Discussion of Findings**

The result collected revealed that Artificial Intelligence can be used for implementation of teaching and learning of CRS in tertiary Institutions. This result corroborates the findings of Singh & Singh (2021); Smith, (2021); Smith (2022) and Ogunode & Ukozor (2023). They discovered that deployment of Artificial Intelligence in tertiary institutions can help curriculum implementation in the following ways: lecture planning and preparation, preparation of instructional resources for lecture implementation, lecture presentation, assessment of students, marking of script, assigning of assignments, preparation of students, monitoring students' progress and select appropriate teaching method results. Xiaolin Xia & Li Xiaojun (2022); Westagilelabs (2022); Smith (2022) and Ogunode (2023) maintained that Artificial Intelligence (AI) can assist lecturers and teachers to assign of assignments. He asserted that students can be given online assignment and to submit online after the completion of the projects or assignments.

The result also disclose that Artificial Intelligence can be used to carry out researches in the implementation of CRS in tertiary Institutions. AI can help in creating personalized learning experiences for students by analyzing their learning styles and abilities. This will allow educators to customize their teaching methods, curricula and materials to meet the individual needs of each student. AI can be used to carry out research by both lecturers and students. AI-based App can select theories for a particular topic. AI-based statistical tools can be used to collect data, analyze, interpret and compute data. This can lead to improved engagement, motivation, and ultimately, better learning outcomes (Oztok & Zingaro, 2019; Igbokwe, 2023).

Result also establish that Artificial Intelligence can aid in the implementation of community services by CRS lecturers in host communities of the tertiary Institutions. AI-based tools can aid research development that can help in dissemination of useful health information to host communities (Ogunode 2023; Igbokwe2023).

### **Conclusion and Recommendations**

The objective of the study is to assess the perception of undergraduate students on Artificial Intelligence usage for teaching and learning of CRS in tertiary Institutions in Abuja, Nigeria. The result obtained led to the conclusion that Artificial Intelligence can be used for implementation of teaching and learning of CRS in tertiary Institutions. Artificial Intelligence can be used to carry out researches in CRS in tertiary Institutions. Artificial Intelligence can aid in the provision of community services by CRS lecturers to the host communities where the tertiary institutions are located.

Based on its findings, the paper recommended that federal government should increase funding of tertiary institutions to enable the institutions acquire modern Artificial intelligence to aid implementation of teaching and learning of CRS in tertiary institutions. Tertiary institutions administrators should ensure conducive environment are provided for the smooth operation of Artificial intelligence in tertiary institutions in Abuja, Nigeria.

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