

# OMANARP INTERNATIONAL JOURNAL OF LIBRARY AND INFORMATION SCIENCE.



Vol. 1, Pp. 69-83; August 2024

## LIBRARIANS' SKILLS AND CONTRIBUTIONS TO DIGITAL CITIZENSHIP EDUCATION IN ACADEMIC INSTITUTIONS IN AKWA IBOM STATE NIGERIA.

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### ARTICLE INFO

Received Date: 1st<sup>th</sup> August 2024  
Date Revised Received: 3rd August, 2024  
Accepted Date: 8<sup>th</sup> August, 2024  
Published Date: 30<sup>th</sup> August 2024

Citation: Akwang, N.E; Udoh, I.U; & Tsenongu C.T; Librarians' Skills and Contributions to Digital Citizenship education in Academic Institutions in Akwa Ibom Sate Nigeria: OMANARP INTER. J. Lib & Info Science. Vol.1, Pp. 69-83, August 2024.

### ABSTRACT

*The study examined librarians' skills and contributions to digital citizenship education in academic institutions in Akwa Ibom State, Nigeria. It adopted a correlational research design, with a total population of 113 librarians from 4 university libraries in Akwa Ibom State. The total enumeration sampling technique was considered, while the researchers developed questionnaire instrument was used for data collection. Data collected were analysed using descriptive and inferential statistics. The descriptive statistics was made up of percentage counts, mean scores and standard deviation, while the inferential statistics involved the Pearson Product Moment Correlation (PPMC). The single null hypothesis was tested using linear regression statistics at 0.05 level of significance. The study revealed that the components of digital citizenship education which the librarians are familiar with include: digital security, digital communication, digital etiquette, digital literacy, digital rights, etc. It showed that librarians' skills such as sound social media skills, effective Internet searching skills, effective e-learning skills, etc., are paramount in contributing to students' digital citizenship education. The study found that the librarians' overall contributions to digital citizenship education in academic institutions is low, though they facilitate digital citizenship education by encouraging students on being responsible online citizens, mentoring students on safe Internet use habits, etc. The study attributed librarians' low contributions to digital citizenship education to lack of clear understanding of what constitutes digital citizenship education, lack of digital citizenship education curriculum, lack of modern educational resources, inadequate training of librarians on the use of digital technologies, etc. It concluded that there is a weak but positive relationship between librarians' skills and contributions to digital citizenship education in academic institutions in Akwa Ibom State, Nigeria. The study recommended that management of academic institutions should create an enabling environment for the training of librarians on emerging systems, technologies and advances, while librarians should develop more interest in exploring the digital world and collaborate with other professionals, especially from the IT sector to improve their professional and intellectual responsibilities in line with the changing digital environment.*

**Keywords:** Digital Citizenship, Digital Citizenship Education, Librarians, Skills, Contributions, Academic Institution.

## Introduction

Today's world of teaching and learning has tremendously changed and this has brought a lot of concomitant expectations for rethinking education in the academic institutions. Academic institutions are pivot of knowledge generation for sustainable development. They have great responsibilities to enhance digital learning and creation of opportunities for global digital competitiveness. In Nigeria, academic institutions such as universities, polytechnics, Colleges of Education, Colleges of Agriculture, and other allied institutions are well-challenged by digital revolution. These challenges manifest so greatly in the areas of meeting up with digital transformations and having competently trained manpower to drive quality training and education of students. As a matter of fact, the world is witnessing a digital tsunami with numerous positive and adverse effects on students' attitude towards learning and the use of information in the learning process. This requires deliberate and concerted efforts toward embracing digital citizenship education as a paradigm for global ethical functionality as digital citizens in personal and professional engagements.

Meanwhile, digital citizenship refers to a responsible, reasonable, appropriate, and ethical interaction with or use of the Internet, social media and other digital technologies. James *et al.* (2021) defined digital citizenship as using technology responsibly to learn, create and participate. Opria and Momanu (2023) explained that digital citizenship involves a unique set of skills and dispositions in online contexts and the use of technologies, in such a way that a member and inhabitant of a community can take into account the rights and responsibilities each person has towards the wider community and the world. It is also considered that engaging digitally is a powerful enabler of inclusion in social, cultural and civil society as a digital citizen by fluently combining digital skills, knowledge and attitudes to participate in society as an active, connected lifelong learner (New Zealand Organisation Netsafe, 2016). From these perspectives, an attempt to understand and situate what digital citizenship is, has brought about the concept of digital citizenship education.

Consequently, digital citizenship education represents a novel system of teaching students to effectively, responsibly, responsively, and ethically live, work, interact, participate, and share in the digital environments as digital citizens. Frau-Meigs *et al.* (2019) described digital citizenship education as a process of empowering learners through education and developing the competencies needed to actively learn and participate in a digitally rich society. It involves positioning global citizenship in an educational context that fosters knowledge, skills, values and attitudes through teaching and learning about global citizenship. Digital citizenship education is a transformational form of education with multiplier effects, but such that is evolving with

implications for online safety and responsibility. It underpins a critical understanding that reshape responsibilities beyond the immediate, face-to-face community in which we live, but also an ever-expanding digital communities (Preddy, 2015).

Digital citizenship education has immense advantages for global citizenship by promoting online safety, critical thinking, digital inclusion, collaboration, community engagement, etc. Yet, it has numerous inherent challenges for librarians in academic institutions in Nigeria in many ways, including its implementation. This is because digital citizenship education, by nature, requires librarians as educators and information managers to redirect their approaches in teaching and training of students to become responsible and ethical digital citizens. It requires librarians as facilitators and gatekeepers in information management for educational advancement, to reprioritize their attention in acquiring necessary digital citizenship competencies and skills in order to contribute effectively to students' digital citizenship education.

In a nutshell, librarians' contributions to digital citizenship education can only be possible through constantly updating knowledge from traditional critical skills to digital competencies as digital technologies are continuously taking root in learning. It is equally essential for librarians to possess skills such as research skills, computer skills, online search skills, communication skills, social media skills, digital literacy skills, etc., which are necessary to ethically and effectively teach students on issues of cyber bullying, digital etiquette, online security and safety, social networks, open source, knowledge sharing and communication, as well as technology balancing. It is therefore apt for librarians to play critical role in creating awareness, understanding, informing, orienting and institutionalizing student lessons and training toward digital citizenship.

However, it is observed that while digital citizenship education is enhancing the opportunities of students in advanced nations like United States, United Kingdom, Canada, Australia, Finland, France, New Zealand, Sweden, etc., to become ethical and literate digital citizens, students from the third world countries or underprivileged nations like Nigeria are rather abusing and misusing digital technologies to their detriment. This situation may be partly attributed to the fact that most librarians lack awareness of what digital citizenship education entails, and the necessary skills they need to possess in order to implement effective digital citizenship education in academic institutions. Therefore, based on the above background, the present study examined librarians' skills and contributions to digital citizenship education in academic institutions with a focus on university libraries in Akwa Ibom State, Nigeria.

## Statement of the Problem

Digital citizenship education is of great essence in a world that is tremendously affected by digital revolution. As a matter of fact, digital revolution is increasingly influencing every aspect of education across the world but students in Nigeria seem to be more negatively responding to this evolving trend. This manifests in the increasing rate of cyber bullying, internet frauds, identity theft, abuse of privacy, social media abuses, misinformation and disinformation. Amidst this reality, the rate of corresponding efforts by librarians to orientate or educate students on ethical digital life seem to be obviously lacking. This is notwithstanding the fact that librarians have essential responsibility as purveyors of information for character molding and attitudinal reformation. In fact, these researchers' preliminary observations revealed that students appear to be left in the limbo on issues pertaining to digital citizenship as librarians seem to be unaware of their responsibilities in digital citizenship education or are yet to play such pivotal roles. Thus, based on this backdrop, this study investigated librarians' skills and contributions to digital citizenship education in academic institutions using university libraries in Akwa Ibom State, Nigeria.

## Research Objectives

The main purpose of this study was to examine librarians' skills and contributions to digital citizenship education in academic institutions in Akwa Ibom State, Nigeria. The specific objectives, are to:

- i. Identify the components of digital citizenship education that librarians are familiar with in academic institutions in Akwa Ibom State.
- ii. Determine the librarians' skills for effective digital citizenship education in academic institutions in Akwa Ibom State.
- iii. Examine librarians' contributions to digital citizenship education in academic institutions in Akwa Ibom State.
- iv. Find out the factors militating against librarians' skills and contributions to digital citizenship education in academic institutions in Akwa Ibom State.
- v. Determine the relationship between librarians' skills and contributions to digital citizenship education in academic institutions in Akwa Ibom State.

## Hypotheses

A null hypothesis was tested at 0.05 level of significance

**H01:** Librarians' skills have no significant relationship with contributions to digital citizenship education in academic institutions in Akwa Ibom State.

## Literature Review

Digital citizenship is broadly defined as the utilization of Internet according to international custom and law, applying the norms of appropriate, ethical, and responsible behaviour with regard to technology use, continuously developing and applying the required competence to use, access and create information, media and content, while creating positive learning, research and work environment towards a democratized and sustainable world (Smith & Goosen, 2018). Digital citizenship is also conceived from different perspectives as global citizenship (Parker & Fraillon, 2016; United Nations Educational, Scientific and Cultural Organization (UNESCO, 2015), global competence (Organization for Economic Cooperation and Development (OECD, 2016), digital competence (Carretero *et al.*, 2017), digital consciousness (Institute for Responsible Online and Cell-Phone Communication -IROC2, 2010), and digital literacy (Media Smarts, 2015; Meyerset *et al.*, 2013). It aims at promoting ethical and legal online behaviour, digital literacy and critical thinking, online safety and privacy, respectful and responsible online communities, professional engagements, civic participation, as well as global understanding and collaboration (Learning.com, 2024; Preddy (2015).

Digital citizenship derives its full essence in digital citizenship education, which according to IROC2 (2010), as cited in Frau-Meigs *et al.* (2019) refers to education about the power of digital technologies and positive judgment when utilizing technologies to develop and maintain meaningful relationships that appreciate one's self-worth, while interacting with individuals of different age, culture and sex in respectful and appropriate manners. Digital citizenship education is defined as the process of empowering learners through education and developing the competencies they need to actively learn and participate in a digitally rich society (Frau-Meigs *et al.*, 2019). Digital citizenship education helps in enhancing the ability to engage competently and positively with digital technologies for creating, working, sharing, socializing, investigating, playing, communicating and learning in a digital environment (Council of Europe, 2016; Frau-Meigs *et al.*, 2019; Preddy, 2016). It focuses on addressing responsible and safe use of technology, while preventing cyber bullying, sexting, fake news, disinformation, social media abuse or misuse and other security concerns. It helps to promote values, skills, attitudes, knowledge and critical understanding of online communities locally, nationally, globally on issues pertaining to political, economic, social, cultural and intercultural. Digital citizenship education also emphasizes the process of lifelong learning vis-à-vis respecting copyright laws, avoiding plagiarism, and understanding the implications of digital content sharing.

Digital citizenship education embodies a series of interrelated components, which Oxley (2010), as cited in Smith and Goosen (2018) analysed as types of behaviour for digital citizenship education. These authors,

corroborated by AGParts Education (2024); Capuno *et al.* (2022); as well as Sarkar (2023) clarified that digital citizenship education facilitate understanding of digital etiquette - electronic standards of conduct or procedure; digital communication - electronic exchange of information; digital literacy - process of teaching and learning about technology and the use of technology; as well as digital access - full electronic participation in the society. The authors further provided insights into other elements of digital citizenship education as digital commerce - electronic buying and selling of goods and services; digital law - electronic responsibility for actions and deeds; digital rights and responsibilities - freedoms extended to all online users; digital health and wellness - physical and psychological well-being in a digital technology world; as well as digital security - electronic precautions to guarantee safe online participation.

These components of digital citizenship education are presented in the figure 1 below:

digital citizenship education to bridge digital divide - a gap between students who have affordable access, skills, and support to effectively engage in online communities and those who do not have (Scorse, 2021), due to socioeconomic disadvantages such as poverty, disability, etc.,( Jutras, 2023).Digital citizenship education can also create an opportunity for skilled librarians to teach their students digital information literacy skills and ethical online behaviours as well as effective use of passwords, e-mail spoofing, phishing, and social media platforms. This is because without educating students in digital citizenship skills and habits, they can easily fall into ethical fault lines while interacting, traversing, communicating, collaborating, and sharing via technologies and online.



**Figure 1: Illustration of Various Components of Digital Citizenship Education Adopted from AGParts Education (2024)**

Meanwhile, deducing from the above perspectives, digital citizenship education has great implications for librarians and academic institutions. It supports librarians in collaborating with their academic institutions to develop and embolden learning opportunities for students to improve their online proficiency, engagement and creativity, rather than misuse or abuse digital media at their detriment (Kids Define the Line, 2013). Librarians can also leverage on

However, to effectively function as facilitators between emerging digital technologies and students and other members of the academic institutions, librarians require sound skills such as computer skills, social media skills, communication skills, online collaboration skills, digital literacy savviness, etc. (Akwang & Usoro, 2021; Akwang 2022; Amadi *et al.*, 2024), in order to navigate, evaluate, and utilize digital tools for effective delivery of digital citizenship education. Udoh and Okafor (2022) posited that digital literacy skills enhance active participation in communication, as well as engagement in an online information and communication network. Meanwhile, amidst the important of librarians' skills and contributions

to digital citizenship education in academic institutions, numerous factors are standing on the way. Some of such as limiting factors include decreasing funding, compromising educational system, archaic educational programmes, lack of digital technologies including sustainable internet subscription, lack of priority attention to training of librarians, epileptic power supply, lack of management support, among others (Akwang & Etim, 2010; Akwang 2021; Mensa *et al.*, 2023; Johnston, 2018; Muñoz-Najar *et al.*, 2021). Udoh and Okafor (2022) also identified issues that may hinder librarians' skills and contributions to digital citizenship education as inability to balance cognitive and technical skills by librarians which manifests in technophobic attitude of some librarians and lack of conducive learning environment.

Furthermore, Akwang and Udoh (2024) conducted a correlational study on librarians' technology literacy skills with the use of electronic information resources for research activities in university libraries. The study revealed that librarians' online search skills and Web 2.0 skills had strong positive significant relationships with the use of electronic information resources for research activities, while librarians' online collaboration skills had a weak but positive relationship with the use of electronic information resources for research activities in public university libraries in public university libraries in South-East, Nigeria. It recommended that librarians should take advantage of online training opportunities to acquire and/or improve their online skills for effective research activities.

Khedri (2023) investigated the role of Web 2.0 technologies in empowering librarians in university libraries in Iran. The study revealed a statistically significant positive relationship between the use of Web 2.0 technologies and the empowerment of librarians in enhancing independence and freedom of work, professional development and progress, self-control, job satisfaction, and responsibility. It also showed that the use of Web 2.0 technologies has a statistically significant positive relationship with the librarians' level of education and participation in training instructional courses on Web 2.0 and academic libraries.

Chukwueke and Idris (2023) also conducted a correlational study of librarians' digital literacy skills and services delivery in academic libraries in Taraba State, Nigeria. The study showed that digital literacy skills possessed by the librarians was low as they were only skillful in using the Internet to search and communicate information, conduct website evaluation and use Boolean logic. It indicated a very low positive and insignificant relationship between digital literacy of librarians and services delivery in academic libraries in Taraba State, Nigeria.

In another related study, Capuno *et al.* (2022) examined digital citizenship in education and its implication. The study found that teachers are significantly higher in their level of awareness of the elements of digital citizenship such as digital access,

digital commerce, digital communication, digital literacy, digital etiquette, digital law, digital rights and responsibilities, digital health and well-being, and digital security or safety than students. It showed that students are at risk in this digital environment. Thus, the study suggested that schools should provide initiative and integrate digital citizenship in the curriculum in order to help students become responsible digital citizens.

Khumalo (2022) studied digital literacy instruction in academic libraries in KwaZulu-Natal. The study revealed that subject librarians use ICTs such as computers, projectors, PowerPoint presentations, interactive white boards and various learning management systems for digital literacy instruction. It showed that lack of adequate digital literacy skills among librarians are militating against the use digital literacy instructions. It recommended that librarians need more training in the proper use of ICTs in digital literacy instruction as digital literacy is increasingly considered an essential survival skill and a fundamental life skill in the 21<sup>st</sup> century.

Akwang (2021) also investigated librarians' perceptions and adoption of Web 2.0 technologies in academic libraries in Akwa Ibom State, Nigeria. The study revealed that majority of librarians' perceived Web 2.0 technologies as useful that could enhance their job performance, but indicated a low level of Web 2.0 technologies adoption across the libraries. The study identified budget constraints, inadequate training of librarians to acquire requisite skills, etc., as the major constraints to adoption of Web 2.0 technologies in academic libraries. It recommended regular training and re-training of librarians in Web 2.0 technologies as these tools are greatly transforming librarianship practices.

In another important study, Spurava *et al.* (2021) explored the role and readiness of librarians in promoting digital literacy in Latvia. The study revealed that librarians do not have a clear understanding of their role, rights and responsibilities in supervising young people's digital activities in the libraries. It found that non-awareness of their role as mediators of digital literacy together with lack of time and insufficient technological preparedness seem to create a risk for librarians to a giving-up attitude, or to apply restrictive mediation practices. The study suggested that librarians should be supported through opportunities to participate in professional development programmes to raise awareness about their role as mediators of digital literacy and increasing their readiness for their role.

In another sort of study that focused on digital literacy skills of LIS students on the utilization of electronic information resources in two federal universities in Nigeria, Udoh *et al.* (2020) found that necessary digital literacy skills for use of e-resources include Internet surfing skills, social networking/social media skills, electronic search and retrieval skills, etc. It showed that students rarely acquire digital literacy skills from formal educational setting rather they keep

improving their digital literacy skills from personal craving and practical experiences through trials and error. The study identified epileptic power supply, poor internet access, inadequate digital facilities, lack of conducive digital literacy learning environment, poor teaching methods by lecturers, etc., as the factors militating against digital literacy skills acquisition in the universities.

Philip and Anderson (2020) in their study on inclusive educational role of school librarians for supporting safe online behaviours through a community of peers, discovered that both the librarians and youth share a common concern over use and abuse of the internet and social media. It showed that librarians are lacking in resources and other materials they could draw upon and are also uncertain about how to present programmes, and structured classroom to meet the digital needs of the students. The study also found that librarians need a continuing education and/or professional development on digital citizenship and overarching digital literacy including how to offer unique and tailored digital information literacy instruction approaches to students in the libraries. The study concluded that offering an inclusive education in support of safe online behaviour requires listening to the needs of the students in the ways to improve inclusive digital citizenship and digital literacy instruction.

Gazi (2016) conducted a study on internalization of digital citizenship for the future of all levels of education. The study revealed that learners and teachers developed their awareness of digital citizenship upon this research process, as the study provided an insight on being readiness to adapt global citizen through internalizing digital literacy and citizenship. It concluded that it is crucial to integrate digital literacy and digital citizenship into curriculum and course designs for the future in all levels of education in order to make global citizen, even as digital citizenship skill should be considered from the pre-school education levels.

From the above reviews and other available literature which these researchers have painstakingly perused, it was quite obvious that much is not done empirically on digital citizenship education vis-à-vis librarians' skills and contributions in academic institutions in Akwa Ibom State, Nigeria. Thus, this study was conducted to fill the gap.

### Methodology

The correlational research design was adopted for this study using a total population of one hundred and thirteen (113) librarians from four (4) university libraries in Akwa Ibom State. These university libraries include two (2) public university libraries, namely; Akwa Ibom State University Library and University of Uyo Library; as well as two (2) private university libraries, namely; Ritman University Library and Topfaith University Library. The choice of these university libraries was due to the nature of the study and their strategic location which were easily accessible by the researchers. Also, the category of library staff chosen are those with degrees in Library and Information Science (that is, Bachelors, Masters and PhD), who are either progressing with the academic librarian cadre or the non-academic (library officer) cadre. The choice of the staff was also informed by the assumption that they have interface with the students either directly or indirectly in educating, training, mentoring or partnering in their learning processes, including issues on digital citizenship. This implies that staff of the libraries with National Diplomas, Certificates and those on Administrative or Executive cadres were not included in the study. The total enumeration sampling technique was used since the study population was small and manageable, with no need for further sampling. This is presented in Table 1 below.

**Table 1: Population Distribution and Sample Size by University Libraries**

S/N	University Libraries	No. of Population	No. of Sample
<b>Public University Libraries</b>			
1.	University of Uyo (UNIUYO), Uyo	80	80
2.	Akwa Ibom State University (AKSU), Ikot Akpaden	26	26
<b>Private University Libraries</b>			
3.	Ritman University, Ikot Ekpene	3	3
4.	Topfaith University, Mkpatak, Essien Udim	4	4
<b>Total</b>		<b>113</b>	<b>113</b>

Researchers’ developed questionnaire with structured questions titled, “**Librarians’ Skills and Contributions to Digital Citizenship Education in Academic Institutions Questionnaire (LSCDCEAIQ)**”, was used for data collection. The questionnaire was designed with 45 items across 4 clusters, using four-point rating scale. To ensure that the instrument for data collection measures what it was intended to test, the questionnaire was validated by three(3) research experts Akwa Ibom State University, Ikot Akpaden, and further subjected to pilot test using the test-re-tests method, which yielded a correlation coefficient value (r) of 0.85. Consequently, 113 copies of the questionnaire were distributed and 98 copies representing 86.73% (87%) were retrieved with valid information and appropriate for data analysis. The data collected were analysed using descriptive and inferential statistics. Research objectives 1, 2, 3 and 4 were analysed using descriptive statistics of percentage counts, mean scores and standard deviation with a criterion mean of 2.50, while objective 5 was analysed using Pearson Product Moment Correlation (PPMC). The degree or strength of the relationship of the variables was determined and interpreted using Creswell’s correlation coefficient scale which states that

regression statistics at 0.05 level of significance, while the decision rule was to reject the null hypothesis if p-value is less than the alpha value of 0.05, or otherwise, accepted.

**Results and Discussion of Findings**

The results of the data analyses were presented in accordance with the specific objectives of the study below:

Research Objective 1: To identify the components of digital citizenship education that librarians are familiar with in academic institutions in Akwa Ibom State, Nigeria

Table 2: Mean and standard deviation responses on components of digital citizenship education that librarians are familiar with in academic institutions (n = 98)

S/N	Item Statements	SA	A	D	SD	Mean	Std. Dev.	Remark
1.	I understand that digital access is essential part of digital citizenship education	19	31	34	14	2.56	0.964	Agreed
2.	I know that digital commerce is vital in the digital era	44	27	22	5	3.12	0.934	Agreed
3.	I know that digital communication makes life easier	42	35	14	7	3.14	0.919	Agreed
4.	I know that digital literacy is part of digital citizenship education	32	43	17	6	3.03	0.867	Agreed
5.	I recognize digital etiquette as essential in digital citizenship education	37	38	15	8	3.06	0.929	Agreed
6.	I know that digital law is an element of digital citizenship education	17	12	62	7	2.40	0.858	Disagreed
7.	I understand that digital rights define digital citizenship education	32	43	16	7	3.02	0.885	Agreed
8.	I recognize digital responsibilities as essential in digital citizenship education	11	23	49	15	2.31	0.866	Disagreed
9.	I appreciate digital health as a part of digital citizenship education	9	17	53	19	2.16	0.846	Disagreed
10.	I understand that digital security is a part of digital citizenship education	41	41	8	8	3.17	0.897	Agreed
Cluster Average						2.80	0.870	Agreed
Criterion Mean						2.50		

Source: Researchers’ Field Survey, 2024

correlation coefficient (r) ±0.00 - 0.20 = very low relationship, ±0.21 – 0.40 = low relationship, ±0.41 – 0.60 = moderate relationship, ±0.61 – 0.80 = high relationship, while ±0.81 – 1.00 = very high relationship (Creswell, 2014). The single null hypothesis was tested using linear

Data in Table 2 revealed the mean and standard deviation responses on the components of digital citizenship education that librarians are familiar with in academic institutions in Akwa Ibom State, Nigeria. The result specifically showed that the librarians are familiar

with 7 out of the 10 basic components or constituents of digital citizenship educations, which include: digital security (3.17, 0.897); digital communication (3.14, 0.919); digital commerce (3.12, 0.934); digital etiquette (3.06, 0.929); digital literacy (3.03, 0.867); digital rights (3.02, 0.885); and digital access (2.56, 0.964). On the other hand, the result indicated that some of the librarians were not quite familiar with digital law (2.40, 0.858); digital responsibilities (2.31, 0.866); and digital health (2.16, 0.846) as elements of digital citizenship education. The results were confirmed by a higher cluster average of 2.80 against the 2.50 criterion mean, to show the librarians' level of familiarity with digital citizenship education in academic institutions.

**Research Objective 2:**

To determine librarians' skills for effective digital citizenship education in academic institutions in Akwa Ibom State, Nigeria

Data analysis in Table 3 showed the mean and standard deviation responses on librarians' skills for effective digital citizenship education in academic institutions in Akwa Ibom State, with a greater grand mean or cluster average of 2.75 against the 2.50 criterion mean. The result found that librarians possessed a variety of skills for delivering digital citizenship education with the highest being sound social media skills with a mean score of 3.39 and standard deviation of 0.698; followed by effective Internet searching skills (3.19, 0.857); and effective e-learning skills with a mean score of 3.07 and standard deviation of 0.944. It also indicated other sets of librarians' skills for effective digital citizenship education to include: effective e-communication skills (2.92, 0.927); sound presentation skills (2.89, 0.860); and creative thinking skills (2.77, 0.972). The results further disclosed that the librarians disagreed to possessing enough online collaboration skills (2.30, 0.876); online mentoring skills (2.14, 0.773); and online marketing skills (2.10, 0.891) for effective digital citizenship education in academic institutions in Akwa Ibom State, Nigeria.

**Table 3:** Mean and standard deviation responses on librarians' skills for effective digital citizenship education in academic institutions (n = 98)

S/N	Item Statements	SA	A	D	SD	Mean	Std. Dev.	Remark
1.	I have effective e-learning skills for digital citizenship education	37	41	10	10	3.07	0.944	Agreed
2.	I have effective e-communication skills for digital citizenship education	31	35	25	7	2.92	0.927	Agreed
3.	I have online mentoring skills for digital citizenship education	7	16	59	16	2.14	0.773	Disagreed
4.	I have effective Internet searching skills for digital citizenship education	41	41	10	6	3.19	0.857	Agreed
5.	I have online collaboration skills for digital citizenship education	14	14	57	13	2.30	0.876	Disagreed
6.	I have online marketing skills for digital citizenship education	11	11	53	23	2.10	0.891	Disagreed
7.	I have creative thinking skills for digital citizenship education	29	25	36	8	2.77	0.972	Agreed
8.	I have sound presentation skills for digital citizenship education	27	37	30	4	2.89	0.860	Agreed
9.	I have sound social media skills for digital citizenship education	49	39	9	1	3.39	0.698	Agreed
<b>Cluster Average</b>						<b>2.75</b>	<b>0.866</b>	<b>Agreed</b>
<b>Criterion Mean</b>						<b>2.50</b>		

Source: Researchers' Field Survey, 2024



**Research Objective 3:** To examine librarians' contributions to digital citizenship education in academic institutions in Akwa Ibom State, Nigeria

**Table 4:** Mean and standard deviation responses on librarians' contributions to digital citizenship education in academic institutions (n = 98)

S/N	Item Statements	SA	A	D	SD	Mean	Std. Dev.	Remark
1.	I partner curriculum developers on digital learning	7	14	52	25	2.03	0.831	Disagreed
2	I discuss the importance of being a responsible online citizen with my students	28	44	19	7	2.95	0.878	Agreed
3	I create activities for my students' digital literacy learning	7	12	49	30	1.96	0.849	Disagreed
4	I teach my students to create a positive digital footprint	6	9	62	21	2.00	0.746	Agreed
5	I teach my students safe online practices such as the use of password, fingerprint, face recognition, voice recognition, etc.	4	25	50	19	2.14	0.773	Disagreed
6.	I mentor my students on safe Internet use habits	24	44	22	8	2.86	0.885	Agreed
7.	I teach my students digital literacy skills	12	49	31	6	2.68	0.768	Agreed
8.	I teach my students ethical digital issues with respect to copyright laws, and avoidance of plagiarism, fake news, and misinformation	15	56	26	1	2.87	0.668	Agreed
9.	I engage in persuasive advocacy for digital learning	12	20	60	6	2.39	0.782	Disagreed
10.	I teach my students online security risks such as hacking, phishing, and identity theft	6	14	66	12	2.14	0.703	Disagreed
11.	I teach my students to avoid cyber bullying and other cyber threats	5	6	61	26	1.90	0.725	Disagreed
<b>Cluster Average</b>						<b>2.36</b>	<b>0.783</b>	<b>Disagree</b>
<b>Criterion Mean</b>						<b>2.50</b>		

Source: Researchers' Field Survey, 2024

Table 4 revealed the mean and standard deviation responses on librarians' contributions to digital citizenship education in academic institutions in Akwa Ibom State. It showed that librarians contribute to digital citizenship education by discussing the importance of being a responsible online citizen with students (2.98, 0.878); teaching students ethical digital issues with respect to copyright laws, and avoidance of plagiarism, fake news, and misinformation (2.87, 0.668); mentoring students on safe Internet use habits (2.86, 0.885); as well as teaching the students digital literacy skills (2.68, 0.768). On the other hand, the result disclosed that librarians disagreed to contributing enough to digital citizenship education in the areas of: engaging in persuasive advocacy for digital learning(2.39, 0.782); teaching students on safe online practices such as the use of password, fingerprint, face recognition, voice recognition, etc. (2.14, 0.773); teaching students on online security risks such as hacking, phishing, and identity theft(2.14, 0.703);partnering curriculum developers on digital learning (2.03, 0.831);teaching

students to create a positive digital footprint (2.00, 0.746); creating activities for my students' digital literacy learning (1.96, 0.849); as well as teaching students to avoid cyber bullying and other cyber threats (1.90, 0.725). This indicated that the overall contributions of librarians to digital citizenship education in academic institutions in Akwa Ibom State was low, with a lower cluster average of 2.36 compared to the 2.50 criterion mean.

**Research Objectives 4:** To find out factors militating against librarians' skills and contributions to digital citizenship education in academic institutions in Akwa Ibom State, Nigeria

**Table 5:** Mean and standard deviation responses on factors milting against librarians' skills and contributions to digital citizenship education in academic institutions (n = 98)

S/N	Item Statements	SA	A	D	SD	Mean	Std. Dev.	Remark
1.	Inadequate ICT skills	51	29	12	6	3.28	0.906	Agreed
2.	Inadequate digital tools	43	43	8	4	3.28	0.784	Agreed
3.	Poor Internet connection	45	36	17	0	3.29	0.746	Agreed
4.	Epileptic power supply	35	44	15	4	3.12	0.816	Agreed
5.	Technophobia	18	20	49	11	2.46	0.921	Disagreed
6.	Poor attitude to change	31	54	9	4	3.14	0.746	Agreed
7.	Poor communication skills	20	16	43	19	2.38	1.021	Disagreed
8.	Poor mentoring spirit	57	33	7	1	3.49	0.677	Agreed
9.	Lack of clear understanding of what constitutes digital citizenship education	21	59	15	3	3.00	0.703	Agreed
10.	Pedagogical problems	41	37	16	4	3.17	0.850	Agreed
11.	Lack of digital citizenship education curriculum	54	25	13	6	3.30	0.922	Agreed
12.	Lack of new educational resources	50	34	14	0	3.37	0.724	Agreed
13.	Poor funding of libraries	43	40	12	3	3.26	0.791	Agreed
14.	Inadequate training of librarians on the use of digital technologies	41	45	12	0	3.30	0.677	Agreed
15.	Lack of government policy to regulate digital behaviour	41	43	11	3	3.24	0.774	Agreed
<b>Cluster Average</b>						<b>3.14</b>	<b>0.804</b>	<b>Agree</b>
<b>Criterion Mean</b>						<b>2.50</b>		

Source: Researchers' Field Survey, 2024

Data in Table 5 showed the mean and standard deviation responses on factors militating against librarians' skills and contributions to digital citizenship education in academic institutions in Akwa Ibom State, with a cumulative mean or cluster average of 3.14 against 2.50 criterion mean. The result specifically revealed that all the items of investigation, except technophobia (2.46, 0.921); and poor communication skills (2.38, 1.021), were agreed upon by the librarians as limiting factors to librarians' skills and contributions to digital citizenship education in academic institutions. It specifically revealed that the major factors militating against librarians' skills and contributions to digital citizenship education in academic institutions include: poor mentoring spirit (3.49, 0.677); lack of modern educational resources (3.37, 0.724); inadequate training of librarians on the use of digital technologies (3.30, 0.677); lack of digital citizenship education curriculum (3.30, 0.922); poor internet connection (3.29, 0.746); inadequate ICT skills (3.28, 0.906); inadequate digital tools (3.28, 0.784); poor funding of libraries (3.26, 0.791); pedagogical problems (3.17, 0.850); poor attitude to change (3.14, 0.746); epileptic power supply (3.12, 0.816); lack of clear understanding of what constitutes digital citizenship education (3.00, 0.703), etc.

**Research Objective 5:** To determine the relationship between librarians' skills and contributions to digital citizenship education in academic institutions in Akwa Ibom State, Nigeria

**Table 6:** PPMC coefficient between librarians' skills and contributions to digital citizenship education in academic institutions in Akwa Ibom State, Nigeria

		LSs	CDCE
LSs	Pearson's Correlation	1	0.084
	Sig. (2tailed)		
	N	97	97
CDCE	Pearson's Correlation	0.084	1
	Sig. (2tailed)		
	R <sup>2</sup>	0.007	
N		97	97

LSs = Librarians' Skills

CDCE = Contributions to Digital Citizenship Education

N = No. of Observations

R = Correlation Coefficient

R<sup>2</sup> = Coefficient of Determination

Data on Table 6 showed a very low degree of relationship between librarians' skills and contributions to digital citizenship education in academic institutions in Akwa Ibom State, Nigeria, as indicated by the correlation

coefficient (r) = 0.084, which is positive and falls within the correlation coefficient limit of ± 0.00 – 0.20. The coefficient of determination (r<sup>2</sup> = 0.007) revealed that 7% of the variance observed in contributions to digital citizenship education in academic institutions in Akwa Ibom State, Nigeria, accounted for by librarians' skills. This implies that librarians' skills to a very low extent relates with the contributions to digital citizenship education in academic institutions in Akwa Ibom State, Nigeria.

**Test of Hypothesis**

**H0<sub>1</sub>:** Librarians' skills have no significant relationship with contributions to digital citizenship education in academic institutions in Akwa Ibom State.

**Table 7:** Simple regression analysis of the relationship between librarians' skills and contributions to digital citizenship education in academic institutions in Akwa Ibom State, Nigeria

	Df	Sum of Square	Mean Square	F	Sig.
Regression	1	5.458	5.458	0.672	0.415
Residual	95	772.026	8.127		
Total	96	777.485			

Data in Table 7 above showed a p-value of 0.415 which is numerically greater than the alpha value of 0.05, but not statistically strong enough to cause a rejection of the null hypothesis. Thus, since the p-value of 0.415 was not statistically strong enough to cause a rejection of the null hypothesis, it was concluded that librarians' skills have a weak but positive relationship with contributions to digital citizenship education in academic institutions in Akwa Ibom State, Nigeria.

**Discussion of Findings**

The finding of the study revealed in Table 2 that librarians in academic institutions in Akwa Ibom State are familiar with some basic components of digital citizenship educations such as digital security, digital communication, digital commerce, digital etiquette, digital literacy, digital rights, and digital access; but not quite conversant with digital law, digital responsibilities, and digital health. This implies that librarians' familiarity with the components of digital citizenship education as a paradigm in emboldening digital citizenship has defining

effects on the extent to which they can contribute to students' digital skills and digital life in the academic institutions. This finding partially agrees with Capuno *et al.* (2022), which discovered that teachers, including librarians as instructors are significantly higher in their level of awareness of the elements of digital citizenship such as digital access, digital communication, digital literacy, digital etiquette, etc., than students who are more at risk in this digital environment.

When appraising librarians' skills for digital citizenship education, the finding in Table 3 revealed that the librarians possessed a variety of skills for delivering digital citizenship education with the highest being sound social media skills, followed by effective Internet searching skills, effective e-learning skills, effective e-communication skills, sound presentation skills, and creative thinking skills. It showed further that the librarians do not possess enough online collaboration skills, online mentoring skills, and online marketing skills. The finding partly corroborates with Akwang and Usoro (2021); Chukwueke and Idris (2023); as well as Udoh *et al.* (2020), which identified Internet surfing skills, social networking/social media skills, electronic search and retrieval skills, online communication skills, etc., as some fundamental skills for effective participation in the digital environment.

The finding equally discovered in Table 4 that the overall contributions of librarians to digital citizenship education in academic institutions in Akwa Ibom State is low, even though they facilitate digital citizenship education by discussing the importance of being a responsible online citizen with students; teaching students on ethical digital issues with respect to copyright laws, and plagiarism, fake news, and misinformation; mentoring students on safe Internet use habits; as well as teaching the students on digital literacy skills. The finding partly gives credence to the studies conducted by Kids Define the Line (2013); and Scorse (2021), which found that librarians can contribute to digital citizenship education by collaborating with their academic institutions to develop and encourage learning opportunities for students to improve their online proficiency, engagement and creativity. It also agrees with Khedri (2023), which revealed that digital citizenship empowers librarians in enhancing independence and freedom of work, professional development and progress in an online environment.

However, when examining the relationship between librarians' skills and contributions to digital citizenship education in academic institutions in Tables 6 and 7, the finding revealed that librarians' skills have a weak but positive relationship with contributions to digital citizenship education in academic institutions in Akwa Ibom State, Nigeria. This flows from the correlation coefficient ( $r$ ) of 0.084, which showed that librarians' skills have a positive but very low degree of relationship with the contributions to digital citizenship education in academic institutions in Akwa Ibom State, Nigeria.

Furthermore, the finding in Table 5 revealed that the factors militating against librarians' skills and contributions to digital citizenship education include: poor mentoring spirit, lack of modern educational resources, inadequate training of librarians on the use of digital technologies, lack of digital citizenship education curriculum, poor internet connection, inadequate ICT skills, inadequate digital tools, poor funding of libraries, lack of clear understanding of what constitutes digital citizenship education, etc. The finding partially aligns with Akwang (2021); well as Khumalo (2020), which identified budget constraints, inadequate training of librarians to acquire requisite skills, and lack of adequate digital literacy skills among librarians as barriers to digital literacy instructions. It also corroborates with Philip and Anderson (2020); and Spurava *et al.* (2021), which showed that librarians are lacking in resources and other materials, are uncertain about how to present programmes and structured classroom to meet the digital needs of the students, face insufficient technological preparedness, as well as lack clear understanding of their roles, rights and responsibilities in supervising students' digital activities in the libraries.

## Conclusion

Digital citizenship education is a transformative system or approach of teaching students to effectively, responsibly, responsively, and ethically live, work, interact, participate, and share in the digital environments as digital citizens. Digital citizenship education has been seen as a global paradigm due to its implications on the evolving digital revolution that has affected every facet of life, learning, work, business and social interactions. Effective contributions to digital citizenship education by librarians is dependent on a variety of skills and competencies. In this study, it was discovered that digital citizenship education is composed of digital security, digital communication, digital etiquette, digital literacy, digital rights, etc. It was also found that librarians' skills such as sound social media skills, effective Internet searching skills, effective e-learning skills, effective e-communication skills, etc., are paramount in contributing to students' digital citizenship education. The study found that the overall contributions of librarians to digital citizenship education in academic institutions in Akwa Ibom State, Nigeria, is low, even though they facilitate digital citizenship education by discussing the importance of being a responsible online citizen with students; teaching students on ethical digital issues with respect to copyright laws, and avoidance of plagiarism, fake news, and misinformation; mentoring students on safe Internet use habits, among others. The study attributed librarians' low contributions to digital citizenship education to factors such as: poor mentoring spirit, lack of modern educational resources, inadequate training of librarians on the use of digital technologies, lack of digital

citizenship education curriculum, inadequate ICT skills, inadequate digital tools, lack of clear understanding of what constitutes digital citizenship education, among others. Finally, the study concluded that there is a weak but positive relationship between librarians' skills and contributions to digital citizenship education in academic institutions in Akwa Ibom State, Nigeria.

### Recommendations

Based on the findings of this study, the following recommendations were made:

- i. Management of academic institutions in collaboration with university libraries should create an enabling environment for the training of librarians to familiarize themselves with emerging systems, technologies and advances such as digital citizenship education, as well as improve their skills for effective functioning in the digital world. This will enable librarians to adequately contribute to digital citizenship education in the Nigerian academic institutions.

- ii. Management of academic institutions should provide adequate digital technologies and associated tools, including modern educational resources, Internet services and constant power supply in order to enhance the teaching of digital citizenship skills and behaviours.
- iii. Librarians should partner with curriculum developers and other stakeholders in the Nigerian academic institutions to fine-tune existing curriculum in line with changes in the digital environment.
- iv. Librarians should develop more interest in exploring the digital world and collaborate with other professionals, especially those from the IT sector in order to improve their professional and intellectual responsibilities in line with the changing digital environment.

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