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# INVESTIGATION INTO THE AVAILABILTY OF E-LIBRARY IN SCIENCE SECONDARY SCHOOLS IN NIGER STATE NIGERIA IMPLICATION FOR E-LEARNING

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***Abstract***: This study has been undertaken to investigated the secondary school science student's awareness, of online resources for learning in Niger State Nigeria. Specifically, the study: determined secondary school science students' awareness of online resources for learning, A descriptive research design of the survey type was adopted for the study. One research questions were used in-line with the purpose of the study, 600 respondents were randomly sampled from the six-science secondary school in Niger State. Frequency and percentage were used to answer the research question Findings of the study revealed that science students were aware of online resources for learning and it was recommended that, orientation program should be organized for students in the school on how to download and access online Resources.

***Index Terms*: online resources, Science, learning, Awareness.**

## 1. INTRODUCTION

Niger state is one of the 36 states in Nigeria, it was established in 1976. it was created out of the defunct North -Western States in Nigeria. Niger State is the largest state in Nigeria with a vast land mass of 86,000km square, which makes it strategic for this research work. Niger state is situated in the North-Central geopolitical zone of Nigeria, with Minna as its capital city, other major cities in Niger state includes, Suleja, Bida, Kontangora, Kutigi, New Bussa, Izom and Kuta. Niger state is populated mainly by the Nupe people in the south, the Gwari in the East, the Busa in the west and the Kambari, Hausa's, Fulani, Kamuku and Dakarki in the North. Niger state is known predominantly for agriculture and farming of tuber crops and cereals. Development in the state is yet to reach its advance stage due to poor standard of education, this form one of the bases for this research work.

Science is a process as well as knowledge. Children learn science by being involved not only with its content, but also with its methodology. The effective science facility accommodates both Science study requires a variety of unique instructional materials in addition to those materials common to all of education. A science facility must have space to accommodate this variety in combination with hands-on instructional strategies. Science instructional areas have spatial and material needs that are different from those considered in designing a general use classroom National, state, and local efforts, public and private, are underway to improve science education. A major goal for education in the 21st century is to create scientifically literate citizens, who are able to think critically, make sense of complex data, and solve problems. Currently, it is observed that the objectives for improving scientific literacy are not achieved. Science enrollment is relatively low, achievement in certain grade level is declining and teachers' morale is low. The number of colleges schools has more than tripled between 2004 and

2014 in Niger State, though with few of them still purely science oriented to serve different undeserved communities and so has the number of enrollees. Despite these successes, there have been a number of challenges, including the following; Poor performance in secondary education examinations, with most students getting marginal pass of Division IV or failing completely, acute shortages of teachers, especially in the Sciences and Mathematics, with many students not able to do these subjects at all, acute shortages of Science and Mathematics teachers, inequalities in learning environments among different schools resulting in inequalities of learning outcomes Knowledge of science and technology is therefore a requirement in all countries and all people globally due to the many challenges that are facing them. These challenges include emergence of new drug resistant diseases, effects of genetic experimentation and engineering, ecological impact of modern technology, dangers of nuclear war and explosions and global warming among others (Alsop & Hicks, 2001).

Information and Communication Technology is a term notable for the use, re-use, processing, storing, accessing, gathering, manipulating and presenting or communicating of information from one person to another. ICT is applied in all branches of human knowledge as it offers better solutions to greater heights in all institutions. The field of education has been influenced by the infiltrating impact of information and communication technology (ICT). Information is a dynamic and unending asset that influences all disciplines and all works of life. The advent of the computer in the 1950s has brought radical changes in all spheres of life in the way in which information is gathered, stored, organized, processed and expended.

Information and Communication Technologies are technologies used for collecting, storing, editing and spreading of information in various forms and structures (Issa, Daramola, Aladesusi, & Udoh, 2017). The term ICT is an umbrella term that incorporates any communication device or application, encompassing: radio, television, mobile phones, computer, and network hardware and software, satellite systems and so on, as well as the different administrations and applications related to ICT, such as information storage gathering (Mondal & Mete, 2012).

Technology as communication equipment and software required to organize, study, strategize and provide support to manage information systems dependent on computer software as well as hardware. These technologies can be utilized to offer anticipated results with little error or flawless, steady, reliable and interactive in the learning process (Alasela, Ogunlade, Obielodan, & Nasiru, 2017). It can also be described as all devices, networking components, applications and systems that are combined which enables individuals and organizations to interact in the digital world (Margaret & Pratt, 2017). Furthermore, ICT is a collection of technologies used for collecting, storing, processing, communicating and delivery of information associated with the teaching and learning processes (Ogunlade & Anaza, 2017).

Information and Communication Technologies connected to the internet gives its user a wide range of information to pick from. Moreover, ICT has turned the world into a global village, with a consistently expanding access to a wide array of information and knowledge, similarly making it feasible for sharing of written, audio and visual information in real-time in many parts of the world (Usang, et al, 2018). ICT is winding up progressively significant in our daily lives and in our educational system. There is a growing demand for educational institutions to use ICT facilities to enhance the skills and knowledge the students need for the 21st century (UNESCO, 2012).

The introduction of ICT into schools and in the learning, process was driven by global forces that are beyond the school-based decision making and it has become imperative because of it contribution to globalization of education (Fadipe and Francis 2023). The implementation of ICT in education was to transform the teaching and the learning process from the conventional instructional instructor focused on a student-focused approach with the active participation of the learners (Voogt, 2010). The utilization of ICT tools has enhanced the productivity of academic staff of institutions as they used ICT for functions such as information collection, processing, reporting, teaching, educating, managerial capacities, organization, storage, dissemination, and research (Aderoju & Olumorin, 2017). ICT can complete, enrich and transform education for the better, it have become the most basic building block of modern academic and industrial society, it has been mainstreamed in instruction design in different teaching and learning process (UNESCO, 2018). ICT has impacted on the quality and quantity of education, most especially for classroom instruction and research in traditional and distance education institutions. Technology presents a new dimension to communication in the world thereby lessening the world to one small but a connected village. New technologies present remarkable access to information, content, and information. This is evident in the communication devices used in contemporary society and most particularly in the educational sector in Nigeria.

Abdulraham and Soetan (2017) noted that ICT is the utilization of scientific tools and techniques for developing, documenting and communicating information for solving problems or providing required administrations in different regions of human undertaking. The integration of information and communication technology (ICT) has the potential to radically modify the social structure and mode of operation, and this social change will in turn force educational institutions to react and change as well. With respect to the role of technology in education. The evolution means of generating and gathering information in the twentieth century has influenced students utilization of information resources, among such information resources includes electronic resources.

## 2. NEED OF THE STUDY

The infiltration of innovative technological resources in education has made E-books, also known as electronic books to become an essential part of electronic resources that meets the 21st century innovation. ICT use in education ensures a consistent progression to quality education via electronic delivery systems. It is no doubt that online resources is already a fundamental part of the electronic learning system, which is used to describe different kinds of digital or electronic books consisting of text, images or both that are viewed using e-readers on computers, phones, tablets or other electronic devices

(desktop or mobile). Most of these come in different e-reading formats such as adobe pdf, Microsoft word document, among others; and often accessed via online view, downloads, e-mails, shared via social media and other delivery channels.

However, despite the growing popularity and use of online resources and e-book readers in Nigerian institutions. Some factors tends to militate against the science students awareness of online resources such as their over-reliance on lecturers hard copy handouts as the course material. Furthermore, it is apparent that Nigerian institutions have libraries, but the inadequate availability of E-library facilities has since impacted negatively on students' exposure and access to online resources through open access to institution online resources repository. Hence, students' inefficient utilization of online resources for learning, due to their inadequate of exposure to electronic resources for learning, and the negative nature of their already streamlined mentality to the use of hard copy learning resources despite the billions of online resources and resources available online with the wider advantage of flexibility, accessibility and mobility. All of which are apparent problems and one that is yet to be articulated in-line with contemporary learning practices with the use of electronic resources available online.

Abdullah and Gibb, (2016) in a study revealed that e-book awareness among students was low as was the level of e-book usage, a inadequate of awareness regarding e-book availability and publicity also contributed to the main reasons for a inadequate of utilization of online resources among students surveyed in the study. Oriogu, et.al., (2018) in another study revealed that students surveyed in the study do not often access online resources due to their inadequate of awareness on how to access online resources on the institution's e-library repository. The researchers also revealed that students inadequate use online resources from the institution's e-library repository, as long as they could get the desired books in hard copy from the institution library. These challenges were however reported to be due to inactive links, student's unawareness and orientation on where to locate or how to access needed online resources and poor internet connections, all of which invariably led to poor utilization of online resources among students. Having established the prevailing problems and other impediments critical to student's unawareness, access and utilization of e-books; hence this study. This study therefore, seeks to investigate and determine the inherent reasons behind the secondary school science student's awareness, access and utilization of online resources for learning in Niger State and more importantly to proffer suggestions and solutions to solve or improve students' awareness, access and utilization of online resources for learning.

### 3.1 Population and Sample

The population for this study is science students in all secondary school in Niger state. Six secondary school was purposely selected because they are all science colleges in the State. The target population consisted of all the science students of the secondary school in the selected colleges. A multistage sampling procedure was used for the study, proportional sampling techniques was used to allocate the number of respondents in each school base on their estimated population using Israel Model (2012) at a 5% level of precision, purposive sampling was used in the selected school to select 398 as indicated on table 1.0 below science students from the sample secondary school to serve as the respondents in this study.

**Table 1.0 List of Science Secondary Schools in Niger State**

| S/no | Names of Science Secondary Schools | Type | Sample Size |
|---|---|---|---|
| **1** | **Government Science College Izom** | **Boys only** | **100** |
| **2** | **Government Science College Kagara** | **Boys only** | **100** |
| **3** | **Mariam Babangida Girls Government Science College. Minna.** | **Girls only** | **100** |
| **4** | **Government Science College, Kutigi** | **Boys only** | **100** |
| **5** | **Alhaji Musa M. kigera II Science College. New Bussa.** | **Mixed** | **100** |
| **6** | **Federal Science and Technical College Kuta** | **Mixed** | **100** |
| | **Total** | | **600** |

Source of Data

3.2 **Data and Sources of Data**
For this study, secondary source of data was used from the Niger state secondary education website

## Purpose of the Study

The main purpose of this study is to examine the secondary school science students awareness, of online resources for learning in Niger State Nigeria. Specifically, this study: Determined secondary school science student's awareness of online resources for learning;
Research Questions

1. What are the secondary school student's awareness of online resources for leads,mrning?

**Methodology**

This research design was descriptive method of survey type. It is considered appropriate because the descriptive research method involves the systematic collection and analysis of data collected from a large population that helps to describe the characteristics of the population as they appear based on the phenomenon under consideration for this study without external manipulations by the researcher. The questionnaire was used to gather information on awareness, access, and utilization of online resources for learning among the secondary school science students in Niger State which is the focus of this study. Data was collected using the researchers-designed questionnaire titled "secondary school Science Students Awareness of online resources for Learning in Niger State Nigeria. It is divided into two parts, section A elicited demographic information from the respondents, section B contained items to investigate the students awareness of online resources, the items in section B was rated on a response mode of Extremely Aware, Very Aware, Slightly Aware, Not Aware At All.

**Table 1:** Distribution of the Respondents according to Gender

| **Gender** | **Frequency** | **Percentage** |
|---|---|---|
| Male | 240 | 60.3 |
| Female | 158 | 39.7 |
| **Total** | **398** | **100** |

Table 1 Shows that 240 respondents representing 60.3 percent were male while 158 respondents representing 39.7 percent were female. It implies that the majority of the respondents were male.

**Results and Discussion**

Research Question One: What is the science science student's awareness of online resources for learning?

**Table 2:**

| S/N | Statement | EA | | VA | | SA | | NA | |
|---|---|---|---|---|---|---|---|---|---|
| | | F | % | F | % | F | % | F | % |
| 1 | Quality online resources which are useful for learning are readily available online | 106 | 26.6 | 214 | 53.8 | 26 | 6.5 | 52 | 13.1 |
| 2 | online resources are available for learning in my area specialization | 94 | 23.6 | 173 | 43.5 | 40 | 10.1 | 91 | 22.9 |
| 3 | I am familiar with the cost benefits of using online resources for learning | 92 | 23.6 | 132 | 33.2 | 122 | 30.7 | 52 | 13.1 |
| 4 | I know about the flexibility and convinces of online resources for learning | 120 | 30.2 | 79 | 19.8 | 66 | 16.6 | 133 | 33.4 |
| 5 | I'm familiar with online resources apps for mobile devices (e.g Read Era, Cool Reader, Nook, Blue fire Reader and so on) | 106 | 26.6 | 107 | 26.9 | 66 | 16.6 | 119 | 29.9 |
| 6 | I am familiar with the dedicated e-book reader dev106ices (e.g Amazon Kindle, Kobo clara Reader, Sony Reader and so on) | 134 | 33.7 | 106 | 26.6 | 92 | 23.1 | 66 | 16.6 |
| 7 | I am aware of e-book open-access sites (e.g project Gutenberg, open library, internet archive, and so on) | 121 | 30.4 | 120 | 30.2 | 92 | 23.1 | 65 | 16.3 |
| 8 | I know that I can download the e-book to mobile devices and laptops | 146 | 36.7 | 160 | 40.2 | 40 | 10.1 | 52 | 13.1 |
| 9 | I am aware that my college library provides access to e-books | 118 | 29.6 | 146 | 36.7 | 27 | 6.8 | 107 | 26.9 |
| 10 | I have knowledge of the availability of free academic online resources for learning | 159 | 39.9 | 80 | 20.1 | 79 | 19.8 | 80 | 20.1 |

Table 3 shows the opinions of the respondents on their awareness of online resources for learning among science students in Niger State. 320 respondents representing 80.4 percent agreed that they are aware that quality online resources which are useful for learning are readily available online while 78 respondents representing 19.6 disagreed. It indicated that the students in secondary school in Niger State are aware of the quality online resources which are useful for learning are readily available. 267 respondents representing 67.1 percent agreed that online resources are available for learning in the students' area of specialization while 131 respondents representing 32.9 percent disagreed. It implies that online resources are available for learning in the students' area of specialization in secondary school in Niger State. 224 respondents representing 56.3 percent agreed that they are familiar with the cost benefits of using online resources for learning while 174 respondents representing 43.7 percent disagreed. It means that the students are familiar with the cost benefits of using online resources in secondary school in Niger State. 199 respondents representing 50 percent agreed that they know about the flexibility and convinces of online resources for learning while 199 respondents are not aware about the flexibility and convince of online resources for learning in secondary school in Niger State. 213 respondents representing 53.5 percent agreed that they are familiar with online resources apps for mobile devices such as readers, cool reader, nook, Blue fire reader while 185 respondents representing 46.5 percent are not aware. It implies that the majority of the students are aware of online resources

apps for mobile devices in secondary school in Niger State. 240 respondents representing 60.3 percent agreed that they are familiar with the dedicated e-book readers' devices such as amazon kindle, kobo clara reader, and sony reader while 158 respondents representing 39.7 percent disagreed that they are not aware. It indicated that the students are familiar with dedicated e-book reader devices such as amazon kindle, kobo clara reader and sony reader in secondary school in Niger State. 241 respondents representing 60.6 percent agreed that they are aware of e-book open access sites such as project Gutenberg, open library, and internet archives while 157 respondents representing 39.4 percent are not aware of e-book open access sites. It means that majority of the students are aware of e-book open access sites such as project Gutenberg, open library and internet archive. 306 respondents representing 76.9 percent agreed that they know that they can download the online resources to mobile devices and laptops while 96 respondents representing 23.1 percent disagreed. It implies that the students are aware that they can download the online resources to mobile devices and laptops. 264 respondents representing 66.3 percent agreed that they are aware that their college library provide access to online resources while 134 respondents representing 33.7 percent disagreed. It indicated that the students are aware that secondary school in Niger State libraries provide access to e-books. 239 respondents representing 60 percent agreed that they have knowledge of the availability of free academic online resources for learning while 159 respondents representing 40 percent disagreed. It implies that the students have knowledge of the availability of free academic online resources for learning in secondary school in Niger State.

**Summary and Conclusion**

This study investigated awareness, of online resources for learning among science student in secondary school in Niger State, Nigeria. The research question seeks to check the students' awareness of online resources for learning among science students in secondary school in Niger State, such awareness includes; quality online resources which are useful for learning are readily available online, online resources are available for learning in the students' area of specialization, the students are aware that their college library provide access to e-books. The findings of this study are similar to that of Asunka (2013) revealed that the level of awareness and perception of online resources among undergraduate students in was somehow considerable, but the degree of acceptance and use was limited to reference sources

In conclusion, the findings revealed that majority of the science students in secondary school in Niger State were aware of the availability of online resources for learning.

**Recommendations**

Based on the findings of this study, it is recommended that Institutions should create awareness among the students on the availability online resource son their colleges' websites by organizing orientation programmes where the students should be trained on to how to download e-books.

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