Open Access to Scholarly Publications: Importance, Access, Constraints and Strategies for Improvement.

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Abstract

The purpose of this paper is to examine the importance, access, constraints and

strategies for improving the use of open access to scholarly publications. The paper argues that the falling standard of academic libraries in Nigeria, as information database in every institution, poses a nightmare to scholars, researchers, students and the educational system generally. But the switch to information communication technology (ICT), e.g. internet, provides an alternative to scholars to access scholarly publications. The paper has adopted the descriptive method of research. The population of the study, involved academic staff from two universities in the Southeast zone of Nigeria. A sample of 400 academics was used. The instrument for data collection was a structured questionnaire. The findings shows that there is insufficient access to scholarly publications due to some constraints such as economic and licensing restrictions for online journals, lack of ICT competence, infrequent power supply, low internet connectivity, etc. Some efforts made to surmount the constraints were identified and recommendations such as increasing internet connectivity, training and retraining of staff, provision of steady power supply, etc. were made to bridge the gap in access to scholarly publications based on the findings.

Keywords: Open access, education, scholarly publication, research.

Introduction

Recently, one of the commonest recurrent concepts among policy makers, in political and academic discussions is "sustainable development" and Vision 20:2020. Sustainable development has been an age old concept popularized by the Brundtland (2007) Commission in 1987 when it described it as "the challenge of meeting the needs of present generations without compromising the ability of future generations to meet their own needs." Education was addressed by the Commission as one of the top priorities in achieving sustainable development. The Commission emphasized that development should 'keep growing' and should also include the creation of sustainable improvements in the quality of life of all citizens (Jhingan cited by Akindoyeni (2008). On the other hand, Vision 20-2020 emanated during the regime of President Yar' Adua in 2010. Yar' Adua's government hammered on various social imperatives such as energy/electricity, wealth creation, education, security, land reforms, mass transit and research, as vehicles to sustainable development. These were tagged the 'Yar' Adua's Seven Point Agenda' (SPA) (Adeyemo, 2007). It was the ultimate dream to actualize the SPA that gave birth to

'Vision 20-2020'. This phrase has become recurrent vocabulary in Nigeria's blue-print for economic revolution. 'Vision 20-2020' is meant to transform the nation into a world class power, one of the top 20 most powerful global economies by the year 2020. Such changes and challenges, which have been driven by the global social and economic forces of the knowledge economy (UNESCO, 2004), have motivated scholars and researchers to re-think the ways in which they make their scholarly publications accessible and available.

This is because, the ability to achieve education for sustainable development (ESD) and Vision 20-2020 would rest on the level of availability and access to knowledge and information that scholars and researchers have. Traditionally, scholars and researchers got their knowledge through research and review of existing literature mostly in libraries. But given the stringent economic conditions in Nigeria, there has been inadequate funding for research and for acquisition of library materials (0kore, 2010). This situation has brought about inequalities in access to educational materials and infrastructure. In turn, this has become a source of inequity, injustice, social exclusion and reduction in some social imperatives that should lead to sustainable development. Scholars and researchers need to have knowledge and information base that would enable them to contribute towards transforming the society and have easy access to information needed for the achievement of ESD and Vision 20-2020. But libraries which are supposed to be the hub of academic research and scholarly publications are now inundated with dust and out-dated books. Subscription to current journals for up-to-date information for students and staff has all but dried up. (Majirioghene and Bilewomo , 2008). As a result, our libraries could no longer provide direly needed access to information on cutting edge research and discoveries.

Access to Scholarly Publications
Institutions and organizations have found that the evolution of ICT, especially the internet, has greatly enhanced the level of accessibility and availability of scholarly publications. However, the introduction of contract law with licensing restrictions has limited access to scholarly publications. As a result of this, scholars and researchers could no longer gain access to a large volume of information. The timely intervention of some scholars and scholarly bodies gave rise to 'open access' (OA) to scholarly publications. According to Shieber (2009), open access to scholarly publication is a move to publish scholarly articles on line, making them available to the public at no charge. This implies that every information accessed is free for the users at the expense of the publisher. Rettig (2008) also believes that OA to scholarly publications, correctly perceived, involves different aspects of access to information, among which are unfiltered internet access, public availability of government funded researched reports, database subscriptions, assistantive technology, etc. He adds that when barriers to access to information are removed, bridges to information would thereby be built, and people would be connected to information that matters in their lives; that is, information that would tailor to the needs and cultures of the people. The resultant effect of unlimited access to information, especially scholarly articles, would create ample opportunities for all to learn, to grow and to know. The lifting of restrictions to information has been of tremendous value to African scholars whose access to scholarly publications had been severely restricted by increased cost of journal and monograph subscription. It is also important to add here that

the movement for open access initiatives which was started to remedy restrictions and barriers to open access has achieved some positive results.

Importance of OA

OA refers to immediate and free access for any user to full text online scientific and scholarly material, primarily researched articles published in peer-reviewed journals. The term means that any user who has access to the Internet, may link, read, download, store, print-off, use, and data-mine the digital content of the open access article which hitherto had limited copyright and licensing restrictions**.** Thus, keeping up-to-date with literature enables people to gain new ideas, learn new techniques and, build on the works of others. As noted by Suber (2010), OA gives barrier–free access to the literature scholars need for their research. OA increases reader-reach and retrieval power and also gives barrier- free access to the software they use in their research. According to Shieber, (2008) open access to scholarly journals allows scholars to disseminate their research findings to audiences around the world. This gives current and world-wide information about latest developments in all aspects of human endeavours, especially in the area of science and technology. Showcasing Faculty research findings can provide a better picture of the country's research output and areas of specialization. This in turn can bring about international collaboration, joint research, funding proposal and even recruiting or retaining of faculty (Chan, Kirsop and Arunachalam, 2005). Such activities can go a long way to improve education for sustainable development and Nigerian Vision 20-2020. Libraries which play vital roles in the field of education are served by OA, which solves the pricing crisis for scholarly journals and also what Suber (2010) refers to as permission problem.

Constraints to OA

Electronic publishing and the internet seem to hold out promise for academic and scientific findings to be available at little or no cost to users around the world. But there have been reports here and there about some hindrances to this supposedly open access system to information retrieval via scholarly articles. Doyle and Gass (2004) reported that there has been a long drawn debate over the years on the issue of open access to scholarly literature and its insufficient accessibility. In their report, they made clear, the stand of a web forum called gpgNet, a growing diverse global constituency that clearly argues that world's scholarly literatures are not sufficiently accessible. The forum identified factors that have hindered the relatively unfettered dissemination of scholarly publication to include:

    (a) Explicit restriction of intellectual property regimes and

    (b) The *de-facto* restriction caused by the extremely high prices for peer-reviewed scholarly journals (even in their on line mode).

Also Shieber (2008) observes that the scholarly publishing system has become far more restrictive than it need be. He adds that many publishers do not even allow scholars to use and distribute their own work. They are actively opposed to open access, fearful that this will cut into their profitability. What is more, the costs of journals have risen to such astronomical levels that many institutions and individuals have canceled subscriptions, thus further reducing the circulation of scholar's works. Kirsop, *et al* (2007), (Altbach and Rapple (2012) observe that the cost of access to published journals has become

prohibitive for developing counties and deteriorated in the past decade as journal subscription prices exceed general inflation figures by three to four folds.

Many universities and individual researchers have been slow to adopt open access, only a limited number of universities worldwide have established institutional repositories to facilitate deposit of researched work by their faculty. Also, many government funding agencies around the world are hesitant to adopt open access. Their reason could derive from the observation made by Zwanikken (2012), that though ICT is one of the most potent forces in shaping the twenty-first century, however, many developing countries lack the basic infrastructure and the financial, human and institutional resources required to join the information age.

In the Nigerian scenario, a number of factors tend to hinder open access to scholarly publications, (both local and foreign). One of the most important among the factors is that most local scholarly articles are not in searchable formats and their publishers do not have electronic outlets for their publications. (Chigbu, 2010). It is against this fact, that Ezema (2010) has argued that the greatest challenge facing scholarly publications in Nigeria is devising appropriate method of disseminating the research findings that will enable colleagues to access to them. Research findings, he asserted, are mainly published in journals with very limited access. Most often these are read only by journal reviewers and the authors.

Other restrictive factors include infrequent power supply, slowness of internet, and lack of effective and efficient use of ICT by majority of Nigerian scholars. Chigbu, (2010) also observed that many universities are still struggling to get license to open access international databases. These impediments were recognized by Line (1998:18) who said:

> *The hope has been expressed that technology might help less developed countries (LDCs) to over-come their economic problems,...but technology cannot be used unless the equipment is acquired and maintained, and unless there is a good telecommunications infrastructure, nor can a regular electricity supply be relied upon: electronic communication can be cut off in mid-flow, as a result of problem of over-load on the system....*

Line's and Chigbu's observations about the restrictive and stumbling effects of infrequent power supply, very little internet connectivity and low bandwidth in most areas of the developing countries especially rural schools, on access to global information resources, can hardly be disputed. Also important in this discourse, is the fact that many scholars in developing countries, Nigeria in particular, are still computer illiterate and non-ICT compliant. How can a person surf through the internet when s/he does not know basic computer usage? Computer illiteracy or "ICT have-not" which Zwaniken (2012) refers to as the "digital divide" has greatly hindered access to rich scholarly literature even when it is made open access.

Strategies for Improving the use of OA Resources

Agitations have been growing over the years against the restrictions on open access to scholarly literature as a result of increase in the cost of journals and intellectual property regime. This has caused many concerned groups such as organizations, universities, faculties, etc to start a movement called Open Access Movement (OAM). The formation

of this movement is a formal recognition of the need to promote and support the cause of open access to articles in scholarly journals by International bodies. (Doyle & Gas 2004). Ejikeme (2010) added that OAM started as a result of the increase in legal and economic barriers by commercial scholarly publishers which made research output to be difficult for researchers to access, especially in developing countries like Nigeria. This culminated in the Berlin Declaration on Open Access to knowledge in the sciences and humanities, which was signed by dozens of leading scientific institutions in the world, during the world summit on Information Society's Declaration of Principles. The Declaration aligns with OAM stating:

> *We strive to promote universal access with equal opportunities for all to scientific knowledge and the creation and dissemination of scientific and technical information including open access initiatives for scientific publishing: (Doyle & Gas 2004:1). www.gpgNet.net)Piorseehttp://www.itu.int/wsis/docs/geneva/official/dop.html, Paragraphs26\8.*

Despite the efforts at promoting OA since 1994, the uptake of OA by scholarly publishers has been slow. However, recently several positive initiatives made under the OAM to remedy the problem in select and extremely impoverished nations, suggest that complete and truly open access is not farfetched. Also, conscious of the growing importance of ICT as effective tools for inclusive growth and sustainable development, OFID is intensifying its contributions to building human and institutional capacity, by improving access to the use of ICTs (Zwanikken, 2012).

The fore-going efforts are being made at the international front. There is absolute need to compliment these inputs via regional, national or institutional initiatives, if the international efforts are to have their full impact. To this end, the following strategies are necessary to improve access to OA publications:

- Increased awareness raising exercise and organization of OA workshops by institutions and organizations.
- Provision of extended connectivity. Though online development raises some concern about increase in 'digital divide', the extension of connectivity through the development of local and regional networks in a way that institutions with connectivity can serve as distribution centres to others. This will enable many people to gain access to scholarly publications.
- Investment in wireless and satellite connections.
- Efforts being made by different institutions (e.g, UNN) to upload their scholars' scholarly publications, and students' theses and projects online, in order to open institutional repositories.
- The regular ICT in-service training and refresher courses and workshops being regularly organized for university staff in UNN and other universities in Nigeria is a good stride towards effective use of OA resource.
- Providing the needed infrastructures that will effectively drive the technology for OA usage. In other words, the issue of internet connectivity and regular power supply is one the greatest strategies towards adopting OA.

Statement of Problem

Education was seen by Dewey (in Shokel and Howes, 2009) as being a major contributor to the development of human potential as well as social growth. In the context of sustainability of the development process, education contributes to empowering individuals with appropriate competence to participate in a constructive and sustainable way of life (Shokel and Howes, 2009). The UK Panel for Education for Sustainable Development (1998) defined the concept as that which enables people to develop their knowledge, values and skills to participate in decision-making about the way we do things individually and collectively, locally and globally, that will improve the quality of life now without damaging the planet of the future.

However, no sustainable economic growth takes place without a strong science based-education and research. UNESCO (1982), as cited in Kirsop *et al* (2007), reported that assimilation of scientific and technological information was an essential pre-condition for development in developing countries, and access to scholarly publication was a pillar to research and development. Though institutions and organizations have recognized the need of OA and emphasis has been laid on its importance in literature, not many studies have been carried out for the purpose of verifying the access level, constraints and possible strategies for improvement in Nigeria.

Objectives of the Study

Based on the foregoing, the present research sets out to evaluate the extent open access to scholarly publications helps academics achieve education for sustainable development and Vision 20-2020. Specifically, the study

(a) examines the extent educationists and researchers have access to scholarly publications
(b) ascertains in what ways open access to scholarly publications is important to education for sustainable development and Vision 20-2020.
(c) identifies the constraints to open access to scholarly publication, and
(d) proffers suggestions to curtail constraints to open access.

Research Questions

Based on the foregoing objectives, the present research sets out to answer the following questions:

- To what extent do academics and researchers have access to scholarly publications?
- In what ways is open access to scholarly publications important to education for sustainable development and Vision 20-2020?
- What constraints face the use of open access to scholarly publications in Nigeria?
- What can be done to curtail the constraints?

Methodology

The research design adopted in this study is the descriptive survey. Nworgu (1991) observes that a survey research allows the study of a group of people through collecting and analyzing data from sampled number of them or items which are representative of the whole group. Thus, the opinions obtained from the sample in this research are used to generalize as being the representative opinion of the group, in our case academics in Nigerian universities. The population of the study consisted of academic staff from the

University of Nigeria, Nsukka and Nnamdi Azikiwe University, Awka. Academic staff in these two universities has access to some open access databases such as JSTOR, HINARI, AGORA and ESBCOHOST. Stratified random sampling method was used to select 50 academics each from four (4) faculties (Social Sciences, Education, Humanities, Physical Sciences) of each of the two universities, making a total of 400. A total of 320 questionnaires out of the 400 were retrieved, representing 80 per cent return rate. Of this number, 305 copies were properly completed and used.

The instrument had Parts 1 and 2. Part 1 provides information on the demographic and personal characteristics of the respondents. Part 2 is divided into four sections. Section one in part 2 of the instrument has five items relating to extent of access to scholarly publications. Section two consists of nine items that dealt with importance of open access to scholarly publication. Section three has eleven items that dealt with constraints encountered by academics in the use open access to scholarly publications. The fourth and last section has seven items relating to the suggestions for ameliorating the constraints faced by academics in the use of open access to scholarly publications.

The questionnaire items were structured to have four point modified Likert scale of Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD) for questions in Section 1; and Very Large Extent (VLE), Large Extent (LE), Small Extent (SE) and Very Small Extent (VSE), for questions in Sections 2, 3, and 4. The scale was categorized as follows:

Very Large Extent (VLE) / Strongly Agree (SA)	4points
Large Extent (LE) / Agree (A)	3points
Small Extent (SE) / Disagree (D)	2points
Very Small Extent (VSE) / Strongly Disagree (SD)	1point

A mean score of 2.50 and above is acceptable while below 2.50 is rejected.

Results

The results of the data analysis obtained in testing the research questions are presented in tables 1 – 4

Research question 1: To what extent do academics and researchers have access to scholarly publications?

Table 1: Extent of access to scholarly publications by academics and researchers.

s/n	To what extent do you have access to:	Mean scores
1.	Internet to link, read, download, store, use open access publications.	2.7
2.	Scholarly publications for empowerment of the education sector.	2.7
3.	Scientific and technological information	2.5
4.	Government funded research output for achieving Vision 20 – 2020.	2.5
5.	Full text online scientific materials	2.3

In response to research question number 1, the extent to which academics and researchers have access to scholarly publication, indicates that access to internet, and scholarly publications to empower education received the highest rating (2.7), while access to full text online scientific materials was rated lowest (2.3) The rest of the items were rated 2.5 each. In summary, 4 out of the 5 items rated above, scored the acceptance level of not less than 2.5.

Research Question 2: In what ways is open access to scholarly publications important to education for sustainable development and Vision 20-2020?

Table 2: Mean Scores of importance of Open Access to Scholarly Publications.

.Open access to scholarly publications helps to:	Mean scores
Increase access to information for the achievement of education for sustainable development (ESD) and Vision 20 – 2020.	3.6
Access documents that enable people develop knowledge, values and skills to participate in decisions that improve the quality of their lives.	3.6
Improve access to knowledge that scholars and researchers need to transform the society.	3.6
Make publications in developing countries more visible	3.5
Access documents that contribute to individuals' skills to participate in a constructive and sustainable way of life.	3.4
Encourage researchers and scholars to increase their role in the creation and dissemination of knowledge	3.3
Reduce unequal access to educational materials and infrastructure	3.0
Improve political power and participation	3.0
Achieve increased access to political power and participation	3.0

The results in Table 2 show that the three most highly rated importance of OA were increasing access to information for the achievement of education for sustainable development (ESD) and Vision 20 – 2020, accessing knowledge that helps people to take decisions that improve the quality of their lives; improving access to knowledge that scholars need to transform the society, with a mean score of 3.6 each. This is followed by making publications in developing countries more visible, which scored 3.5. The rest were rated within the range of 3.4 – 3.0

Research Question 3: What constraints face the use of open access to scholarly publications in Nigeria?

Table 3: Constraints encountered by academics in the use of open access to scholarly publications.

To what extent do academics encounter the following constraints?	Mean scores
Infrequent power supply	4.0
Insufficient internet connectively	4.0
Low internet bandwidth in many institutions	3.8
Many locally published scholarly articles are not in searchable formats	3.6
Many publishers do not allow scholars to freely use and distribute their works.	3.2
Lack of computer skills to surf through the internet for open access documents	3.0
Many universities and individual researchers have been slow to adopt open access.	3.0
Institutional repositories are still limited in number.	3.0
Constant changing of policies	2.9
Restrictions have resulted in licensing agreement contract law	2.8
Opposition of publishers fearing cut into their profitability	
	2.7

Table 3 shows some constraints faced by academics in the use of open access. All the suggested constraints were rated well above the acceptance level. But the highest rated constraints are infrequent power supply and insufficient internet connectivity with 4.0 mean score each. This is followed by low internet bandwidth in many institutions (3.8) and locally published scholarly articles lacking searchable formats (3.6). The other constraints scored between 3.0 – 2.7mean scores.

Research Question 4: What can be done to curtail the constraints?
Table 4: Suggestions for ameliorating the constraints.

S/n	To what extent would the following suggestions help in ameliorating the above constraints, if implemented	Mean scores
27.	Supply of regular power	3.2
28.	Increase internet connectivity and bandwidth	3.2
29.	Establishing websites for local contents	3.2
30.	Training and re-training of academics in computer skills	3.2
31.	Locally published works should be made easily accessible.	3.1
32.	Faithful implementation of policies.	3.0
33.	Stake-holders such as institutions and organizations should work hard to increase their repositories	3.0

Table 4 above solicited for suggestions that can ameliorate the constraints to the use of OA by academics as observed in table 3. The suggested items towards solving the problem of OA, if implemented, were rated as follows: Steady and regular power supply, increase in internet bandwidth, establishing website for local content and training and re-training of academics in computer skills, were each rated 3.2. Making locally published works easily accessible, scored 3.1,while increasing institutional repositories and faithful implementation of policies scored 3.0 each.

Discussion
The need for OA to scholarly publications cannot be over-stressed because of the importance of OA in the development of the society generally and the educational sector particularly. Other important aspects of OA to scholarly publications include: helping people to develop knowledge, values and skills to participate in decision-making that improves their lives. It gives access to knowledge which scholars need to transform the society and increase access to information, for the achievement of education for sustainable development (ESD) and Vision 20 – 2020 and so on. It is with respect to this great need of OA to scholarly publications for scholars and researchers to achieve ESD and Vision 20 – 2020, that the researchers critically analyzed the level of access to OA scholarly publications, constraints and ways of ameliorating the constraints to using OA by academics.

The evidence obtained in this study suggests that there is just slightly above average access to internet and scholarly publications to empower the education sector in South East Geopolitical zone of Nigeria. Also, access to scientific and technological information and government-funded research out-puts hovers around the average while access to full-text on-line scientific materials is less than average. This implies that OA to scholarly publications is still limited to a considerable extent and this poses a great doubt about its use in the achievement of ESD and Vision 20 -2020.

Given the limited access observed, effort was made to identify the factors which caused these constraints. The analysis shows that among several limiting factors to the use of open access, infrequent power supply, insufficient internet connectivity and low bandwidth were greatest constraints to the use of OA. This is consistent with Chigbu (2010) and Line's (1998) earlier efforts which found infrequent power supply, slowness of internet, and lack of effective and efficient use of ICT by majority of Nigerian scholars as restrictive factors to the use of scholarly journals. Other limiting factors that need attention include, lack of searchable formats for local contents, inability to use and distribute some publishers' works by scholars, opposition of publishers due to fear of cut into their profitability and constant changing of policies. The constraints mentioned by researchers confirmed the observations made by Chigbu (2010) that local scholarly articles lack searchable formats, and Ezema (2010) on the challenge of devising appropriate methods of dissemination of research findings in Nigeria. Shieber (2008) observed that scholarly publishing system was becoming far more restrictive than it need be. Publishers were actively opposed to open access, fearful that it would cut into their profit margin. Finally, some of the suggestions proffered to ameliorate the constraints include, among others, provision of regular power, increasing internet connectivity and internet bandwidth, establishing websites for local contents, making locally published materials easily accessible, training and re-training of academics in computer skills,

faithful implementation of existing policies made. Rettig (2008) is of the opinion that if information is made accessible, people will be connected to the information that matters in their lives, and information that will also tailor to the needs and cultures of the people. Unlimited access to information, especially in scholarly articles, would create an opportunity for all to learn, to grow and to know. It would also open many positive routes in education such as database subscriptions, assistative technology for the physically challenged, literacy programmes and information on new technologies and so on (Willinsky, 2006).

These suggestions can only be effective if they are faithfully implemented. Just like Line (1998) rightly observed, technology might help less developed countries to overcome their economic problems only if equipment are acquired and maintained, and there is a regular and reliable power supply.

Implications and Recommendations:

The central role of OA to scholarly publications in enabling academics and researchers access knowledge that help in decision making and improve the quality of their lives cannot be overstressed. What is more, with OA, there will be unlimited knowledge and information, scholars need to transform the society. Reduction of unequal access to educational materials, implies that more researchers would have equal access to resources and services. This would help them to identify and use the required quality of information, needed for ESD and Vision 20-2020.

It is also clear that our educational system has undergone policy changes which have not been too favourable for the system. For Nigeria to achieve sustainable development through access to available scientific knowledge and skills, policy makers have to be more pragmatic than theoretical and minimize the frequency of policy changes. This suggestion is based on the prescription of Doyle and Gass (2004) that, if the OA to scholarly journals are to benefit developing countries, the steps to achieve this goal should not be limited to policy changes or funding programs targeted at institutions in those countries. Rather this calls for stake-holders in virtually all countries and inter-government agencies to take initiatives to remedy the global imbalance in access to academic out-puts. The stake-holders should include government, funding agencies, public and private academic and research institutions, international organizations of scientists, policy makers and, most importantly, individual scholars who may decide to make their work available online.

Regarding imbalance in access to academic journals, it is important to recommend that our scholars need to undergo a series of training and re-training in the area of ICT in order to build up the skills needed to surf the internet freely, without hindrance arising from ICT illiteracy.

Furthermore, as Line (1998) pointed out, the basic technological infrastructures have to be in place and maintained by the government. For instance, infrequent power supply poses a big challenge to accessing information online; and there is very little internet coverage in Nigeria. Where it exists, the bandwidth is usually very low, giving rise to the problem of overload which hinders access to online journals. So, these facilities need to be put in place or improved upon. The problem of overload can be solved by installing more optical fibre cables and wider bandwidth.

Finally, publishers of local journals in Nigeria should whisper together and license their journals to online databases, so that scholars can access and use locally produced scholarly publications, as well as publish their works online. Although the initiatives to have open access to scholarly works in Nigeria have started, as pointed out by Ejikeme (2010), there must be sufficiently wide internet coverage, adequate bandwidth and regular power supply before this initiative can be effectively achieved.

Conclusion

From the findings of this study, OA to scholarly publications is very important in achieving ESD. This is because the study strongly confirms that OA helps researchers to have increased access to information for the achievement of ESD and Vision 20-2020; have improved access to knowledge that they need to transform the society; and also access knowledge that enables them take the right decisions that improve the quality of their lives. But the same study reveals that academics and researchers still have just average access to internet and scholarly publications. As revealed in the study, the use of OA to scholarly publications is laced with some constraints such as infrequent power supply, insufficient internet connectivity and low band-width, among others. As pointed out by Ejikeme (2010), there must be sufficiently wide internet coverage, adequate band-width and regular power before OA Initiative can be effectively achieved in Nigeria. As regards imbalance in access to academic journals, it is important to stress that our scholars need to undergo series of training in the area of ICT in order to build up the skill to surf the internet freely and without hindrance. Finally, publishers of Nigerian local journals should whisper together and license their journals to online databases, so that scholars will access and use locally produced scholarly publications, as well as publish works online. We shall be on the lane to achieve ESD and Vision 20- 2020 when most of the research findings and reports are freely available online, and the works of scholars in Nigeria are circulated as widely as possible and used to empower Nigeria's educational system and development.

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