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Open Access Resources Utilization in Information Society for National Development

[1]Peter Olubunmi Olubiyo and [2]Lydia Mercy Olubiyo

[1]College Library, Adeyemi College of Education, Ondo, Nigeria.
*Corresponding author's E-mail:olubiyopeter@gmail.com, Tel. +2348166392038
[2]Department of Library and Information Science, Kogi State Polytechnic, Lokoja, Nigeria.
E-mail: olubiyomercy@gmail.com, Tel. +2349063762872

The paper explored the meaning of open access and online academic publishing. In teaching and learning open access provides wide range barrier-free information to teachers and learners. The paper discussed the various open access journals, open access resource utilization and prominent open access publishers. It explained the role of open access in information society for national development. The paper concluded that among others that academic library resources should be digitized to allow for open accesses and faculty should publish online in the digital age for open access.

Keywords: Open Access Resources, Information Society, National Development

INTRODUCTION

Hedreen (2021) described "Open Access as resources that are freely available for viewing and/or use. Open Access is not the same as Public Domain, and most Open Access creators do retain their copyrights. Open Access is part of a continuum ranging from completely closed, subscription/purchase only access to completely open, no barrier publishing. Open Access is not related to the quality of materials or the peer-review/non-peer-review status of the publications. Open Access differs from Open Source or Open Licensed in that the primary use of Open Access materials will be viewing or reading, while Open Source materials are available for modification of the underlying software or text." For instance, Linux is an open source operating system, while the the Turkish online journal of distance education is an open access journal. An increasing number of Educational Resources are being published with Open Licenses, allowing for modification, re-editing, and other customization. In addition, Open Access Resources are research materials that have been made available to the general public, free of charge: data and datasets, books and articles, including scholarly research articles. This is not the same thing as public domain works, or those items that have fallen out of copyright protection; open access authors have chosen to share freely, so anyone can use the works legally without permission or fees (Hedreen, 2021).

United Nations General Assembly, (1966) in Bowdoin,(2011) expressed that for much of the previous century, it was rare for individuals outside of the library and information science field to view information work within a context of social justice, democratization or human rights despite the long standing public awareness that journalism, another information field, holds a key place in the area of open access. However, there has been a shift in this first decade of the 21st century. Individuals and organizations across the globe not normally associated with the library and information science world are recognizing the need for access to information if local and global social inequalities are to be redressed. As a result, librarians and information workers in both industrialized and less-industrialized nations have

new opportunities for increasing the significance of information work for achieving open access.

Similarly, United Nations General Assembly, (1966) in Bowdoin,(2011) opined that the Open Access (OA) Movement has been praised by proponents as a way to reverse the unsustainability of traditional scholarly publishing economic models and to aid in the equalization of the flow of information between industrialized and less industrialized nations. The OA Movement is thus also seen as a means of helping achieve fundamental human rights as presented in the Universal Declaration of Human Rights (UDHR) for national development. When examining the place of information in the human rights framework for national development, everyone shall have the right to freedom of expression; this right shall include freedom to seek, receive and impart information and ideas of all kinds, regardless of frontiers, either orally, in writing or in print, in the form of art, or through any other media of his choice.

In United Nations General Assembly, (1966) in Bowdoin,(2011) it was reported that an exploratory study used data gathered during a forty day period to compare the OA journal usage of researchers in African countries with that of researchers in Latin American and Caribbean (LAC) countries. Indexing and abstracting of African scholarly journals is also a key necessity if a more even flow of information from Southern to Northern countries is to be achieved and if the journals themselves are to be truly accessible to other scholars. Therefore, the study also examines the accessibility of indexing and abstracting coverage of African scholarly OA journals and compares the data with that of non-OA journals from the continent. I examine the relationship between current African OA usage and content production and the cultural rights expressed in the UDHR. The data suggests that, in contrast to LAC countries, African researchers are being less active consumers and more passive contributors to the OA model. OA is thus not yet contributing significantly to the reversal of North to South information flows in the African context nor is it yet making a significant impact on achieving the rights guaranteed in Articles 19 and 27 of the UDHR. The results also indicate that African OA publications are more accessible in the abstracting and indexing services than non-OA African publications, so an increased shift from non-OA to OA publications in African scholarly publishing may contribute to improving information flow reversal in the future.

Open Access Resources

McKerlich, Ives, and McGreal (2013) in Downes, (2011) described Open Access Resources as Open Educational Resources. Open Educational Resources (OER) can be defined as "materials used to support education that may be freely accessed, reused, modified

and shared by anyone" The high cost of textbooks is of concern not only to college students but also to society as a whole. Open textbooks promise the same educational benefits as traditional textbooks; however, their efficacy remains largely untested. We report on one community college's adoption of a collection of open resources across five different mathematics classes. During the 2012 fall semester, 2,043 students in five different courses used these open access resources. We present a comparison between the previous two years in terms of the number of students who withdrew from the courses and the number that completed the courses with a C grade or better. Our analysis suggests that while there was likely no change in these educational outcomes, students who have access to open access materials collectively saved a significant amount of money. Students and faculty were surveyed as to their perceptions of these materials and the results were generally favorable (Hilton, Gaudet, Clark, Robinson and Wiley, 2013).

Hanafizadeh, Hanafizadeh and Khodabakhshi (2009) in Schlichter and Danylchenko (2014) opined that the significance of conducting such evaluations and comparisons cannot be underestimated. "Without some indication of how all elements of society are adapting to the installation and application of ICTs for open access utilization, there can be no way of understanding whether the shift towards an information society is actually taking place, or indeed, working in positive ways". Furthermore, international assessments and comparisons are valuable tools for policy-makers, allowing the tracking of their country's progress against others, distinguishing leading states in terms of IS building and bridging the digital divide, by examining their best practice, which can be further implemented at national levels for open access utilization. However, the wide variety of measurement tools and frameworks available for application, creates difficulties in selecting the "best" or "right" measure and, thus, produces a number of questions: what indicators constitute the most widely used indices and what do they actually measure? How profound and realistic are these measurements? What actual conclusions can be made from these measurements for open access development in information society ?

Hanafizadeh, Hanafizadeh and Khodabakhshi (2009) in Schlichter and Danylchenko (2014) expressed that a framework that measures the actual levels of ICT usage guides policymakers in developing national strategies of responsive IS building. In 2003 the World Summit on Information Society made a call for measuring the state of Information Society (IS) building between countries. The purpose of the measuring was to assess and compare IS practices around the globe as well as share best practices for open access development. A number of measurement tools have since been developed, and a number of previously constructed tools have been employed to fulfil this goal. Even though many variations

in terms of indicators have been employed, the construction of measurement tools is subject to certain limitations. One limitation is that they do not incorporate these indicators on the actual levels of Information and Communication Technology (ICT) usage off the country's stakeholders for open access development. The most currently used indices for measuring the state of Information Society building from the perspective of their constituent indicators is based on the analysis of an alternative framework for IS measurement, addressing the important aspects of ICT usage quality. By applying the framework on measuring of ICT usage quality at Romania, Cyprus and Estonia, the usefulness is tested positive, and the need to evaluate the actual levels of ICT usage for the purpose of better policy-making, while establishing an information society, is accentuated.

Crow, (2009) in Bowdoin, (2011) made a discussion of the OA Movement and examine its relationship with cultural rights. A very succinct and common OA definition is "free and immediate online access to peer–reviewed journal literature. Following the 2001 Open Letter to Scientific Publishers signed by tens of thousands of scholars worldwide which called for "…the establishment of an online public library that would provide the full contents of the published record of research and scholarly discourse in medicine and the life sciences in a freely accessible, fully searchable, interlinked form.

Public Library of Science (PLOS), 2001 in Bowdoin, (2011) expressed that several international statements were released that have since formed the core of the OA Movement. Peter Suber, Senior Researcher at the Scholarly Publishing & Academic Resources Coalition (SPARC), and historian and researcher of the OA Movement, refers to these documents collectively as the good definition. Suber, (2004) and Suber (2007) in Bowdoin,(2011) stated that OA literature as digital, online, free of charge, and free of most copyright and licensing restrictions. Suber also clarifies that: OA is compatible with copyright, peer review, print, preservation, prestige, career-advancement, indexing, and other features and supportive services associated with conventional scholarly literature. The primary difference is that the bills are not paid by readers and hence do not function as access barriers.

The two primary methods for delivering OA to research articles are through OA archives or repositories and OA journals. Crow (2009) in Bowdoin,(2011) emphasizes that OA is a distribution model, not an income model. Income models that can be used to support the OA distribution model can be either supply-side or demand-side income models; however, supply-side models dominate. Although many authors generally believed that their work will have wider readership if published through OA avenues, studies to demonstrate the impact of OA articles are few; however, Antelman (2004) in Bowdoin,(2011), in her study examining OA articles in the disciplines of philosophy, political science, electrical and electronic engineering, and mathematics found that OA articles in these disciplines do indeed have a greater impact than articles that are not freely available.

From a philosophical perspective, Willinsky (2006) in Bowdoin, (2011) had discussed a broader "access principle", emphasizing that a commitment to the value and quality of research carries with it a responsibility to extend the circulation of such work as far as possible and ideally to all who are interested in it and all who might profit by it. Willinsky sees the OA Movement as both an extension of a long scholarly tradition concerned with extending the circulation of knowledge as far as possible and as a recent response to two conflicting current events in the history of scholarship: the steady escalation of journal prices at a rate greatly exceeding inflation over the course of two decades, and the advent of the Internet and digital publishing which created a viable alternative to a traditional publishing model. Willinsky draws attention to the fact that OA "speaks to extending the research capacities of developing nations, increasing public rights of access to knowledge, and furthering the policy and political contributions of research… Because of this, there is a great deal at stake when it comes to the potential impact of OA. In relating OA to human rights, Willinsky emphasizes that any discussion on OA essentially boils down to this one statement "At issue is who has a right of access to what is known. While Suber (2010) in Bowdoin,(2011) tracks the OA Movement's birth back to 1966 and the launching of the Educational Resources Information Center (ERIC) in the United States, it was not until the first decade of the 21st century that OA truly gained ground. The impact of OA has now been felt internationally in both industrialized and less industrialized nations, as evidenced by the fact that Nature, Science, Scientists, and the Wall Street Journal all ranked OA among the top science stories in 2003. Additionally, the Federation of Libraries Association's (IFLA) 2010 76th Conference theme "Open access to knowledge - promoting sustainable progress" is a further example of the widespread international acknowledgement that OA is changing the scholarly information landscape or society.

Use of Open Access Resources

Due to this general lack of available literature on the use and creation of OA content on the continent, the following exploratory study was designed with several goals in mind. First, the use of OA journals from within Africa was compared with use from another world region, Latin America and the Caribbean (LAC). The reasons for this choice of regions is explained as to compare the use of OA journals with the actual production of content from within Africa. Finally, as Yontz and Fisher (2007) in Bowdoin,(2011) have pointed out: "If open access journals are to fulfill their promise, their inclusion in the

indexing and abstracting services used by scholars and researchers is essential", so my final goal was to measure the extent to which African OA journals are being included in abstracting and indexing (A&I) services. It was also measured the extent to which these journals are accessible in Google Scholar, a free scholarly search service more likely to be used in many African countries due to the prohibitory expense of commercial A&I products. Geovisite, (2010) in Bowdoin,(2011) stated that to achieve these goals, data from the following resources were assessed: the Directory of Open Access Journals (DOAJ), Open Journals Publishing (OJP), African Journals Online (AJOL), Bioline International, and the Sabinet Open Access Journal Collection. DOAJ Use and Contribution: DOAJ provides a unique opportunity to examine the extent to which usage from African countries compares with usage from other parts of the world because the home website uses a geo-localization tool "geocounter" to track the location of visitors coming to the site.

DOAJ, (2010) in Bowdoin, (2011) asserted that DOAJ grew out of the 2002 First Nordic Conference on Scholarly Communication with the goal to create a comprehensive directory of OA journals that would be of service to the global research and education community for national development. The aim of the DOAJ is "to increase the visibility and ease of use of open access scientific and scholarly journals thereby promoting their increased usage and impact and to cover all open access scientific and scholarly journals that use a quality control system (peer-review or editorial quality control) to guarantee the content". At the time of this writing, it contained a total of 4,773 journals from all areas of the world, with 1889 of these journals searchable at the article level.

DOAJ use and contribution result show a comparison of the percentages between the number of journals coming from each world area, the usage of the DOAJ during the tracking period, and the percentage of regional population to world population. While South Africa and North Africa combined are close to twice the population of LAC, their percentage of use of the OA resource (South Africa – 1.6%; North Africa – 1.1%) and their production of OA content (South Africa – 1.1%; North Africa -- .3%) is significantly lower than that of LAC (use – 11.3%; production – 18.7%). It is also striking that while both South African and North African countries contributed a smaller percentage of journals to the DOAJ than their actual percentage of use of the service. The LAC countries production of OA journals was almost twice the percentage of their use of the service during the tracking period. This result implies that Christian's (2008) in Bowdoin, (2011) concern is in fact a real one, the objective of OA cannot be met if the African scholars are simply being "active consumers" while remaining "passive contributors". This appears to be primarily what is occurring with the DOAJ.

Open Access Journals

According to Agrawal (2014), the accumulation of the links of open access journal, researcher found that an open access journal is available almost for every subject. Instead of subscribing to a number of journals, the library may provide access to open access journals available on the Web.

Shidi, Nwachukwu and Ode (2020) expressed that there are countless benefits derived by researchers, educational institutions, businesses, the public, and research funders from open access journals. The benefits range from increased visibility, readership and impact of authors' works to increased competitiveness of academic institutions and capacity to meet the criteria for the institutions' rating. Other benefits are stimulation of new ideas, new services, new products, creation of better educated populace and encouragement of greater interaction with results of funded research.   The introduction of open access journals has affected the academic world significantly both globally and locally including Nigeria. Through it, great volumes of information materials have been released and made available to researchers worldwide which has enhanced research activities. To gather these journals a number of directories of open access journals such as DOAJ, Open-J-Gate, and Public Library of Science etc have been referred. However, broadly these journals could be categorized under following subjects:

Medical Science: Medical science is dominating open access world by having almost 18% open access journals in the subject. Medical science is a subject which is directly related to every single human being on the earth. Having maximum open access journals in medical science eased the research in medical and health sciences.

Education: Open access journals are also flooded in education. After medical science, education has the large number of open access journals published in several languages.

Life Science: Life science is another area where a number of open access journals are available. In life science, user may find journals dealing with biology, zoology, biochemistry, and biotechnology etc.

Chemistry: Chemistry also established as an attractive subject among open access publishers. More than 100 English language open access journals are available in various aspect of chemistry.

Literature and Linguistics: One may find a wide range of open access journals in literature and linguistics. Researchers working in this area may not get affected due to unavailability of subscription based scholarly

journals in their libraries as this area is covered hugely by open access publishers.

Others: As discussed earlier, open access journals are available on almost every subject. Subjects not discussed above also have good number of open access journals available online. Computer science, Engineering, Philosophy, History, Economics, Management, Generalia, Agriculture, Library and Information Science are the subjects that have more than 100 open access journals each in English language. Other subjects of social sciences, humanities, science, technology, arts, etc, have 10 to 100 open access journals in English language. However there is a need of open access journals in areas of naval science, nuclear physics, acoustics, environmental engineering, and hydraulic engineering. Today more than 10,000 open access journals of various subjects in a number of languages are available. In addition to this, there are various encyclopedias and books available without any restriction (Agrawal, 2014).

CONCLUSION

It was concluded that academic libraries should promote awareness about Open Access to faculty through workshops, public lectures, meetings and conferences for them to publish in online open access journal. Currently, the librarians are experiencing paradigm shift from service providers to publishers, so the department of Library and Information Studies should consider this issue and include more Open Access course curriculum.

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