

AWARENESS AND UTILIZATION OF OPEN ACCESS JOURNALS FOR EFFCETIVE RESEARCH BY POLYTECHNIC STUDENTS IN POLYTECHNIC LIBRARIES IN GOMBE STATE, NIGERIA

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ABSTRACT

This study explores awareness and utilization of open access journals for effective research by polytechnic students in polytechnic libraries in Gombe state, the research employs descriptive survey research design, consisting of an observation checklist and questionnaire administered to polytechnic students in polytechnic libraries in Gombe state, Nigeria. four specific objectives were formulated covering; availability of open access journals in polytechnic libraries in Gombe state, Nigeria, ascertain the level of awareness of open access journals, ascertain the purpose of utilization of open access journals by polytechnic students for effective research, ascertain the extent to which polytechnic students utilize open access journals for effective research activities by polytechnic students in Gombe state polytechnic, Bajoga {GSPB}, Federal Polytechnic Kaltungo {FPK}. The total population of this study consists of 1567 polytechnic students in the 2022/2023 academic year in the two polytechnics in Gombe state, north-east, Nigeria. The sample for this study is 160 polytechnic students and the sampling technique is multi stage sampling. The questionnaire responses were used to identify the level of students' awareness of open access journals, and to explore the students' utilization of the resources. Data was analyzed with the use of frequency, percentage, mean and standard deviation for answering the research

questions. The findings of the study recommended that polytechnic budgetary allocation to polytechnic libraries should be improved so that they can subscribed to more OAJs, computer room or ICT centers should be created in department and faculties in order to ease congestion and make it easily to utilized by Polytechnic students. Polytechnic libraries should also create more user education programmes especially on utilization of OAJs, alternative source of power should be provided,

Key words: Awareness and Utilization, Open Access Journals, Polytechnic Students, Effective Research, Polytechnic Libraries.

Introduction

Polytechnics is an institution of higher learning that provides facilities for teaching and research which prepares individuals for the award of academic national diploma and higher national diploma. It comprises people with diverse backgrounds in terms of needs, skills, talents, status, competencies, knowledge, behavioral styles, interest, and perceptions (Nakpodia, 2019). The basic priority for the establishment of the Polytechnics is for the pursuit of knowledge, research, the center for information provision of intellectual leadership, and manpower development. According to the National Policy on Education (NPE), (2014), the aims of Polytechnic education are; the acquisition, development, and inculcation of proper value, orientation for the survival of the individual and the society, the development of the intellectual capacities of individual to develop into useful members of the community, the acquisition for an objective view of the local and external environment. The Polytechnics are categorized into groups which include; federal Polytechnics, state Polytechnics, and privately-owned Polytechnics. A federal Polytechnic is a Polytechnic that is established and owned by the federal government. This Polytechnic is a Polytechnic that is maintained and regularized by the federal government.

A library in any Polytechnic system is seen as the bedrock upon which any Polytechnic is built. As asserted by Ekere (2014), Polytechnic library plays an important role in complimenting research through the provision of facilities and appropriate information resources in various formats (including print and non-print). In the same vein, the major aim of the library according

to Oriogu, Chukwuemeka and Oriogu-Ogbuiyi (2018) is to promote the tripartite objectives (teaching, learning and research) of education through the provision of adequate and relevant information resources (in both print and non-print format) and services to the users. This is why Shehu, Urhefe and Aworo (2015) stated that academic libraries stand to support teaching, learning and research in ways consistent with, and supportive of the institution's mission and goals. The Polytechnic libraries therefore, provide essential services that facilitates teaching and research by provision of relevant information resources at different formats.

. Awareness is defined as an understanding of the activities of other, which provides a context for your own activity (Dourish, 1993). Oragwam (2014) described awareness as a state of consciousness and purpose. Similarly, Chinedu (2015) viewed awareness as the condition of being aware and able to understand what is happening around one. Awareness is the state of ability to perceive, to feel or to be conscious of events, objects or sensory patterns. Awareness means having idea of the existence of something. In relation with above views Wikipedia (2009) equates awareness with knowledge of, understanding of, appreciation of, recognition of, attention to perception of something.

Research as a concept is a purposeful search for solution to an identified problem or new knowledge. Research is defined as undergraduate student's project writing which serve as a basic requirement for the award of Bachelor of Science degree in any discipline (Ugbagir, 2010). Research has been defined as man's systematic and empirical investigation into existing but hidden elements in nature with a view to unearthing, restructuring and explaining such element for the purpose of development (Ifidon and Ifidon 2017). Reitz (2015) also describes research as a systematic painstaking investigation of a topic or in a field of study often employing technique of hypotheses and experimentation, undertaken by a person intent on revealing new facts, theories or principles or determining skill and identification of research problems. Research therefore comprises of creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of people, cultures and societies, and the use of this

stock of knowledge to devise new applications. Research aims at producing new and better goods and services and developing new and better ways of offering or distributing them. Research as the source of knowledge generation occupies a critical position in promoting the prosperity of a nation and its citizens' well-being particularly in this knowledge driven era.

Effective research is also known as good research which is replicable, reproducible, and transparent. Replicable, reproducible, and transparent are some of the most important characteristics of effective research. The effectiveness of a research study is important because this allows other researchers (postgraduate students) to test the study's findings. Effective research has been defined as research that has the sole purpose of creating or furthering knowledge (ARTIFACT, 2020). Effective research also tends to be theoretically focused, and its findings are evaluated through a peer review process and made public through scholarly journals and academic conferences. In many cases, effective research is defined in contrast to professional research. Also called applied research, professional research is carried out to find solutions to practical problems. This research is also commonly organizationally focused (Belmont University, 2021).

In conducting research, therefore, open access journals (OAJ) are found to be faster to consult than print resources. They can provide vast quantity of up-to-date information to researchers irrespective of their geographical location among other benefits. Tyckoson (2011) affirms that libraries and information centers which fail to adopt appropriate information technology in their services may cease to function and perhaps, close down. Open access journal is a free information available on the internet that allow and permitting any users to read, download, copy, distribute, print, search, or link to the full text of these articles. And also crawl them for indexing, pass them as a data to software, or use them for any other lawful purpose without financial, legal or technical barriers other than those in separable from gaining access to the internet itself. In addition, open access is a serial publication in which the end product is

made available in digital format. It is a publication often scholarly that is made accessible in a computerized format and distributed over internet.

Utilization is the process of use. According to Omekwu (2002) also opines that utilization is a stage where an individual uses the information, and the main functions of the utilization stage are to actually use the trial results and continue or discontinue its innovative use at a later date. Users now tend to use only what is easily accessible and available. Utilization of open access journal has brought about significantly different products and services in the library where services offered presently differ from those offered in the past. The term 'use' considers the extent to which people are making use of whatsoever resources that are already available in the community or in an organization (Omekwu, 2002). In this context, use means the extent to which open access journals are being used for effective retrieval of information services. Utilization of open access journal is a multidimensional construct that can be examined from various perspectives been an elusive concept determined by the task, users, the product and the environment

In conducting research, many sources need to be consult. The consultation of these sources makes the research valid and effective, and make contribution to the development of the society. In view of this, open access journal is one of these sources that researchers consult in their research activities. Therefore, to the best knowledge of the researcher, it has been discovered that polytechnic students in Gombe state are not aware of open access journal as discovered as one of the major sources of getting effective and relevant information. Furthermore, since the polytechnic students are not aware of open access journal this promote the in ability to access relevant and effective information. Based on this setback that the researcher intent to investigate on utilization of open access journal for effective research in Polytechnics in Gombe state, Northeast, Nigeria.

Statement of the problem

One of the importance of open access journal to polytechnic students in research is that it promotes more access to information in remote areas. Another importance of open access journal they provide up-to-date information to polytechnic students in research activities. Also, open access journals are more flexible in providing information. it can be easily to use by editing, manipulation and transfer of information from one document to another. Open access journal also saves time of polytechnic students in research activities. They also be used simultaneously by many polytechnic students at a time. Use of OA Scholarly publications by scholars and researchers assists them in updating their knowledge and research. Open access journals provide numerous benefits to users. They save or minimize cost, time, and free access to publishers to publish their works and provide most current information to students for learning, assignments and research activities anywhere at any point in time. The emergence of Internet technology and the growing popularity of Open Access journal scholarly publication model over the years have ignited many polytechnic students resolved to use this model to satisfy their ever-increasing information needs. Curiously, the researchers observed that despite the potentials of Open Access publications, there are many polytechnic students in Nigeria who are not fully aware of the inherent benefits accruing from the use of such system.

It has been observed that polytechnic students in Gombe state are not aware of open access journals in conducting their research. However, despite the importance of open access journals to polytechnic students research activities but, not yet the polytechnic students of Gombe state are not properly utilizing open access journals. The causes could be lack of awareness or poor searching skills or poor internet connectivity. It could also be lack of accessibility to ICT facilities (computer, smart phones etc.) or power failure, it could also be users' dissatisfaction. If polytechnic students of Gombe state are not properly utilizing open access journals in their research activities there must be a consequence such as: un-productive research, in-effective result and it affects teaching and learning process which lead to poor academic performance. However, to the best of knowledge of the researcher there is no known

empirical research in the field of library and information science which examines the utilization of open access journal for effective research by polytechnic students in Gombe state. Hence, the need to fill the gap.

Purpose of the study

The general objectives of the study is to ascertain the extent of awareness and utilization open access journal for effective research by polytechnic students in Gombe state.

Specific objectives of the study are;

1. What is the level of awareness of open access journal for effective research by polytechnic students in Gombe state?
2. What is the mode of utilization of open access journal for effective research by polytechnic students in Gombe state?
3. What is the extent to which utilization of open access journal contribute to effective research by polytechnic students in Gombe state?
4. What are strategies to enhance awareness and utilization of open access journals for effective research by polytechnic students in polytechnic libraries in Gombe state?

Literature Review

Open access journals Suber, (2010) describe open access journal as digital online and free of charges. Open access journals are regarded as digital literature that are online and free from charges as well as copy right restriction. The Global network on Global public Goods (GPGNET) (2005) as cited in Okeye and Ejike (2011) define open access journal as available on the internet permitting users to read, down, copy, distribute, print, search, or link to the full text of the article.

Similarly, Kundart, (2013) describe open access journals as immediate online no cost available of scholarly articles unlocked for everybody to see and use. Majanja, (2009) as well as Okeye and Ejikeme, (2011) nevertheless stressed the need for users to acknowledge authors through

proper citations of consulted or reference work. Journals are important resource vehicle for global scholarly communication. Singh & Bebi (2012) stated that journals play a role in the research and development activities and undisputedly are considered primary channels of information dissemination. However, sweeping changes in information communication technologies (ICTs) in recent years have given an amazing boost to electronic publishing. This event marked the paradigm shift in scholarly communication, from printed journals as the principal medium of communication to electronic journals.

Open Access (OA) serves as a crucial function in academics and research. It ensures unrestricted access to information resources and services. It has an affirmative result on research whereby it increases ease of access to information, usability, productivity and sustainability among scholars. OA is a broad terminology for information resources which are always accessible to the information user community so as to utilize and open for use to a wider range, with no hindrances or charges (Pinfield, 2015). OA came up as a substitute due to the exorbitant cost of library journal subscriptions, Lewis (2012). It is a platform that allows scholars to disseminate their research findings more widely without incurring article processing fees (Woszczyński & Whitman, 2016). The three definitions of OA statements include the Budapest Open Access Initiative from February 2002, the Bethesda Statement on Open Access Publishing June 2003 and the Berlin Declaration on Open Access to Knowledge in Science and Humanities. The fundamentals of OA scholarly publishing are agreed upon by all the statements. These statements point out that OA resources allows end users to consume, transfer, reproduce, print, examine, or connect to whole text, genuine use for authentic reasons and if the materials can be accessed using the internet (Budapest, 2003).

OA in the technological age is a term used to describe the act of creating scholarly peer-reviewed journals and articles freely available to anybody, anywhere on the internet. For any user published in peer-reviewed journals, OA means free, permanent, immediate, full text and online access. It gives direct connections from publishing bibliographical data to the entire text. It also

gives all web users free access to scientific articles. OA library materials include resources that are freely accessible to anybody at any time without any limitations. (Joshi et al. 2012). As a result of the OA movement, OA library resources have various advantages for users such as faculty members, scholars, libraries, librarians, researchers among others. It provides free access to information resources without any cost implications, which is one of the OA libraries resources strengths.

Harle and Powell (2009:214) point out that high quality research is critical to international development and that the ability of developing countries to respond effectively to the complex and multi-layered challenges which they face will depend fundamentally on their ability to undertake rigorous high-quality research. They emphasize that if research is crucial to development, then information access is critical as the lifeblood which animates the scientific and scholarly endeavour and enables the higher education system to operate. They conclude by stating that strengthening developing country research therefore means strengthening the information and communication cycle. Limited resources; both infrastructural and intellectual, result in information - poor communities. The limitations in access to current research output are caused by such factors as prohibitive proprietary publication costs, poverty and lack of adequate ICT infrastructure. It is prudent, notwithstanding the above factors, for communities to take advantage of ICT advances that now enable access to some of the best research at no charge other than internet access, through what is commonly termed open access. Open access (OA) publishing has significantly changed access to research resources for researchers who previously could not afford access to current, relevant, peer-reviewed, scholarly work; and it is all at the click of a button. Open access publishing (OA) radically increases the resources at the disposal of many marginalized communities leading to the reduction of global disparities in so far as access and dissemination of information is concerned.

Methodology

Design of the study

The study adopted descriptive survey research design. Asenahabi (2019) define descriptive survey as a given state of affairs which exist at a particular time and requires a direct contact with individual whose characteristic, behaviors and attitude are relevance to the investigation. It deals with questions that seek to find out about the nature of the target population and it is best utilize when control of dependent and independent variables is not easily achievable or desirable (Wabwoba and Ikoha, 2011). This design is considered appropriate for this study because it offers the best method for exploring human behavior and will aid the researcher to thoroughly investigate the background of the problem, actual situation, opinion, attitude and feelings of postgraduate students on the utilization of open access journals for effective research in Gombe State.

The Population

The population of the study comprises of one thousand nine hundred and seventy-three (1611) polytechnic students enrolled in the polytechnic under study. In a preliminary investigation by the researcher, the strength of polytechnic students registered in the 2022/2023 academic session in the polytechnic under study is one thousand nine hundred and seventy-three (1973) comprising eight hundred and thirty four (834) polytechnic students from Federal Polytechnic Kaltungo Gombe State (FPK), seven hundred and eighty seven (787) from Gombe state Polytechnic Bajoga (GSPB).

Sample and sampling technique

To determine the sample size for the study, the researcher used Taro Yamane for calculating the sample size with a ninety five percent level of significance and the 0.05 merging of error.

Method of Data Analysis

The data obtain in the questionnaire will presented in table and analyze using frequency and mean. The researcher considers the average mean of 2.50 and above accepted. While any mean score below average is rejected. The score of mean was calculated using 4 rating scale. Heightening attached to the response option of: Strongly Agree (4 points), Agree (3 points), Disagree (2 point), and Strongly Disagree (1 point). Or equivalent as the case may be. Hence,

$$\frac{4+3+2+1}{4} = \frac{10}{4} = 2.50$$

RESULT

Research Question 1 What is the level of awareness of open access journal for effective research by polytechnic students in Gombe, Nigeria?

Table 1

S/N	ITEMS	X	S. D
1	Biomed central	2.94	0.54
2	Plos	3.10	0.49
3	PeerJ	3.07	0.64
4	Open Library of Humanities	3.22	0.47
5	Ubiquity	3.12	0.58
6	Frontiers	3.26	0.44
7	MDPI	3.18	0.47
8	SCIRP	3.15	0.60
9	Journal of Artificial Intelligence	2.57	0.87
10	Journal of Diary Research	3.08	0.55

Keys: HA= highly aware, A= aware, FA = fairly, NA= Not aware.

The result in table 1 above shows an impressive response of polytechnic student’s level of awareness of open access journal (OAJs) in both polytechnic libraries. The respondents in Federal Polytechnic Kaltungo (FPK), Gombe state Polytechnic Bajoga (GSPB), shows that the students are aware of OAJs and have their mean value ranged from 2.84-3.27. This showed that

the mean value of each item was above the cut-off point 2.50, indicating that all the 10 items on the awareness of OAJs by Polytechnic students for effective research in Gombe state Polytechnic Bajoga (GSPB), libraries in. The table also showed that the standard deviations (SD) of the items are within the range of 485-729, is aware. This indicated that the mean respondents were not far from one another in their responses.

Research Question 2 What is mode of use of open access journal by Gombe state Polytechnic Libraries?

Table 1

S/N	ITEMS	X	S. D
1	Biomed central	2.94	.541
2	Plos	3.10	.497
3	PeerJ	3.07	.646
4	Open Library of Humanities	3.22	.417
5	Ubiquity	3.12	.588
6	Frontiers	3.26	.441
7	MDPI	3.18	.475
8	SCIRP	3.15	.604
9	Journal of Artificial Intelligence	2.57	.872
10	Journal of Diary Research	3.08	.556

Keys: R = regularly, O = occasional, R= rarely, NA = not at all

Table 2 shows the mean and standard deviation response of the mode of use of OAJs for effective research. The respondents agree that 8 items on OAJs were used for effective research and have their mean value ranged from 2.57-4.00. This showed that the mean value of each item was above the cut-off point 2.50, indicating that 8 out 10 items on the mode of used of OAJs by Polytechnic students for effective research in Gombe state. The table also showed that the standard deviations (SD) of the items are within the range of 417-872. With this cluster mean of 4.00 and standard deviation 4.785, these results suggest that the extent of agreement of Polytechnic students on the mode of use of OAJs is moderate.

Research Question 3 What is the extent to which utilization of open access journal contribute to effective research by polytechnic students in Gombe state?

Table 3

S/N	Items	X	S. D
1	Biomed central	2.78	0.75
2	Plos	2.78	0.70
3	PeerJ	1.10	0.38
4	Open Library of Humanities	1.10	0.38
6	Ubiquity	1.10	0.38
7	Frontiers	1.10	0.38
8	MDPI	1.10	0.38
9	SCIRP	1.10	0.38
10	Journal of Artificial Intelligence	1.10	0.38

Keys: VGE= very great extent, GE= great extent, LE= low extent, NE= not extent

Table 3 shows the summary of the mean and standard deviation responses of the respondents in polytechnic libraries in Gombe on the extent of utilization of OAJs by Polytechnic students contributes to effective research. The results show that the items were utilized and contribute to low extent and their order of significance is shown in table 3. The respondents utilize 2 out of 10 items on OAJs. That means OAJs were underutilizing which result to not contributing for effective research and have their mean value ranged from 1.10-2.93. This showed that the mean value of 8 out of 10 items was below the cut-off point 2.50, on the extent of utilization of OAJs by Polytechnic students contribute poorly for effective research in Polytechnic libraries in Gombe state. The table also showed that the standard deviations (SD) of the items are within the range of 0.38-0.75 With this cluster mean of 1.10 and standard deviation 383, these results suggest that the extent of utilization contribute poorly to effective research of OAJs by Polytechnic students is low.

Research Question 4 What are strategies for utilizing open access journal by polytechnic students in Gombe state Polytechnics?

Table 4

S/N	Items	X	S. D
1	Adequate network connectivity	3.14	0.48
2	Adequate and stable power electricity	3.24	0.70
3	High bandwidths should be provided	3.10	0.60
4	Training on searching skills should also be provided	3.12	0.58
5	Uninterrupted subscription should be made	3.22	0.45
6	More sources should be created	3.08	0.52
7	More subscription to on unsubscribed journals	3.10	0.57
8	Librarians' attitudes should change	3.20	0.63
9	ICT facilities should be maintained for long time usage	3.18	0.51
10	Qualitative storage devices should be purchase	2.57	0.99

Keys: VA= very agree, A= agree, LA= low agree, NA= not agree

Table 4 shows the mean responses and the standard deviations in the options of Polytechnic students on the strategies for the improvement of polytechnic student's awareness in the use of OAJs for effective research. The mean ratings of Polytechnic students on each of item's statement were within the ranged of 2.57-3.27. This showed that the mean value of 10 items was above the cut-off point 2.50. With a cluster mean of 2.56 and standard deviation of 0.99 this implies that all the suggested strategies were appropriate.

Recommendations

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

1. Polytechnics budgetary allocation to university libraries should improve so that Polytechnic libraries can subscribe to more OAJs.
2. Computer room or ICT centers should be created in faculties and departments to ease congestion and make it easily utilize to Polytechnic students. This would no doubt enable them to have wider utilization to more and current OAJs without restriction of space and time.

3. Polytechnics libraries should give more user education program on the available OAJs. Current awareness services, selective dissemination of information on OAJs should be identified by university library staff to users of the libraries.
4. Polytechnics library should properly train personnel on how to manage OAJs the personnel should be committed to providing the polytechnic students with require information resources and services.
5. All the strategies proffer by the researchers should be implemented such as: Adequate network connectivity, Adequate and stable power electricity, High bandwidths should be provided and Training on searching skills should also be provided.

Conclusion

A lot of electronic information resources (OAJs) are available to postgraduate students in federal university libraries in Northeast, Nigeria which they can tap to carry out their academic activities and research endeavor. Among these electronic information resources are E-journals, AGORA, MEDLINE, EBSCO, HINARI, OARE, Science Direct, E-newspapers, E-magazines, Online Database, internet services and CD ROMS, institutional repository, E- theses, E-lecture notes, institutional repositories, E-research, E-encyclopedias, E-Dictionaries etc. Institution wise, Federal Polytechnic Kaltungo were reported the highest level of availability of OAJs compared to Gombe State Polytechnic. The study also found that the postgraduate students of the federal university libraries in Gombe State are aware of the OAJs and they have very low extent of utilization.

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