

*Full Length Research*

# Digital Reference Resource(s) Utilization for Effective Research Output by Postgraduate Students in Delta State University Library, Abraka, Nigeria

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This study investigated the Digital Reference Resource(s) Utilization for Effective Research Output By Postgraduate Students in Delta State University Library, Nigeria. . The study has four specific objectives and research questions. Descriptive survey research design was employed for the study. The population size is 3414. It consists of 3311 postgraduate students and 1 head of reference section. The sample size is 341. Multi-stage sampling was used to determine the sample size. 77 item questionnaire titled: Digital Reference Resource Utilization Questionnaire (DRRUQ) was used to collect data from the postgraduate students. Descriptive statistics was used to determine mean scores and standard deviation. The findings reveal that there is a high level of postgraduate students' (PGs) research output; digital reference resources such as websites, databases, e-journals, e-books and mobile services are provided and used in the libraries while some are less provided and used. Based on the findings, some of these recommendations were made.

**Keywords:** Digital Reference Resources, Utilization, Effective Research Output, and Postgraduate Students.

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## INTRODUCTION

The objectives of the University Library are to support the Academic and Research goals of the University. These objectives are aimed at supporting the university in training and grooming people in various professions or human fields. Ekere (2006) averred that a university library is central to the university's objective of promoting research and scholarship. Taiwo (2012) opines that the objectives of a university library are to ensure maximum usage of resources and services by the users. Ifidon (2007) enumerated some of these objectives as follows: provision of materials for postgraduate instruction; term papers and projects as well as materials for supplementary reading; provision of materials in support of post-graduate research; provision of materials in support of faculty, external and collaborative researches; provision of expensive standard works especially in the professional disciplines; provision of materials for personal self-development; external relationship and inter-library cooperation and stimulation of interest in the printed world. It is worthy to state that the objectives of the university library determines the roles it plays in the university through the provision of library and services.

The University library plays important roles in the life of a university. In a bid to elucidate the importance of a university library, Aguolu (1996) affirms that a university library is the most important organ of the university. He further revealed that the academic health, intellectual vitality and effectiveness of any university depend largely on the state of health and excellence of its library. The university library is the university's principal instrument in the conservation of knowledge

through its rational, systematic and comprehensive acquisition of all types of human communication records, published and unpublished, written or oral in recorded form that embodies the ideas of knowledge of the past since each new idea or invention grows out of accumulated and conserved knowledge (Daramola, 2016). By effectively delivering these roles, the university libraries support the academic and research activities of the university, as its essence of existence is to foster academics and research.

Research is a scientific and systematic investigation aimed at unraveling facts on the state of a phenomenon. Research is aimed at identifying a problem and finding a solution to the problem through the use of scientific methods. According to Nworgu (2015), research in general has to do with an enquiry into the unknown. It is the search for solution to problems or answers to questions, filling knowledge gap, contributing to existing knowledge and unraveling facts. Bently and Kyvik (2013) views research as a systematic investigation into any aspect of education. Knowledge acquired from research when translated into practice contributes to education through improvement in educational outcomes and refinement in skills, leading to improved standards of societal development.

The essence of assigning supervisors to research students is to ensure that they produce quality and reliable research findings that will help improve a situation. As a mandatory requirement, students carry out scientific researches which are presented as long essays, project reports or thesis. After conducting research at the completion of their academic work, students are advised to publish their research findings for consultations and use. It is expected of the students to utilize a relevant channel or research output to disseminate the findings in their research. The essence being that research is valueless and worthless if it is not published for use and consultation; thus, the mantra, "publish or perish". Research output is the channel through which the research findings or results are disseminated for use. Research outputs include: publications (books, journals), conveyance, presentation in seminars, conferences, workshops, symposia and outreach programmes. According to The University of Spectrum books Ltd

Sezen, Barney, Atwater, Pederson, Pederson, Chandler, and Paterson, (2016a) research output is a particular dissemination, publication, presentation, communication or pathway in which research is made available to people other than the author. Research outputs, as the products generated from research, include the means of evidencing, interpreting, and disseminating the findings of a research study (European Science Foundation, 2011). Research output could be seen as a publication, report or creative output, including but not limited to: journal articles, conference contributions, chapters, reports, books, internet publications, design, presentations, grant applications, etc. In order to achieve effective research output, the library need to be well-equipped with information resources especially digital reference resources.

Effective research output is the state where the various media of disseminating research findings are readily available and utilized by postgraduate students. Abbott and Doucouliagos (2003) discovered that research income, academic staff and post-graduates are all positively associated with research output. Effective research output could be seen as a situation where there are no factors affecting the dissemination of the research findings. Supporting this, Abiddin (2012) noted that such research outputs acts as a core of excellence and prioritized in any nation which can generate high impact research publications as well as attract the best brains for teaching and research in producing high standard graduates. Mutula (2009) identifies some qualities that ensures effective research output which are applicable to the library to include the: excellence of its library facilities; quality of ICT infrastructure, and use ICT in teaching and research, availability of digitized local content, functional institutional repository etc. No research can be successfully conducted without the use of information resources. Thus, the library plays vital roles in contributing to effective research outputs of the users through the provision of library information resources.

Library and information resources are those educational materials provided by the library for consultation and use. University library acquires, organizes, preserves and stores them in an organised manner for easy access and retrieval. Library and information resources are provided to meet the information needs of the users. They are often referred to as information materials, information resources and library collections/materials. Olofinsawe and Oyeniyi (2010) affirmed that academic libraries have to build a strong collection of information resources in physical and digital format to cater for knowledge requirements of their users

In the contemporary ICT age, library resources come in various media such as: print, digital or electronic media. Recently, much advocacy have been made on digital or electronic library and information resources provision because of the challenges posed by the Internet. Thus, Adeoye and Popoola (2011) notes that library information resources can be in both printed and electronic formats including textbooks, journals, indexes, abstracts, newspapers, magazines, reports, CD-ROM databases, internet, email, video tapes/cassettes, diskettes, computers and microforms. In the contemporary librarianship practices, much attention is being channeled to the digital, electronic or non-print resources of the library because digitization has been embraced in the profession. Hence, the reference resources are now found in digital formats called digital reference resources (DRRs).

Digital practices are a global best practice in the library and information science (LIS) profession. This was achieved through the integration of Information and Communication Technologies (ICTs) in library duties and functions. Digitization has greatly enhanced library service provision, and contributed immensely in meeting the information and

social needs of the users. Hence, reference services which is one of the essential services provided by the library and information centers have also undergone digitize process in order to reach users across geographical locations; and to provide round the clock (24/7) answer to users' queries. For these reasons every university library should be equipped with digital reference resources (DRRs) in order to meet global practices in information provision business. These resources will contribute immensely to the research activities of postgraduate students. Thus, create enablement for efficient research output.

### **Purpose of the Study**

The specific objectives are to:

1. Determine the research output of postgraduate students in the Delta University library
2. Find out the digital reference resources provided for postgraduate students in the library;
3. Determine the extent of utilization of digital reference resources by postgraduate students for effective research output in the libraries under study;

### **Research Questions**

The following research questions formulated in line with the specific objectives guided the study:

1. What are the research outputs of postgraduate students in the Delta State University Library?
2. What is the digital reference resources provided for postgraduate students in the Delta State University library?
3. What is the extent of utilization of digital reference resources by postgraduate students for effective research output in the libraries under study?

### **METHODOLOGY**

The design adopted for this study was descriptive survey design. Descriptive survey design according to Nworgu (2015) is a research method that involves those studies which aims at collecting data and describing in a systematic manner the characteristics, features or facts about a given population, it is usually concerned with description of events as they are. The area of this study is Delta State Nigeria. The State is made up of 3(three) senatorial districts, each has a University. There are four universities in Delta State, which are: Delta State University, Abraka, University of Delta, Agbor (formerly College of Education, Agbor), Delta State University of Science and Technology, Ozoro (formerly Delta State Polytechnic, Ozoro) and Dennis Osadebay University, Asaba, (formerly Delta State University, Anwai Campus). For the purpose of this paper only, Delsu only was used because they have Postgraduate students.

The population of the study is 3414 in three faculties. The Faculties are Education, Arts and Social Sciences. The population of the study consists of Delta State University Abraka, 3411 postgraduate students and 1 head of reference section of the library. The sample size of the study is 341, which consists of 338 postgraduate students and 1 head of the reference section. Multistage sampling technique was adopted for the study. In the 1<sup>st</sup> stage, purposive sampling technique was adopted in selecting one out of the 4 Universities Libraries in Delta State, Nigeria. Purposive sampling is also known as judgmental, subjective and selective which can be very useful in situations when there is need to reach a targeted sample quickly (Crossman, 2014). The technique was adopted because the three selected university libraries have digitized their services including the reference service than the others. In the 2<sup>nd</sup> stage, random sampling technique was used in selecting the postgraduate students. Random sampling technique was adopted because it gives every respondent equal chance of being selected in the study. Thus, the copies of the questionnaire were distributed randomly to the postgraduate students. Data relevant for this study was collected with structured questionnaire. Descriptive statistics was used in analyzing the data. It was used to determine the mean score and standard deviation of the users' response. Data collected was analyzed in line with research questions 1 –3.

## Analysis of Data

**Research Question 1:** What is the level of research outputs of postgraduate students in the Delta University library?

**Table 1.** Mean rating of postgraduates response'on the level of postgraduate students' research output

s/ n	Items	EDU	ARTS	SOC SCI	Mean sum	Std. Dev	Rank	Decision
1.	Seminar presentation	3.35	3.33	3.45	3.37	.77	1 <sup>st</sup>	HL
2	Talk show	2.99	2.72	2.81	2.84	.99	8 <sup>th</sup>	HL
3	Enlightenment programmes	3.08	2.84	3.20	2.28	1.11	12 <sup>th</sup>	LL
4	Paper presentations	2.95	2.94	3.34	3.07	.97	4 <sup>th</sup>	HL
5	Book publications	2.87	2.66	3.11	2.88	1.02	7 <sup>th</sup>	HL
6	Articles in international journals	2.96	2.81	3.08	2.95	.99	6 <sup>th</sup>	HL
7	Articles in local journals	2.90	3.14	3.06	3.03	1.01	5 <sup>th</sup>	HL
8	Thesis	3.12	3.15	3.25	3.17	.91	3 <sup>rd</sup>	HL
9	Projects	3.20	3.36	3.25	3.27	.91	2 <sup>nd</sup>	HL
10	Publications in academic blogs	2.90	2.71	2.74	2.78	1.00	10 <sup>th</sup>	HL
11	Publications in academic network groups	2.89	2.82	2.74	2.81	1.03	9 <sup>th</sup>	HL
12	Articles in newspapers, magazines	2.80	2.40	2.75	2.65	1.05	11 <sup>th</sup>	HL
<b>Grand Mean</b>		<b>2.92HL</b>						

Table 1 shows the result on the level of research output of postgraduate students (PGs). The result shows that there is high level of PGs research output with 2.92 grand mean score. The highest ranked research output is seminar presentations with 3.37 mean score, other high level rated research outputs of are projects, and conference paper presentations. However, enlightenment programmes is rated on low level and lowest ranked with 2.28 mean score. Consequently, the standard deviation score range from 1.11 to .77 depicts high variance in the PGs responses.

**Research Question 2:** What are the digital reference resources provided for postgraduate students in the Delta State library?

**Table 2.** Mean rating of postgraduates' response on digital reference resources provided for postgraduate students research

s/ n	Items	EDU	ARTs	SOC SCI	Mean sum	Std. Dev	Rank	Decision	P =
1	E-books	2.81	2.63	2.95	2.79	.95	4 <sup>th</sup>	P	
2	E-journals	2.70	2.72	2.98	2.80	.91	3 <sup>rd</sup>	P	
3	Websites	3.10	3.11	3.13	3.11	.94	1 <sup>st</sup>	P	
4	Databases	3.09	2.98	3.08	3.05	.97	2 <sup>nd</sup>	P	
5	E-theses	2.41	2.42	2.65	2.49	1.02	6 <sup>th</sup>	LP	
6	Digital reference platforms	2.51	2.42	2.47	2.46	.91	7 <sup>th</sup>	LP	
7	Mobile services	2.80	2.28	2.45	2.51	1.06	5 <sup>th</sup>	P	
8	Audiovisual	2.36	2.26	2.32	2.31	1.01	9 <sup>th</sup>	LP	
9	E-projects	2.42	2.21	2.45	2.36	1.03	8 <sup>th</sup>	LP	
<b>Grand Mean</b>		<b>2.65</b>			<b>P</b>				

Provided, LP = Less Provided

Table 2 reveals the result on digital reference resources provided for postgraduate students' research. The grand mean score is 2.65 shows that the Digital Reference Resources (DRRs) are provided in the University Library in Delta

State Nigeria. The provided DRRs are websites ranked 1st with 3.11 mean score, other DRRs provided are databases and e-journals, e-books and mobile services. However, some DRRs are less provided which include e-projects and digital reference platform. The standard deviation score range from 1.06 to .91, which evidence low variance in the responses of the respondents.

Data from interview on heads of the reference section revealed that e-books, CDs, e-magazines, e-journal, websites, e.atlass, e-maps, e-databases and e-thesis are DRRs provided in the libraries.

**Research Question 3:** What is the extent of utilization of digital reference resources by postgraduate students for effective research output in the library under study?

**Table 3.** Mean rating of postgraduates' response on uses made of the digital reference resources by postgraduate students

s/n	Item Statement	EDU	ARTs	SOC SCI	Mean sum	Std. Dev	Rank	Decision
1	Searching for research topics	3.35	3.14	3.46	3.31	.88	1 <sup>st</sup>	A
2	Obtaining general information	3.21	3.02	3.36	3.19	.94	2 <sup>nd</sup>	A
3	Completion of assignments	3.11	2.95	3.36	3.14	.97	3 <sup>rd</sup>	A
4	Accessing journal articles	2.82	2.97	3.23	3.00	1.00	4 <sup>th</sup>	A
5	Writing essays	2.80	2.65	2.76	2.73	1.07	8 <sup>th</sup>	A
6.	Decision making	2.64	2.44	2.58	2.55	1.02	11 <sup>th</sup>	A
7.	For leisure reading	2.63	2.37	2.74	2.58	1.06	10 <sup>th</sup>	A
8.	For current literature search	2.83	2.62	2.78	2.74	1.04	7 <sup>th</sup>	A
9.	To find out statistical methods of data analysis	2.71	2.53	2.62	2.59	1.07	9 <sup>th</sup>	A
10	Obtaining information on impact factor journals	2.59	2.52	2.66	2.59	1.01	9 <sup>th</sup>	A
11	For writing synopsis	2.38	2.43	2.59	2.46	1.03	13 <sup>th</sup>	D
12	For grant writing	2.45	2.39	2.58	2.47	1.02	12 <sup>th</sup>	D
13	For current practices in research	2.87	2.81	2.96	2.88	1.06	5 <sup>th</sup>	A
14	For paper presentations in conferences, seminars etc.	2.86	2.81	2.81	2.82	1.09	6 <sup>th</sup>	A
<b>Grand Mean</b>			<b>2.78</b>			<b>A</b>		

GE = Great Extent, FE = Fairly Extent

Tables 3 shows the result on uses made of the digital reference resources by postgraduate students. PGs agreed that the uses made of the digital reference resources by PGs are searching for research topics ranked 1<sup>st</sup> with 3.31 mean score, obtaining general information, completion of assignments and accessing journal articles which are rated higher above others. Others are for current practices in research, for paper presentations in conferences, seminars etc and for current literature search. However the PGs disagreed on writing synopsis and grant writing. The grand mean score is 2.78, is a clear indication that PGs agree on the uses made of DRRs in the library. The standard deviation score range from 1.07 to .88 signifies high variance in PGs responses.

Data from interview schedule on reference section heads confirms that the PGs use DRRs massively, for studies, research, assignment, writing of projects and thesis and scholarly papers.

## **Discussion of Findings**

The discussion is presented in line with the four specific objectives.

### **The research output of postgraduate students in Delta State University Library in, Nigeria**

The findings on the level of postgraduate students' research outputs reveals the high level research outputs as seminar presentations, projects, thesis, conference paper presentations, articles in local journals, articles in foreign journals and book publications. In concurrence with this finding Performance-Based Research Fund-PBRF (2012) identified postgraduate research outputs to include published academic work (such as books, journal articles, conference proceedings, and masters or doctoral theses); work presented in non-print media (such as films, videos/CDs and recordings); and other types of outputs (such as intellectual property, materials, products, performances and exhibitions). Other research outputs as determined by the study include: talk shows, publications in academic blogs and articles in newspapers and magazines. Each of these research outputs depend on the discipline of the postgraduate student.

Research output is used to communicate research findings and make them known for use. Through research output PGs can publish the findings of their research works. Hence it is imperative to publish research findings.

### **Digital reference resources provided for postgraduate students research**

Findings on the digital reference resources provided in the libraries reveal that websites, databases, e-journals, e-books and mobile services are provided in the libraries. These findings concur with Adeoye and Popoola (2011) that digital reference resources include e-books, e-journals, e-indexes, e-abstracts, e-magazines, internet and email. It is worthy to state that digital reference resources are veritable information materials that the library uses to provide timely and convenient library and information services to the users. The availability of such resources will enhance both conventional and digital reference services.

Some DRRs are less provided in the libraries such as e-thesis, digital reference platform, e-projects and audiovisuals. Shidi (2013) avert that the digital library can therefore function effectively if the resources such as human and material are made available. They include: digitized (print) materials, E-journals, E-books, v-books, maps, images, sounds, videos and multimedia, LAN, WAN etc. Human resources are made up of well-trained manpower for online help. Digital reference resources are resources that are not found in physical formats in the library shelves, they are in digital or electronic formats and are stored in the cloud or electronic devices. Accessing DRRs requires the use of digital or electronic devices; it does not need physical contact, rather, they are accessed and used from any geographical location.

### **Utilization of the digital reference resources by postgraduate students**

Findings from the study reveals the various uses made of the digital reference resources by postgraduate students for effective research output. The findings reveal that PGs utilizes DRRs for searching of research topics, obtaining general information, completion of assignments and accessing journal articles. This finding is in accordance with Deng (2010) who revealed that the various purposes for the use of electronic resources vis-a-vis digital reference resources includes: gathering information on a specific topic, gaining general information, obtaining answers to specific questions, completing assignments, reviewing literature, writing essays and helping decision making. Other use made of DRRs as determined by the findings includes current practices in research, paper presentations in conferences, seminars etc., current literature search and writing essays. Collaboratively, Onoyeyan and Okereke (2014) opined that electronic resources/digital reference resources heighten academic performance. They have broadened academic experience because information resources can now be accessed at a faster pace anytime, and at any place. From the foregoing discussion, it is lucid that digital reference resources utilization contributes immensely to the research activities of PGs.

## **Conclusion and Recommendations**

The researcher perceives the study to have satisfied its four specific objectives. Thus the conclusion is drawn from the findings of this research with reference to the research question 1 – 4 as stated above. This study was carried out based on the assumption that Delta State University library in Nigeria have been providing digital reference resources (DRRs) for the users which would have led to effective research and academic output. It was assumed that before now, there is adequate provision of DRRs and the DRRs are used to high extent by the postgraduate students. Unfortunately the state of digital reference resources utilization by the postgraduate students and other users was unknown because none

of the available empirical studies have investigated the status of digital reference utilization for effective research output by postgraduate students in Delta State University in Nigeria. For this reason, it became imperative to investigate the digital reference resources utilization for effective research output among postgraduate students in Delta State, Nigeria

The following recommendations were made based on the findings of the study:

1. Universities should make adequate provisions to support postgraduate programmes in order to achieve high level research outputs emanating from them.
2. University managements should increase library fund to enable acquisition of adequate digital reference resources to support academic and research activities in the universities.
3. The University library should create awareness on the digital reference resources provided through the orientation programmes organized for newly admitted postgraduate students.
4. Postgraduate students should consult the provided digital reference resources for information that will help their academic and research activities.

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