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Scientific Innovations in Education for Sustainable Growth and Development of the Nigerian Economy: The Roles of Polytechnic Libraries in Rivers State

***Endurance Nnorya Osaro**
(endurosaro@gmail.com)

***Gift I. Nwosu**
& ***Angela I. Okechukwu**
(angelasarema5@gmail.com)

*Rivers State College of Health Science and Management Technology, Oro-Owo, Rumueme, Port Harcourt

Abstract

This study examined scientific innovations in education for sustainable growth and development of the Nigerian economy: the roles of polytechnic libraries in Rivers State. Three research questions and one hypothesis guided the study. The survey design was used for a population of 24 professional librarians from three polytechnic libraries in Rivers State namely: Kenule Saro-Wiwa Polytechnic Library, Captain Elechi Amadi Polytechnic Library and Rivers State College of Health Science and Management Technology Library. A structured four points Likert scale questionnaire of 'Strongly Agree', 'Agree', 'Disagree' and Strongly Disagree was used for data collection. Mean and standard deviation were used to answer the research questions while correlation analysis was used to test the hypothesis at 0.5 degree of freedom. Findings of the study revealed that polytechnic libraries promote scientific innovations in education through the provisions of information resources and services such as current and relevant print and electronic books, journals, newspapers, encyclopedias, dictionaries, online database, current awareness service selective, dissemination of information, academic counseling, internet services and conducive reading space. It was established that polytechnic libraries are hindered by lack of funds, lack of qualified staff, lack of modern library facilities, and poor power supply among others. This work therefore recommended that there should be improved funding for polytechnic libraries, employment of more qualified library and information professionals and better remuneration for polytechnic librarians.

Keywords: scientific innovation, education, polytechnic libraries

Introduction

There is a symbiotic relationship between education and development all over the world. Education is a major tool to drive development in the society, that is why developed economics of the world deliberately gives its educational sector very high priority in their annual developmental planning. Todaro & Smith (2011) described investment in education as a direct investment in development. Education is a dynamic mechanism of progressive change, a weapon against the vicious cycle of ignorance, disease, poverty and illiteracy which has prevented development of the individuals and the society. The important of education to development of any economy cannot be overstressed, this could be seen in the Nigerian National Policy on Education (FRN, 2004) as education is clearly been described as a major tool for national growth and development which transcend to socio-economic, political, technological, cultural development.

Clunium & Forsyth (2019) asserts that educationally induced development goes beyond increase in the Gross Domestic Product (GDP) of a nation to the acquisition of productive skills, knowledge, attitudes and habits for survival in the changing world. Education prepare man to adequately handle the challenges in the world, is a means through which value, attitude, norms of the society are transmitted from one generation to another

Educating the world for development has gone beyond mere traditional didactic pedagogy to a more scientific and innovative process of systematic experiment of empirical evidence and research. The world is not static but dynamic with influx of new ideas, skills and abilities necessitated by the advent of information and communication technology (ICT) hence, old ideas, methods, procedures, techniques are being improve on or completely replaced with innovative ones. Innovations

accordingly to Roggers (1983) as explained by John & Wheeler (2019) is an improvement over the former, it is the promotion of new ideas, adoption of new approach which would bring improvement in quality, productivity, effectiveness and efficiency. It is the act of departing from the tradition to something new and better.

Scientific innovations in education according to Luecke & Katz (2003) is seen as systematic, experimental evidence-based changes and improvement in the teaching, learning, research, administrative procedures, policies, information resources, instructional materials and others things that directly influence the outcome of the learning process. Innovation in education is an embodiment of knowledge, creativity which progress from the former with the aim of improving the outcome of the teaching and learning engagement. (Kpangban et al., 2019).

It has been established that a positive relationship exist between education and economic development but the education in most developing countries including Nigeria is not bringing the anticipated economic growth and development as there still exist wide spread poverty, ignorance, illiteracy, diseases, such countries need to improve the system of her education to be more scientific and innovative. This can best be achieved through improving on the human resources that drives the system, these include the lecturers and other personnel, the physical structures which include conducive environment, learning facilities such as modern library and information center.

Libraries are the nerves that give life to the body of any educational system that is why Anaehobi & Okoedion (2014) observed that, a fully equipped modern library in any higher institution is the livewire of that institution. The academic libraries such as the polytechnic library is concerned with the tasks of organizing, processing, storing and disseminating of information resources and services that are not only current but relevant to the information needs of the users community. Polytechnic libraries are repositories of information and education resources consciously and systematically acquired, processed, preserved and made accessible to the members of a given academic community where it is situated. (Igwe et al., 2019).

Sodiq (2016) confirmed that, the objective of a polytechnic library is to support teaching, learning and research while it services include to give users current awareness service, selective dissemination of information, lending of books, reference service, free internet service, academic counseling. Also, the library in the polytechnic gives access to current print and non print books, journals, newspapers, encyclopedias, dictionaries, online database. Students and lecturers and other staff uses the library for preparing for examination, solving assignment, preparing lecture notes, reading for promotion interviews and other consultations. Experienced library and information professionals are in charge of these libraries (Hammed & Osunrinde, 2010). This study therefore, examined scientific innovations in education for sustainable growth and development of the Nigerian economy: roles of polytechnic libraries in Rivers State.

Research Questions

6. What are the roles of polytechnic libraries in promoting scientific innovations in education for sustainable economic growth and development of Nigerian economy?
7. What are the challenges militating against polytechnic libraries in promoting innovations in education for sustainable economic growth and development of the Nigerian economy?
8. What are the possible solutions to the challenges of scientific innovations in education for sustainable growth and development of Nigerian economy?

Hypothesis

1. The roles of polytechnic libraries in Rivers State does not significantly promote scientific innovations in education for sustainable growth and development of the Nigerian economy.

Literature Review

Several studies have been conducted on the roles of polytechnic libraries in promoting innovations in education for instance, Anaehobi & Okoedion (2014) examined the use of available library services by academic staff of polytechnics in Edo and Delta States. The findings revealed that, staff of the polytechnic uses the information resources of the library such as the text books, journals, newspapers, encyclopedias, dictionaries among others. The study further revealed that, polytechnic libraries

provide free internet services, computers and conducive reading environment. Also, Sodiq (2006) carried out a study on evaluating the use of Polytechnic libraries in Nigeria, the findings showed that textbooks, journals, reference materials and newspaper/magazines are the mostly utilised information resources in the library and are consulted frequently. Most respondents used the library to prepare for examinations while Internet services and photocopy services are the mostly utilised library services. Factors like insufficient information resources, inadequate awareness of the available information resources and inability of users to utilize the electronic information resources on their own hinder the effective usage of the library information resources. Polytechnic libraries play pivotal roles in the sustenance and advancement of the academic activities of their parent institutions.

Allema (2019) conducted a work on the roles of libraries in economic development reviews the present state of library services in Ghana in relation to their contributions to the economy of the country. The writer concludes that libraries are contributing very little to the economic development of the country due to various problems such as lack of funds and the misconception of the role of libraries by administrators and policy makers. In a related study by Essam (2019) on the role of libraries as a social agents for development. Result shows that most Egyptian rural public libraries have contributed to Sustainable Development Goals.

Eze & Uzoigwe (2013) in their research paper looked into the place of academic libraries in university education in Nigeria with regards to their strategic contribution to the Nigeria's 'Education for All' initiative. The objectives of the study were to find out the different services offered by the university library in support of university education; Findings showed that most of the university libraries provided a variety of services – reference, internet, interlibrary loans in support of university education; a variety of library and information resources – textbooks, newspapers and magazines and others. Findings further showed that factors like poor funding, poor infrastructure and low level of computer literacy amongst librarians

On the challenges militating against polytechnic libraries, Oladele (2021) conducted a work on Students' Use of Selected Services in the Polytechnic library Ibadan. Findings shows that, poor funding, lack of modern library facilities, poor training and motivation packages are major challenges hindering Polytechnic libraries from meeting their mandates. Also, Hammed & Osunrinde, (2010) in their studies pointed out that government and parent institutions gives less attention to the upgrading of polytechnic libraries in terms of funds, buildings, internet and computers, out-of-date information resources like books among others. Igbeka & Ola, (2021) in their findings observed that, polytechnic libraries suffer gross under funding, lack of qualified staff, lack of promotion and better remuneration for the few library professionals.

Methodology

The study was conducted using descriptive survey design. The area of study covered all the polytechnic libraries in Rivers State but was purposively narrowed down to only three polytechnic libraries namely; Kenule Saro-Wiwa Polytechnic Library, Captain Elechi Amadi Polytechnic Library and the Rivers State College of Health science and Management Technology Library with a population of 24 professional librarians in these libraries. A four points Likert scale of 'Strongly Agree', 'Agree', 'Disagree', and 'Strongly Disagree' response type questionnaire titled 'Scientific Innovations in Education and Sustainable Development and Roles of Polytechnic Libraries Questionnaires (SIESDRPLIQ) was used for data collection, the face and content of the questionnaires was validated by professionals in Library and Information Science while the reliability was done using split-half technique, Pearson Product Moment Correlation Coefficient (PPMC) was used to ascertain the reliability of the instrument which was 0.86 level of coefficient. The data collected was analysis using mean and standard deviation to answer the research questions, items above the criterion mean of 2.5 was accepted while items below was considered rejected. The hypothesis was tested using correlation analysis and results were presented on tables for clarity.

Results

Table 1: Demographic Characteristics of the Respondents

Gender	Frequency	Percentage	Age Range	Frequency	Percentage
Male	8	33%	20-40 Yrs	10	41%
Female	16	67%	41- 60 Yrs	14	59%
Total	24	100%		24	100%

Table 1 shows the demographic characteristics of the respondents. The majority of the library professionals 16(67%) were female and 8(33%) were male. The majority of the respondents 14(59%) were within the age bracket of 41-60years whereas 10(41%) were within the age bracket of 20-40years.

Research Question1: What are the roles of polytechnic libraries in promoting scientific innovations in education for sustainable growth and development of Nigerian economy?

Table 2: The roles of polytechnic libraries in promoting scientific innovations in education for sustainable growth and development of Nigerian economy?

S/N	Polytechnic Libraries provide	SA	A	SD	D	Mean	S.D	Decision
1	Current Awareness Service	8	15	1	1	3.2	0.70	Accepted
2	Selective dissemination of information	9	15	-	1	3.2	0.67	✓
3	Print resources for teaching and learning and research	6	13	4	2	2.9	0.86	✓
4	Electronic resources for teaching, learning and research	2	9	12	2	2.5	0.76	✓
5	Serials and reference service	3	9	10	3	2.5	0.87	✓
6	Internet services and computer gadgets	4	1	15	4	2.8	0.89	✓
7	Open Access database resources	2	2	16	4	2.6	0.88	✓
8	Audio-visual learning resources	6	13	4	2	2.9	0.86	✓
9	Information Literacy studies	6	13	2	4	2.8	0.98	✓
10	User education	5	13	3	4	2.7	0.96	✓
11	Support materials for Research	6	9	3	7	2.5	1.15	✓
12	Conducive environment	14	9	1	1	3.4	0.76	✓
						2.8		Accepted

Table 2 presents data on the service provided by polytechnic libraries to promote innovations in education for sustainable growth and development of Nigerian economy. However, respondents agreed that polytechnic libraries do provide Current Awareness Service, Selective dissemination of information, Print resources for teaching, learning and research, Electronic resources for teaching, learning and research. Serials and reference service, Internet services and computer gadgets, Open Access database resources, Audio-visual learning resources, Information Literacy studies, User education, Support materials for Research, Conducive environment.

Research Question 2: What are the challenges militating against polytechnic libraries in promoting innovations in education for sustainable growth and development of Nigerian economy?

Table3: The challenges militating against polytechnic libraries in promoting innovations in education for sustainable growth and development of Nigerian economy?

S/N	Challenges to Polytechnic libraries	SA	A	SD	D	Mean	S.D	Decision
1	Lack of funds	6	9	3	7	2.5	1.15	Accepted
2	Poor patronage from users	4	8	6	7	2.3	1.07	✓
3	Poor physical facilities	4	8	6	7	2.3	1.07	✓
4	Lack of current information resources	3	11	4	7	2.4	1.04	✓
5	Lack of qualified professionals	4	9	5	7	2.4	1.08	✓
						2.3		Accepted

Table 3 presents data on the challenges militating against service provided by polytechnic libraries to promote innovations in education for sustainable growth and development of Nigerian economy. However, respondents agreed that, lack of funds, poor patronage from users, poor physical facilities, lack of current information resources, and lack of qualified professionals.

Research Question 3: What are the possible solutions to the challenges militating against polytechnic libraries promote innovations in education for sustainable growth and development of Nigerian economy?

Table 4: The possible solutions to the challenges militating against polytechnic libraries in promoting innovation in education for sustainable growth and development of Nigerian economy?

S/N	Solutions to the Challenges	SA	A	SD	D	Mean	SD	Decision
1	Increase funds for the Polytechnic libraries	20	4	0	0	2.6	0.67	Accepted
2	Employment of more professional librarians and better remuneration	7	14	3	0	2.8	0.76	✓
3	Training and retraining of librarians in Polytechnic libraries	10	10	3	1	3.0	0.64	✓
4	Provision of technological equipment and internet for the library	15	5	2	2	2.9	0.74	✓
5	Provision of conducive environment for staff and information resources	20	4	0	0	3.2	0.64	Accepted
						3.8		

Table 4 reveals the respondent’s responses on the possible solutions to the challenges militating against polytechnic libraries promote innovations in education for sustainable growth and development of the Nigerian economy. All the items in table 5 have mean values that are above the criterion mean of (2.5), more so, the grand mean (3.8) is greater than the criterion mean (2.5), and this shows that all the items in table 4 are the solutions to the challenges.

Hypothesis 1: The roles of polytechnic libraries in Rivers State do not significantly promote scientific innovations in education for sustainable growth and development of the Nigerian economy.

Table 5: Relationship between Polytechnic libraries and scientific innovations in education for sustainable economic growth and development

Variable	Mean	Standard Deviation	N	R	p-value	Remark
Roles of polytechnic Libraries	15.1	4.39	24	0.578	0.000	Significant
Scientific innovations in education	14.6	4.36				

0.05

Table 5 shows the relationship between polytechnic libraries in promoting scientific innovations in education for sustainable growth and development of Nigerian economy. The table shows a positive correlation coefficient of 0.578 and p-value 000. Testing the hypothesis at the 0.05 the p-value is less than the alpha value of 0.05 which means that the null hypothesis is therefore rejected and the alternative accepted that there is a significant relationship between polytechnic libraries and scientific innovations in education for sustainable growth and development of Nigerian economy

Discussion

The findings of the study established that polytechnic libraries play major roles in promoting scientific innovations in education for sustainable growth and development of Nigerian economy. The findings showed that polytechnic libraries posse different information and education resources consciously acquired, processed, preserved, and disseminated to the polytechnic academy community, these resources include print and electronic books, journals, newspapers, encyclopedias, dictionaries, database, free internet services, current awareness, selective dissemination of information, academic counseling among others. The findings are in conformity with the study of Anaehobi & Okoedion (2014), Sadiq (2016) who also found that polytechnic libraries give access to an array of different services and resources that immensely promote scientific innovations in education for sustainable growth and development of Nigerian economy.

The findings of the study revealed the different challenges militating against polytechnic libraries from promoting scientific innovations in education, these challenges as revealed in the study include poor funds from government and parent institutions to polytechnic libraries, lack of qualified personnel, poor working facilities, lack of modern library ICT facilities, poor training and motivation packages for library staff. This is in line with the study of Hammed & Osunrinde, (2010) who revealed poor funding of polytechnic libraries is largely responsible for the poor performance in most polytechnic libraries in Nigeria

The solution to the challenges militating against polytechnic libraries promoting scientific innovations in education for sustainable growth and development of Nigerian economy as revealed in the study include increase funds for the polytechnic libraries, employment of more professional librarians and better remuneration for Library and information worker, training and retraining of librarians in polytechnic libraries, provision of technological equipment and internet for the library, provision of conducive environment for staff and provision of current print and electronic information resources. This is affirmation with the studies of Igbeka & Ola (2021) and Eze & Uzoigwe (2013) that advocated that polytechnic libraries should be given a proud of place in the allocation of funds, buildings and other facilities by the management of the institution.

Conclusion and Recommendations

It is established that libraries are very important in every academic institution. Polytechnic libraries play crucial roles by providing the necessary environment, resources and services that are essential in promoting scientific innovations in education for sustainable growth and development of the Nigerian economy. Based on the findings the following recommendations are made:

1. Government and parent institutions should make funds available to polytechnic libraries for the provision of current and relevant information resources of different formats for the promotion of scientific innovations in education for sustainable growth and development of Nigerian economy.
2. There should be provision for employment of more library and information professionals in polytechnic libraries.
3. There should be compulsory training and re-training of library staff for effective performance.
4. There should be provision of conducive accommodations and facilities for the polytechnic libraries.
5. There should be provisions of regular power supply and steady internet connection in the libraries.

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