

Supporting Educational Legacy and Pragmatic Research Innovation by Information Brokers

¹Ajayi, Taiwo Bosede (PhD), ²Adebayo, Olakunle Kasim (PhD), ³Otuyalo, Modupe Atinuke,
⁴Oyeniya, Wosilat Omolara & ⁵Ajokotola, Busola Olufeyi

^{1,3,4,5}Library Department, Lagos State University of Science and Technology
Ikorodu, Lagos State, Nigeria

²Department of Library and Information, Faculty of Education, Federal University of Oye-Ekiti,
E-mails: ¹Justdebbies2014@gmail.com, ²uncleka72@yahoo.com, tinux2003@yahoo.com; ⁴
wosilatomo@gmail.com, ⁵ajokotolafeyi6288@gmail.com

ABSTRACT

Education is an enlightened experience that aids development through innovative research such that its legacy has been promoted, and maintained through centuries. With all the benefit of research in sustaining educational footprint, the place of information brokers have not been harnessed. This paper examined the input of information professionals in ensuring educational and ground breaking research using research communication. It X-rayed through the systematic review of relevant literature the present global events, and the role the information brokers are playing. The use of Media Resources (MR), networking, research and digital based learning, global opportunities rather than local were identified as the new normal and the practices adopted in the library by information professionals to support teaching and learning. The restructuring in education operations and the gateways to the information has been keeping pace with the global trend before, during and after Covid 19 pandemic. The doors of digital libraries were opened despite the shutting of all physical libraries to all categories of users and professionals. This paper highlighted the challenges faced by information professionals in providing pragmatic innovative services to users. Recommendations were stated for policy makers for long lasting information engagement to support ground breaking research.

Keywords: Research, Education, Information Brokers, Librarian

1. INTRODUCTION

In the domain of education for development, there are procedures to ensure improvement on this relic. Although education was achieved orally and through imitation during the preliterate societies (Wikipedia, 2021) but the expansion of knowledge beyond oral and imitation emerged through formal education. Since inception of formal education, it has been recognised to be a contrivance for development and important guidance in human life (Idris, Hassan, Yaacob, Gill & Awal, 2012). Filho & Orlovic (2018) posit that educational research has offered opportunities for researching and rethinking in all works of life and fields of knowledge.

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Parts of the educational development are the discovery of relevant courses most especially in science and technology. Thus Ciarli (2020) submitted that Science and technology (S&T) contribute to solving and creating societal problems. Holland (2018) therefore, mentioned that research should not be to reanimate the past but to look at ways to study programs that would affect the future. Research according to European Commission (nd) is central to emerging new and innovative products, processes and services, which allow higher productivity, industrial competitiveness, and ultimately prosperity. This however, requires the commitment of faculty members to foster the education research and innovation. Research within the society, universities, and cultural institutions has experienced exponential change lately due to the Covid 19 pandemic throughout the world in 2020.

Recently as mentioned earlier, COVID-19 has changed the face of education and the results of research. The mode of educational and instructional delivery in Nigeria was traditional face-to-face method until COVID-19 pandemic crisis impressed e-learning on all academic institutions. Both developed and developing countries adopted this method as a bail-out from the consequence of this outbreak. Many institutions cannot cope with this great challenge because so many of them are not prepared. The preparedness is not only limited to the faculty members but also to the students. High cost, inadequate infrastructure, lack of ICT skills, rejection of e-learning by faculty members, and lack of accessibility to quality internet connection and electricity as barriers to the adoption of e-learning in developing countries were identified by (Adarkwah, 2020).

However, according to Eze, Chinedu-Eze & Bello (2018) the conventional educational system require that students receive lectures and perform any other academic assignments needed to obtain their certificate on campus. But in the new normal, both at local and international level, deliveries of lectures and the results of research are communicated online. The library staff as an integral part of the institution also support the research work of the faculty members through service delivery and scholarly communication output. Information professional (IP) according to Wormell, Olesen & Mikulas (2011) is a term used to describe sometimes, information system specialist overlapping professions such as librarians, archivists, information scientist, records managers and information consultants. The use of any of these terms depends on the organisation. For this paper, the generic term information professionals and librarians will be used interchangeably of Librarians. Library is at the forefront of providing information for the students, lecturers, and researchers so as to support their teaching, learning and research work (Jing, 2021).

Research depends more on technology to access information and communicate the result of their research work. The position of Organisation for economic cooperation and development (OECD) (2016) was that innovation cannot happen in a vacuum, but openness and interactions is required. This is also very much the case for research which cannot make ground breaking revolution only with discoveries, but also from other actors and stakeholders. Research need to become more of inter and multi-disciplinary focused; more visible in its impact; and more collaborative and participatory (Research Libraries UK, 2021). This however can be accomplished by strategic communication process, thereby necessitating openness and interactions between systems.

Abundant knowledge flows according to European Commission (nd) is part of the ecosystem across research and innovation. It is very important to replace the old academic activities with a new one based on research followed by finding out the effects of these new activities on learning, innovation, and academic achievement (Rekha & Madhuri, 2017). These in essence can be measured and determined by the result of the availability and use of other researchers, scholars and its effect on the society. One of the challenges as identified by Ministry of Education, Science and Technological Development of Republic of Serbia (2016) is how to encourage innovations and make the research process and result penetrable. Ciarli (2020) Identified unevenly distribution of research work across society as part of the challenges researchers are facing. Probably because not all concerned and affected are technologically literate.

There is a gap between the research findings and information professional. Hence the result ends up with the research without harnessing the wealthy of expertise of information brokers to showcase and disseminate the result to the users. On this premise, this paper will showcase how innovative accomplishments of researchers are communicated between gown and town to identify strategies adopted by information professional to aid innovative research and identify the challenges faced by information professionals in accomplishing this task. The review of literature will be the method to use for the paper. Literature searches will be conducted using different journal databases. Although this procedure did not guarantee an exhaustive collection of all relevant articles on the variables reviewed but the relevant papers found and use will cater for a strong conclusive interest raised

2. INNOVATION MODEL

This study is guided by innovation model. Stephen (2018) defines innovation as the generation of new knowledge or ideas which should meet a societal need. The model centers on the new knowledge generated from a discovery made during fundamental or applied research in Science Education and Technology fields, and could fulfill a need or solve a problem in the society. Technology-Push model and the Market-Pull model are the new types of models used to indicate research conducted in an academic environment and the one that targeted the market to get a new products that will meet the need of the consumers. The former is academically oriented and the later is market focused. The end result of Market-pull will bring about new product to meet the market need of the customers.

Both model uses native and integrative approaches and this is more used in developed countries, however, for a research to flourish and be continuous, it must be science, engineering and technologically focused. Mostly identified is that developing world are consumers of products and not producers. A country that is not producing in this present spherical economy , will experience a very slow development. It is evident that developing countries especially Nigeria need to be focused and determined to change the face of research to technology-push model and make it an innovative research. This will encourage the modification of scientific knowledge and targeting the creation of new innovation.

2.1 Innovative research for sustainable development

Innovative research plays an essential role in triggering smart and sustainable growth and job creation in any given society (European Commission, nd). Twiss (1989) posited that innovation is a process that combines science, technology, economics and management, as it is to achieve novelty and extends from the emergence of the idea to its commercialization in the form of production, exchange and consumption. This was corroborated by European Commission (2005) that when innovation is placed at the heart of business, research becomes motors of wealth generation and growth. Ciarli (2020) submit that the creation of an innovative society of knowledge are the distinct importance of scientific and research results and the key prerequisite in competitiveness and sustainable development.

This translate to the efficiency and effectiveness of the scientific research structure that allows the creation of new knowledge, development of new and enhancement of the existing technologies, solving complex social and economic difficulties and education of high human asset that will be able to use their knowledge and scientific research activities to create new values, design that will result to economic and social development (Ministry of Education, Science and Technological Development of Republic of Serbia (2016). European Commission (nd) submitted that by producing new knowledge, research is central to developing new and innovative products, processes and services, which enable higher productivity, industrial competitiveness, and ultimately prosperity.

There are different perceptions on how and what makes innovation process realistic. Innovation come with news ideas/solutions which includes willingness to question ideas, present ideas, alertness to opportunities analytical thinking, coordinate activities, acquire new knowledge, mobilise capacities of others, make your meaning clear, and write reports or documents your research findings (Organisation for Economic Co-operation and Development (2016). Human resources and its management plays a major role in research, European Commission (2005) affirms that for a country to expand and get good result in science, technology and innovation, there is needs to get and use more and better researchers fully and same best brains must be motivated to follow research careers and to stay in.

What innovation does is to intensify university-industry partnerships according to European Commission (2005), this implies that the activities, process and abundant knowledge flows across research and innovator actors and good structure that will allow business innovation to flourish must be ensure between organisations and innovators. The simple process is for scientists and developers to understand what kind of innovation should be used in a production, scientific discoveries, in project activity and the creation of new sophisticated products, the provision of services and execution of works (Stephen, 2018).

Another useful indicator of innovation is patents. History and research from other developed countries shows that that modern industrial advancements are anchored upon scientific and industrial research, leading to generation of new ideas or improvement of existing technologies. These ideas often turn into industrial products for commercial exploitation (Stephen, 2018). The developing countries of the world must not focus on market pull alone but rather on technological pull which target more of science and technological research, the inventing and discovery of new technology that will be embraced by all. A ground breaking invention on technology is necessary because the world is an information society.

Therefore, innovation that consists of the generation of a new idea and its implementation into a new product, process or service, leading to the dynamic growth of the national economy and the increase of employment as well as to a creation of pure profit for the innovative business enterprise is required.

3. SCHOLARLY COMMUNICATION AND INFORMATION PROFESSIONALS

The Higher Education institutions mode of operations, alongside the new normal developments in information and communications technology and digitisation of content and services has changed rapidly lately. Though the use of technology in higher education institutions (HEIs) is not new but the pandemic had a significant impact on teaching, learning, traditional library and information provision. One of the major aspects of research result is scholarly communication, and the advent of technology has considerably changed how these research findings are published

This was supported by AIP Publishing (nd) that the internet has transformed scientific communication, offering new ways of sharing research, hence the adoption and use of scholarly communication (SC) which is more complex and sophisticated than in the past and employs diverse online means Klain-Gabbay & Shoham (2018). Scholarly communication according to Creaser (2011) is a broad term in two areas which are publishing and disseminating the result research and providing access to the published material. According to Agoh & Omekwu (2021) it is the output of research work appearing in the form of creative work, journal articles, conference papers, innovation, and research books including critical scholarly texts, new interpretation of historical events and new ideas or perspectives. Scholarly communication can be understood as the system through which research and other scholarly writings are created, evaluated for quality, disseminated to the scholarly community, and preserved for future use, and it promotes a shared system of research and scholarship (Association of College and Research Libraries, 2015). T

he research work must be created and evaluated before it can be disseminated. Hence, Agoh & Omekwu (2021) submitted that Scholarly communication is the system through which research and other scholarly writings are created, evaluated for quality, disseminated to the scholarly community and preserved for future use. SC therefore is the sharing of sustainable growth academics findings and publishing their findings so that they are available and disseminated to the wider academic community and beyond. In its broader sense, scholarly communication refers to both the formal and informal connections among scholars and disciplines. The Research Librarians while engaging in the traditional role of curating and providing access to information, they are now actively expediting the learning and research procedures as well. The scholarly communication system is the primary driver of the culture that shapes research practice within the academic domain Assante, Candela, Castelli, Manghi, Pagano and Nazionale (2015).

SC is vital to research and innovation because its neglect as claimed by Hill (2018) makes the insights from research of little or no value until they are shared. This sums up the responsibilities of information professionals in the library, the heart of any academic institution. Recently, Librarians while engaging in the traditional role of curating and providing access to information, they are now actively expediting the learning and research procedures using the advantage of information communication technology by embracing new methods for disseminating information.

This was supported by AIP Publishing (nd) that highlighted various stages of documenting information for dissemination; from clay tablets and books chained to shelves, to e-resources, librarians have always been involved in the process of sharing knowledge. These stages have mechanisms; tools and practices associated with these stages and their role have been changing along with scholarly communication developments. The changing of scholarly communication have been constant and one of the indication is the advent of open access (OA) , a paradigm shift that improved the relationship between different backers (Boufarss & Harviainen, 2021).

AIP Publishing (nd) noted that as international research community is increasingly embracing Open Access (OA) as a new publishing and access model, librarians are at the heart of the transition. This is the latest development among researchers and scholars. Open access has gained popularity among researchers and Librarians are taking advantage of this same method to educate, and creat awareness among faculty members. Open access is a term used for freely available, digital, online information, although it is free, yet it complies with well-established peer-review processes and maintain high publishing standards (Cornell University Library, 2022) in its basic form Boufarss & Harviainen (2021) defined open access as the practice of disseminating peer-reviewed scholarly research broadly and freely online without restrictions apart from the right to be cited. The essence of open access is to choose related document for reading and to build upon research. A detail process is provided by librarian on how to open an account ranging from providing enhanced access to OA resources, becoming publishers of OA works, establishing institutional digital archives, building OA computer systems, digitizing out-of-copyright works, preserving OA material, and providing support for article processing charges. and OA finding tools.

Librarians are using this opportunity to enlighten the faculty members on the need to change from “local researchers” and showcase their innovative research through open access this will strengthen the cooperation with the diaspora. Since the Internet has changed the scientific communication and offering new ways of sharing research, AIP Publishing (nd) submitted that readership has expanded, and the potential impact of research is greater than before. However, promotion of innovative research still must gain the full recognition it deserves. Most result of research result in developing countries are not adequately access hence, the value added cannot be used to meet the information need of other researchers and other end users. Librarians in higher educational institutions are not only showcasing the outcome of research work by faculty members but they are also undertaking ground breaking research that attracts grants MacDonald (2021) to show that communicating research work is key and getting opportunities online is not far-fetched.

Boufarss & Harviainen (2021) identified some roles played by librarians in facilitating the visibility of faculty members and researchers in research communication through discoverability so that young researchers can be involved and mentored in different related projects, Researcher Profiles and Research Sharing Platforms. Creating a research presence on open researcher and contributor identity (ORCID), using research sharing platforms (ResearchGate), holding a research platform and Industry Networking were also identified. Educate researchers on how to engage with the community, so that the result of the research can be translated to use thus strengthening the work of innovation (Ministry Of Education, Science & Technological Development of the Republic of Serbia, 2016) . The right of the researchers and the content of the work belong to the publisher who according to Bell (2012) makes it inaccessible to other scholars because of high cost of subscription charges on the content.

Librarians in academic library most especially make effort to subscribe to some databases thereby relieving researcher of the burden of subscription. Institution based researchers have access to other scientific contribution and vice versa. The internet-based information technologies has allowed researchers to overcome physical, linguistic, geographical, and other obstacles, to communicate with colleagues across the globe, publish their scholarly work online, and locate other researchers who are working in the same field. These engagements facilitates the establishment of international scholarly communities that cross the boundaries of academic institutions and nations (Vaughn, 2013).

Owolabi, Adeleke, Ajayi & Adesina (2020) affirmed that majorities are not fully aware of predatory journals and reasonable numbers of their study population do not know what features to look for when publishing their work online. Knowledge of copyright and patent of their inventions and publications is not detail. Librarians are creating awareness about this pertinent issue. Management of institutional repository is the major work of the librarian. They populate the repository and assist users with access to existing resources, and create new, institutionally unique resources. Faculty members in some institutions are taught how to independently upload their research findings.

Librarians are not without challenges as they make effort to showcase and communicate the result of innovative works among faculty members and the repercussion of this is their inability to disseminate research result as expected. AIP Publishing (nd) identified the problem of reaching out to faculty members. Perhaps many are still looking at the role of librarians before and the way they discharge their duties. Majority of academic librarians servicing the faculty members do not see reasons for collaboration outside the filed Library and information. Auckland (2012) encouraged the librarians to collaborate directly with faculty members, both in scholarly communication processes and in research processes. This will enhance their understanding of other fields of knowledge and will showcase the ability of the librarians. Also, Anamaria (2016) noticed that the perception of academic institutions both in qualitative and quantitative data that best describe how faculty members and librarians in today's academic institutions about the integration and function of librarians is lacking. Despite the avowed benefits of library and information services in contributing to researchers' scholarly communication output, empirical research to establish this purported relationship is lacking (Daudu & Shehu, 2014).

4. CONCLUSION AND RECOMMENDATION

Productivity and impact are the key factors for determining the end result of a research work. These factors can be measured by some criteria but most especially the visibility of the research work of the faculty members. Librarians in an academic/research libraries are saddled with the responsibility of disseminating information to their patrons. However literature revealed that there is still no handshake between the faculty members and the librarians and this is posing a great challenge to the result of research and slowing down the process of communicating the results to the needed quarters. This calls for a deliberate change among librarians, they should think outside the box on how their absence will be felt in the process of communicating scholarly result and publication. This paper therefore recommends that, strategies must be put in place to ensure that scholarly works and its results are visible both to other researchers and the community.

There is need for the major actors especially the librarians to collaborate and ensure a ground breaking research among colleagues and other faculty members. since the dynamism of education currently support this idea and it will also help librarians to understand the research process of other fields of knowledge. The Librarians professional body should encourage the members especially the academic librarians and as a policy in all academic libraries organise a group of research librarian that (especially with background in other fields) will collaborate with faculty members.

This should be given a wider publicity so that they can learn how to Investing in research especially in Science, Engineering and Technology is paramount to promote development through innovation, it will also aid accelerate the numbers of researcher thereby increasing the output of new ideas and knowledge. Experienced researchers should be retained through policies to mentor young researchers so that there would not be brain drain and also the result of research finding can be channel to meet the societal needs. The national institutional repository proposed by TETFund should be fully supported and implemented by the government. This will curb plagiarism, encourage innovation and showcasing of talents. The total adoption of information communication technology in libraries especially academic libraries should be made compulsory as little or nothing will be achieved in the digital space.

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