Creating Makerspaces in Nigerian Public Libraries as a Strategy for Attaining National Integration and Development

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ABSTRACT

The recognition of public libraries as development partners places an onus on public libraries to provide services that will enhance national integration and development. Whereas libraries have been known to provide information resources in various formats, recent developments around the world have shown that it is no longer enough to provide information to users. Users are being encouraged to become knowledge producers and not just consumers. In this regard, libraries are rethinking their strategies. One of the consequences of this, is the creation of makerspaces: a space for creating things within the library. This paper explores the prospects of makerspaces in Nigerian public libraries. The paper identified how makerspaces could lead to national development by providing access to technology, providing opportunity for users to work together thereby promoting unity and togetherness among the citizenry of a given society as well as providing an enabling environment for people to be creative. The paper argued that makerspaces in Nigerian public libraries will lead to increased patronage and users' satisfaction, change in perception of librarians by the public, promote synergy among citizens and result in economic development.

1. Introduction

Right from early centuries till now, libraries have played key roles in ensuring the development of societies and its citizens. Beyond the provision of information resources, libraries have been seen as key educational institutions that facilitate the building of national wealth through the creation and sustaining of access to crucial information. The library, and especially the public library, has been identified as the hub for knowledge creation, processing, dissemination and storage. Libraries are long standing development partners that provide cost effective alternatives. Many countries have designated libraries as UN depositories, making them an important venue for information about

the UN and the SDGs. In fact, "libraries support many aspects of the UN 2030 Agenda's vision and the SDGs. Libraries are key public institutions that have a vital role to play in development at every level of society" (IFLA, 2015).

As the Librarians' Registration Council of Nigeria (LRCN) stated in its report on Public libraries: *"Access to information is a basic right that people must have for human development and Information Communication Technology (ICT) is the driver of the information economy. It contributes meaningfully to knowledge management; allowing seamless communication of information and intelligence; foster increased access to information and enhances faster retrieval and dissemination of information. For Nigeria to be a key player in this global economy, ICT facilities should be effectively and efficiently deployed." (LRCN report, n.d.)*

Libraries were originally designed to serve the local community by providing something that individuals didn't otherwise have access to and couldn't afford to amass on their own: a deep library of books and access to a wider universe of information. The public library does this more effectively because its mandate is more inclusive than other types of libraries. As defined by Nwokocha (1993) a public library is a library established to serve the generality of the residents of the community or town where it is located. It must be noted that one of the traditional roles of the public library in any given society is facilitating the creation of knowledge in our communities. Promoting literacy through instruction has long been a part of the librarian's job.

Today, the concept of literacy encompasses much more than just reading and writing; it has evolved into "transliteracy," commonly defined as the ability to read, write and interact across a range of platforms and tools. As new technologies emerge, library patrons should naturally turn to libraries and librarians for instruction in the use of new technologies, for help and troubleshooting, and in some cases as their only means of access to those technologies. In fact, with the advent of the internet, most of the book based resources in the library are now at much of the community's fingertips. Therefore, for public libraries to meet the needs of the 21st century and to remain relevant, they must respond correctly to technological advancement and emerging concepts of information service delivery (Eze, 2013).

Today, the greatest thing that library users need but do not have access to is no longer just not books and magazines—but desktop fabrication and prototyping tools and the needed training on how to use them. New technologies like 3D printing, laser cutting, 3D scanning etc are generally too expensive for most individuals to afford, and many have no idea how to use them. It is therefore a crucial time for libraries to retool as makerspaces to provide these tools and training to the community.

If a makerspace is, in the words of Fayetteville (New York) Free Library's Transliteracy Development Director, Britton "a place where people come together to create and collaborate, to share resources, knowledge, and stuff," then the public library is a natural setting for such a space (Scott, 2012). A makerspace by design is a place for cross-fertilization of ideas and creation of things (Ginsberg, 2015). Although the term 'Makerspace' did not appear until 2005, the core idea and technology behind it had existed in various forms over the past decade (Cavalcanti, 2013). As Cavalcanti (2013), explained, a makerspace is simply a space for making things with shared technological tools, and

"the original goal of the space ⋯is to democratize the act of making something from scratch as well as (whatever it may be) – not repurposing what already exists".

Most Public libraries in developed countries have long seen the nexus between the public library and makerspaces. In most cases, public library spaces have been redefined as makerspaces in a bid to meet the emerging need to for a space for creativity and innovation coupled with access to new technologies. In promoting the idea of makerspaces in Nigerian public libraries, a lot must be done in the area of creating awareness and changing the service concept perception of Nigerian librarians. Okpala (2016) while making a case for makerspaces in Nigerian university libraries noted the need to change the current thinking of librarians in Nigeria.

Some public libraries in developed countries now provide public access computers and instruction to support information literacy. A makerspace is, in a sense, a new stage in the evolution of the library computer lab. Hence, our job now becomes providing access to new technologies and instruction to support new literacies (Scott, 2012).

As development partners, public libraries must be empowered to perform their duties. And for Nigerian public libraries to fulfil this mandate especially as it relates to national integration and development, it must retool its methods, rethink its strategies and redefine its service concept to include the creation of makerspaces. Branwyn (2016) captured this when he said that "the role of a public library should also adapt over time, and that time is finally here. It's time to plan how we're going to build the future and what place public libraries have, should or won't have".

A lot is changing in this century. Existing walls of knowledge division are falling quite fast. Several institutions are changing their roles to remain relevant. The library cannot afford to stay with the same old flag. The library must move, change roles, and redefine its space to retain its relevance. In fact, the library users are getting so advanced with new technologies that any librarian who chooses to spend so much time sitting behind his desk will soon raise his head to see a crowd of library users who are working without the librarian, that is, if they decided to use the library at all. In order to meet the changing needs of library users there are several new things the library must do, one of those is to introduce or create a MAKERSPACE in the library.

It is based on this that this paper has been written to explore the Makerspaces in Nigerian public libraries as a strategy for attaining national integration and development.

2. Concept and Role of Public Libraries

Public libraries are referred to as the gateway of knowledge. They serve the entire populace in a community regardless of nationality, race, colour, age, sex, status, educational achievements or language. It is run by the government and maintained out of public funds. Dr. S.R.Ranganathan in his 'Model Public Libraries Act' defined the public library as any library established and or maintained by a local library authority, including the travelling libraries and service stations; any library, open to the public free of charge and maintained and managed by the Government or by any local body, and any library notified by the Government as public library (Raman Nair, 1996). In addition, Nwokocha (2004) defined public library as being established to serve the generality

of the residents of the community or town where it is located. Compared to other libraries it has about the most heterogeneous clientele as there is no restriction as to who can use it. The major function of public libraries in Nigeria is to provide information through books, newspapers, magazines, journals, audio-visual, etc. to users with their diverse needs in mind. They also provide an avenue for recreation and relaxation.

More so, public libraries are regarded as agencies that promote and enhance education and at the same time eliminate illiteracy among people. In this same vein, Onwubiko (2004) suggests that public libraries provide materials in wide range of subjects to cater for all levels of demand. These materials range from reference, continuing education down to recreation. In otherwords, they provide materials for specialized reference and research, co-ordinate programs for continuing education and sponsor cultural and recreational events. In addition, Ode and Omokoro (2007) agreed that public libraries assist at developing learning skills among the children, youths and adults, as they play a part in encouraging positive use of the leisure and providing materials for change and relaxations.

Public libraries provide variety of library resources that meet the needs of its clientele. Their resources range from print materials such as booking monographs, reference materials, period-icals/serials like magazines and newspapers to non-print which include audio visuals, multi-media, microfiche, films, slides and microforms etc. To support this, Halsey (2006) asserts that library resources should not only include traditional print-on-paper media like books, journals, newspapers etc., but also audio visual materials like records, audio cassettes, projectors, art reproductions, maps, photographs, microfiches, and electronic information resources (EIR) like CD-ROM, computer soft-ware, online databases, internet, e books, e-journals and other media. On the other hand, public libraries are expected to provide relevant and timely services that will satisfy users.

In this fast growing era of technology, the public libraries and the internet are means of accessing information. Presently in Nigeria, a large number of materials are acquired and most of them are not accessible due to policies on ground, arrangement of information resources and the methods of dissemination and retrieval. This implies that most of these acquired materials are not properly accessed. Access to information entails that access to all library and information sources no matter the format, should be made available to users. The public libraries have an important role to play in this regard.

The role of public libraries should also be seen in the development of the society and its citizens. Public libraries should be able to reach out to the rural areas just as it is done in the developed world. They are required to help in facilitating the planning and implementation of learning programmes to clients like farmers and market women. This will equip them with the necessary skills to enable them succeed in a changing society. The economic role played by the public library in the views of Nwosu and Ogbomo (2010) will be dependent on the access to information because national development is very much influenced by the amount of available information.

The role of public libraries as a place for people to equip themselves with skills pertaining to information technology skills is an important aspect in capacity building. The public library promotes information literacy by providing and organizing training programmes for both the librarians and the library user to encourage lifelong learning. Public libraries should provide training of the citizens in information technology application and utilization as it relates to e-library, e-commerce, and

e-governance and e- health.

Public libraries can equally play the role of combating HIV and AIDS, malaria and other diseases. According to UNAIDS WHO (2008), Africa had the highest records of HIV/AIDs afflictions. This was as a result of ignorance and unbelief of the danger of the disease and also the various myths associated with these diseases that were believed by people. Public libraries can make use of audio-visual materials and move to communities especially the rural areas and sensitize them on these diseases. These diseases can be avoided through the provision of relevant information, especially in their native language. This is supported by Heymann cited in Ugwuoke (2011) who asserts that illness and deaths from infectious diseases can generally be avoided at an affordable price which is through relevant information.

Children need the library for lifelong education in consonance with the national education policy. In some parts of Nigeria in the views of Usoro and Usanga (2007), children especially those from rural areas or economically disadvantaged backgrounds, first meet books in school, and have limited access to books in the home and community. Reaching out to these children through public library services is essential for universal basic education to succeed. Public libraries in Nigeria are expected to extend library services to nomadic populations, remote communities, rural primary schools, and day care centers. According to Correa cited in Ebiwolate (2010) the library is "the place where teachers and pupils come into contact with the world, that is, where they acquire the general knowledge which forms the basis for all further learning.

3. Current state of public libraries in Nigeria

A report on the state of public libraries in Nigeria by LRCN (n.d.) revealed that there are 316 Public Libraries in Nigeria with 598 qualified Librarians. In general, many of the libraries lack the necessary ICT facilities to provide quality service delivery in the information society. The council recommended that ICT facilities should be made available in public libraries and that librarians should be adequately trained to enable them use the facilities. This will increase traffic in public libraries which is the "**people's university**". The rural populace will also benefit as most of them do not have the purchasing power to have these ICT facilities in their homes.

Furthermore, Emojoroh (2005) conducted a study on the roles and effectiveness of public libraries in nation building in Nigeria and found that Nigerian public libraries are performing poorly in most aspects due to appalling resources. Omekwu (2006) also observed that Nigerian libraries are mainly without functional web access. The connection of ICT platforms to libraries, archives, museums, rural areas and educational institutions are virtually not available. With the emergence of Information and communication technology, the means of accessing information also changed as many users go to the library to have internet access. The public libraries are positioned to provide and promote access to information which will translate to development of the society.

Interestingly, public libraries in developed countries perform the same functions of public libraries in Nigeria but with some difference which include postal services for citizens living in remote farm houses, support integration through library events like family outreach organized in public

libraries, establishment and provision of library and information services to potential users such as prisoners, hospital patients and the handicapped. But in Nigerian scenario, the case is different as seen in the problems of inadequate funding, unskilled staff, outdated and irrelevant resources of the public libraries, lack of recognition and nonchalant attitude on the part of government to know the importance of libraries as it relates to economic, social, educational and national development of the country.

4. Makerspaces in Public Libraries: the "Other Room" for Library Users

Makerspaces are a natural fit for libraries, providing an alternative way to deliver services and programs to their communities. The idea of a collaborative studio space for creative endeavours has caught hold in education where the informal combination of laboratory, shop, and conference room form a compelling argument for learning through hands-on exploration (Ejikeme & Okpala, 2016). As asserted by Goener (2015), Makerspaces are a natural evolution for libraries where users are allowed to tinker with technologies in order to be creative. Maker spaces are any area where people gather to make and create. These spaces often include 3D printers and other technologies, but do not necessarily have to. In makerspaces, people share supplies, skills, and ideas, and often work together on projects. For libraries, maker spaces deliver another way for community members to access information, and encourage social and creative engagement with the library, each other, and technology. Makerspaces help libraries remain relevant by allowing them to reinvent and market themselves as leading-edge, and to demonstrate their relevance in their users' lives, by offering pathways to economically valuable skills, civic engagement, and other goals that may be more important than the 'making' itself.

Many libraries in developed countries have well−developed makerspace programs and facilities already in place. For example, The Edge, State Library of Queensland, Library at the Dock, Victoria, Cambridge Public Library, Western Australia, which focuses on paper crafts, knitting, crocheting and painting and Parkes Shire Library, New South Wales, which holds fantastic creative children's programs. In the same vein, public libraries in Nigeria need to imbibe these activities and endeavour to create spaces for various purposes, such as advanced study places, artists' studios, film studios, recording facilities, chat rooms, artistic expression, poetry readings, etc.

4.1 Public Library Makerspaces and National Integration and Development

Libraries have always been at the heart of the communities they serve, and are an essential part of creating and maintaining an educated and literate population. Lopez, Caspe, and McWilliams (2016) see public libraries as centres of community support for citizens. They go on to state that there is an exciting trend for public libraries to engage with their communities beyond their traditional core business, by offering unique learning experience and opportunities for people to create and make, rather than just consume content. The need for 'unity in diversity' calls for makerspace activities in public libraries. Hence, to survive and stay relevant, public libraries need to be flexible and

innovative, embracing both the physical and virtual initiatives, if national integration is expected. Obviously, national integration is anchored on values, and this can be achieved through education. According to the New International Webster's comprehensive dictionary (1996), to integrate means to make whole by bringing together or addition of parts, to make available to people of all races and ethnic groups on an equal basis, to remove any barriers imposing segregation upon (religious, racial, or other groups). The concept is used interchangeably with nation-building and national development. Ayoade (1998) defined national integration as the building of a nation-state out of disparate social, economic, religious, ethnic and geographical element. Thus, put together, national integration could be said to mean the process of bringing together the component units of a given nation so as to achieve a high sense of belonging, mutual understanding and unity in diversity.

Therefore, in line with the above definitions and concept, public libraries are expected to serve as a place where people come together to do co-working, coordinate and invent projects worth working on together, thereby promoting national integration. It is expected of librarians that work in public libraries to provide the community with access to local, national and international resources for recreational and informational purposes, seamless access to a wide range of collections, information, technology, readers' advisory, heritage and cultural services delivered via its physical service points, and where appropriate, outreach services; and by well trained and experienced library staff. According to Anigbogu (2017), sound, value-based education is central to reconstructing the mind-set of Africans and people of African descent towards integrity, leadership and quality management skills required for the transformation of their organizations, communities, and nations at large. The provision of quality information resources and services in libraries supports the realization of this fact. Of course, libraries are fundamental to the establishment of a knowledge economy and society in all nations (Saint, Hartnett, & Strassnar, 2003). Hence, libraries empower the citizens and the society at large through knowledge dissemination.

In addition, Nyhus (2016) states that modern ideas about public libraries of the 21st century indicates that they should be a 'third place', that is a meeting place which is neither a home nor a workplace where the users are not just active participants, but also generates content. ***This is a makerspace***. The public library should be a central venue for the community, providing and encouraging creative and learning activities -formal, informal, self-directed and supported. Its co-location with other facilities will create opportunities for entrepreneurial collaborations which support economic development, national integration, local innovation, learning and exchange of ideas. Improved facilities will encourage a wide range of target groups within the community to visit the library including school students, job seekers, and adult learners. As purported by Henshaw (2016), these facilities will include use of e-resources and equipment, etc. and would be used by students, family history and local history researchers, and many more user groups. Interestingly, as adapted from Katey Allwell's business case-makerspace program, makerspace in libraries will offer the following opportunities:

1. Opportunity to deliver high quality out-of-school time experiences that positively impact participation and learning particularly among young people from lower income backgrounds.
2. Opportunity to grow a more engaged library audience, through learning opportunities, increased

community engagement and equitable access to technology, appealing to a variety of users.

3. Opportunity to foster inter-generational community bonds and new connections e.g. young people learn crafts such as knitting, weaving and crochet, while older generations can tinker with new technologies

4. A Makerspace program will offer opportunity for public libraries to enhance their role as a place of lifelong learning, and actively respond to the Nigerian government's science and innovation agenda.

5. Public libraries can help pave the way towards new inventions and foster valuable innovation that can contribute to successful, competitive and progressive communities.

4.2 Considerations for Nigerian Public Libraries

The ARUP workshops on the future of libraries held across the world in 2015 explored some of the key trends shaping the future of public libraries. The report outlines the implications on design, operation and user experience; and suggests what we may expect to see, feel and do in the library of the future if we are to attain national development. It looked at four future roles libraries could embrace: Participatory Knowledge Preservation; Enabling; Collaboration and Decision-making; Hubs for Community Wellbeing; and Seamless Learning Experiences.

Owing to the above points, the Implications for Public Libraries in Nigeria is that the public library should offer more than books and other traditional services.

4.3 Strategies for Setting up Makerspaces in Public Libraries

To create makerspaces in Nigerian public libraries a lot of planning must be put in place to ensure success. There is need for the librarian in charge of the project to do his/her research to understand the user community and their peculiar needs. **As** Ginsberg (2015) asserted "***there is no such thing as a "one-size-fits-all" makerspace***". Creating makerspaces is a lot like doing collection development: your main goal is to focus on the specific needs of your community. And don't forget that your community includes not only the patrons who visit your library, but the potential patrons who exist in your area but are not yet visiting your library.

To start a Makerspace in your library, you will need certain things in place. First, you need a space within the library, preferably the ground floor. Also, you need to look out for sponsorship from organizations that are interested in such things since your management may not have all the money you would need. Equally, you will need to train at least two library staff or employ experts to manage the Makerspace.

Apart from these, you will need tools and equipment such as the following: 3D printers, 3D scanners, Electronics, Workspaces or tables, Lasser cutting machine, consumables, soldiering iron, camera, computers, software for design, and many others

In addition, there is need to figure out the sources of funding for the project. And usually one success factor in this regard is to look beyond the Government as a main source of funding at the initial stage if you operate in a developing economy like Nigeria. You may need to start small,

and expand as your sources of funding increase. And this can be done through lobbying and advocacy efforts. Okpala (2016) did an extensive write up on the specific steps for setting up makerspaces in academic libraries in Nigeria. According to her, "the tools which could be found in a makerspace are: library space, 3D printer, 3D Scanner, software, computer(s), furniture, soldering iron, soldering benches, scissors, sewing machines, markers, cardboard papers etc.

4.4 Prospects of Makerspace Adoption in Public Libraries

As we look into the future of librarianship in Nigeria there is need for librarians to be prepared to take the future. The future, however, does not belong to traditional librarians who are not ready to adopt emerging technologies. Public libraries that will be relevant in nation building must offer more than the usual book. Public libraries should offer activities and meeting rooms, enhancing citizens' opportunities for joint participation through more open public spaces with low thresholds. According to Henshaw (2016), two key areas for libraries to consider are: The library as a makerspace (makerspace in libraries); and the library's role in lifelong learning and development.

Makerspaces in Nigerian public libraries will serve as tools for driving user patronage in a society where little attention is placed on the use of libraries. In addition, makerspaces in Nigerian public libraries could serve the purpose of creative space management. As Barniskis (2016) rightly noted "in public libraries, makerspaces and other creative places are emerging to meet the creative, social, educational, and innovation needs of individuals and communities".

Other prospects of Makerspaces in Nigerian public libraries include: Increased patronage among the young adults and other traditional non-users: due to the uniqueness of makerspaces and the access it provides to rare technologies, Nigerian public libraries can leverage on this to increase patronage of the library by those who normally will not visit the library to read books. With makerspaces, public library usage will improve and this has implications for increased Government funding since the government normally wants to spend money where it will be seen.

4.5 Making the Library an 'Infotainment' Centre and creativity hub

The creation of makerspaces in Nigerian public libraries will transform them from been perceived as boring book stores where users hardly get what they want to 'infotainment' centres and creativity hubs. The Nigerian public libraries can leverage on the idea of makerspace to get users attracted to the new generation information world where the librarian provide more than papers.

4.6 Presenting Nigerian librarians as 21st century librarians and Increase the professional prestige of librarians

Despite the obvious roles of the librarian in building an informed society, several factors still bedevil the acceptance, image and viability of librarianship especially in developing nations. The image of the librarian needs considerable improvement in view of the prevalent ignorance of others and loopholes among the librarians. With creation of makerspaces librarians can assert themselves

as information managers and technology experts. This will lead to a better image for the Nigerian librarian.

In addition to facilitating literacy and learning, public library makerspaces can help to build a stronger economy. Finally, the impacts of makerspaces are: Inspiration (inviting students to participate in the creative economy and to direct their own future); Innovation (serving as a catalyst for grassroots invention); and Education (building a connection between the community and learners).

4.7 Perceived Challenges facing the creation of Makerspaces in Nigerian Public libraries

Despite the numerous benefits of makerspace in the library, there are challenges that could hinder its creation in Nigerian public libraries. Some of these challenges are perennial problems that affect almost all ICT related projects in Nigerian libraries. Some of the most frequently encountered challenges in this regard include: negative perception by traditional librarians; poor state of funding of public libraries in Nigeria, lack of willingness of the librarians to adopt innovative strategies in libraries, lack of trained personnel to handle the makerspaces etc. Despite these challenges, makerspace holds a lot of prospects for the improvement of information service delivery in the Nigerian public libraries. Therefore, if these challenges are surmounted, the created makerspaces will ultimately become centres for national integration and development.

5. Conclusion

Libraries are going through a renaissance, both in terms of the social infrastructure they provide and in terms of a diversification of the services and experiences offered. In corporate environments they are playing an increasingly important role in the provision of collaborate workspace and innovation. In communities they are evolving into hubs for education, health, entertainment and work. Apparently, the availability of makerspace in public libraries will help to elevate the sustainable development goal four on quality education which is aimed at ensuring inclusive and equitable quality education and promoting lifelong opportunities for all (Henshaw, 2016).

In order to attain national integration and development, government should aspire to build a progressive library services, championing the development of creative spaces and makerspace programmes in public libraries. Public libraries are also encouraged to be at community hub for digital engagement, exploration and skill development that aspires innovation and entrepreneurship, which will greatly promote national integration and development, providing a valuable and capacity building resource for communities. In addition, the researchers suggested that the government should consider makerspace in libraries a welcome development and support public libraries to empower our communities by providing tools, materials, equipment and technologies needful in makerspaces. This will foster the development of citizens interpersonal, communication, teamwork, leadership and mentoring skills. Therefore, all the stakeholders of national integration which include teachers, families, librarians, the media, religious bodies, government, etc. must actively participate in this call to action.

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