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# Awareness, Adoption, and Implications of Makerspaces in Academic Library in Nigeria

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**The paper focused on awareness, adoption, and implications of makerspaces in academic libraries in Nigeria; it examined the concept of makerspaces as a physical space in the library adopting a specific interest for its patrons to share knowledge resources and services, and it discusses maker spaces in the library, technologies in the library makerspaces, standard technologies in an academic library, awareness of educational library makerspaces, implications of makerspaces in academic library and adoption of makerspaces in an academic library, etc. The paper further itemized some benefits of library makerspaces that allow full participation to collaborate and learn from one another, creating experts who participate, look for guidance and promote multiple ways of solving problems, among others; the paper concluded that academic library and library staff should be ready to adapt to the ongoing changes of library makersapeces and be aware that makersapce has come to stay and it should be embraced to better improved library services to users, the following challenges were also highlighted such as lack of adequate skilled staff, space issues, staff resistance to change, security, funding, and sporadic power supply among others.**

**Keywords:** awareness, adoption, implications, makerspaces, academic library, Nigeria.

## INTRODUCTION

The world today is changing, and libraries must adapt to changes, particularly in areas of technological aspects of handling library routines. Morefield – Lang (2015) stated that the library services need to evolve with this change of automation and remote use caused a drawback for academic libraries in the past few years. With this adoption of makerspace, physical visits to the library are decreasing, costing the library its potions and perhaps its survival. Academic libraries are competing to attract patrons to use their information and services.

According to AL- Mousawi (2018), makerspace is a term used to describe a physical space in the library adopting a specific interest for its patrons to share knowledge resources, services, and working or projects.

Makerspace hosts patrons with different backgrounds who could help and benefit each other academically and socially. Burke (2015) essentially makerspace elements of makers, tools space, and shared expertise and also often joined by a spirit of individual exploration and discovery through creative activities.

Furthermore, makerspace is a growing service area for many libraries, either public or academic libraries .Participants can create digital and physical items in common working spaces using shared equipment and resources. Hira and Hynes (2017) Makerspace is emerging as an educational space in school libraries, academies and museums worldwide. Makerspace is an environment where individuals use technologies to make physical artifacts within a community of fellow makers.

Durham (2015) makerspace has also become a place

where people can pursue their creativity by making it personally meaningful to them and their utility to the broader public. It manifested in the implementation of makerspaces that are described with phrases such as "making future dreams a reality". However, new services and innovative means of offering online information resources are being created. All of these efforts ensure the academic library's survival and sustainability. On the other hand, diver's information resources are printed or online and electronic resources are still needed and used by students and faculty members.

Makespace has appeared to be new terminology focusing on promoting physical visits to the library, attracting the users, and promoting the library as an active place. Hence, this paper presents and focuses on the awareness, adoption, and implication of makerspace in an academic library in Nigeria.

## Literature review

### Concept of makerspace

Ahn and Noh (2018) examined a maker as a person or organization that designs, assembles, and develops products based on imagination and creativity. It also refers to the people making decisions based on their ideas by applying technology used through the development of technology and shared culture that is an open-source culture. The maker movement is a process of informing and spreading the production activities that have a voluntary creating, correcting, and sharing attitude. Hussain and Nisha (2017) emphasized that a makerspace is a physical space in the library founded to allow information, knowledge, and experience sharing and hosting different people with different backgrounds academically and socially. This space enables its users to perform a variety of activities, whether they are technical or theoretical. Burke (2015) defined make space as a growing service area for many libraries such as schools and public and academic environments; participants or makers can create digital and physical items in a joint working space using shared equipment and resources.

Makerspaces can be a mechanism for encouraging students to experiment and learn beyond the classroom and outside of the typical structure of their assignments. Daley and child (2015) comment that the idea of making tinkering, engineering, and creating is not a new one. It is as old as time itself. Most individuals and communities have an innate desire to tinker and invent and better the way things in their environments function. Undoubtedly, this creates a situation where two or more people see the community at its very best, i.e. shared ideas, knowledge, and skills workings towards a common goal. Society has turned more and more to technology to find solutions to their problems and improve the quality of outlives and our experiences; less time is spent questioning, inquiring,

and fixing. Today makerspaces are the perfect partnership for libraries where information is stored, accessed, and disseminate. Libraries are places where people gather; they are community and school hubs with staff that are experts in finding and sharing information and can guide patrons through the inquiry process.

Hussain and Nisha (2017) makerspace is a physical location embedded to share resources and knowledge, work on, and network projects by different people from different academic backgrounds. Wong (2013) makerspaces are places that help cultivate creative interest, imagination, and passion by allowing participants to draw upon multiple intelligences.

Okuonghae (2019) considered the idea behind makerspace in the library to encourage users to get creative and engage in (DIY) do-it-yourself projects. It, however, noted that makerspaces do not only include machines and other technological gadgets but it also consists of a no-technology creative space. Yusuf e tal (2019) examined makerspaces as a shift in approach to teaching, which is termed turning knowledge into action; this, therefore, involves encouraging learners to think creatively and allowing them to do collaborative thinking, practising, forming, and creating new things. Gerstein (2014) pointed out that a makerspace is a place to let the learner's minds do creative thinking and access resources that could help them bring their thoughts into reality.

### Makerspace in the Library

Okpala (2016) considered the library a central place where learners come together to learn about new books and technologies and get the latest information. Many students visit the library for research which should be an excellent reason to establish a makerspace in the library. For instance, suppose the makerspace is set in the Science Education department; not all students may find it easy to visit the department depending on their location, but when moved to the library, everyone would find it convenient to visit the makerspace because most users visit the library. A study by Slatter and Howard (2013) remarked that 'in providing materials, technologies, and spaces, makerspaces offer new learning opportunities, increase community engagement, and enable equitable access appealing to a variety of users, all of which contribute to future-proofing the organization'.

Burke (2015) studied making sense: can makerspaces work in academic libraries? The study revealed that library makerspaces demonstrate this concept within virtual libraries; they seldom represent different methods for creating and using makerspaces in higher education, particularly university education.

Lamb (2015) revealed in a study conducted on makerspaces and the school library. Where creativity blooms, the study emphasized that whether you're just

getting started or you've been coordinating makerspaces for years, use online resources to extend the experience. Remember that there are many ways to participate in the maker movement.

Julian and Parrott (2017) evaluate a study on makerspace in the library: science in a student's hands. The study's findings revealed that makerspaces are immensely exciting for college science educators and academic librarians because they powerfully allow students to step away from the classroom and apply scientific principles and information knowledge.

Preddy (2013) submitted a study conducted on school library makerspaces: Grade noted that the library has long been the centre of information and knowledge, and the library is an ideal destination for projects to blossom Librarians continually search for ways to engage students. In thinking, creating, sharing, and growing; therefore, the partnership of the science educators and librarians to encourage these skills is quite powerful.

Lippincott, Vedantham, & Duckett (2014) studied Libraries as Enablers of Pedagogical and Curricular Change and Educause online; the study revealed that Librarians could help faculty members develop new assignment types that both connect to the disciplinary content and encourage students to experiment with new media.

Aiyeblehin, Onyam, and Akpom (2018) conducted a study on Creating Makerspaces in Nigerian Public Libraries as a Strategy for Attaining National Integration and Development. The study revealed that to attain national integration and development, the government should aspire to build a progressive library service, championing the development of creative spaces and makerspace programs in public libraries. Public libraries are also encouraged to be a community hub for digital engagement, exploration, and skill development that aspires to innovation and entrepreneurship, significantly promoting national integration and development and providing a valuable and capacity-building resource for communities.

Hussain and Nisha (2017) conducted a study on the Awareness and Use of Library Makerspaces among Library Professionals in India: the study emphasized that today's Libraries are not just a place to sit quietly and consult books and other pedagogical materials. Still, they have completely transformed into a spot where users can interact, create and collaborate.

Makerspaces are the demand of modern libraries and expect to be a growing trend in the years to come. The idea of establishing a makerspace in the library fosters creativity and invention. The study found that maximum respondents, i.e., 68.09%, use makerspace for educational/instructional purposes. The study also found that almost all respondents' appraised the library's makerspaces beneficially. There is a pressing need for makerspaces in Indian libraries to introduce new technologies and boost the library's image. It requires a massive effort both from librarians and users, and they expect to be vigilant enough,

Okpala (2016) emphasized a need for makerspace in the Nigerian academic library because it will help build a community of collaborators, introduce new technologies, and boost the library's image. The library, however, needs to seek the support of the university administration for this project to come to fruition.

Okuonghae (2019) revealed that library makerspace programs and workshops are planned by library management or community groups to help users learn, create, use and share DIY knowledge.

Pisarski (2014) examined a study on finding a Place for the Tween: Makerspaces and Libraries, and it was observed that school libraries organize makerspace activities such as sewing kits and knitting, cardboard creature challenge, tech take apart robot challenge and recycled book art gallery for children. This knowledge not only improves the critical thinking ability of the participants but also helps them be creative. Besides, libraries provide space for users to share and create resources, knowledge, and relationships. Thus, this study agreed with Abram (2013) highlights that libraries with Makerspaces should be able to do the following:

1. Provide access to a wide variety of tools and technology;
2. Facilitate group interaction, knowledge, and resource sharing;
3. Supply access to physical space for individual project development;
4. Provide an open environment for the expression of creativity and innovation;
5. Access to equipment for prototyping project ideas for companies

Nonetheless, in this fast-growing era of technology, academic 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 the ground, the arrangement of information resources, and the methods of dissemination and retrieval. it implies that most of these acquired materials are not adequately accessed

## Technologies in Library Makerspaces

Oliver (2016) emphasized that makerspace leaders design, outfit, and sustain their spaces, and how can they best facilitate and assess participants engaged in self-directed, design-oriented projects?. Technologies and their applications are critical at all levels of operations, library services inclusive. Burke (2015), in his study, emphasizes that the application of makerspaces in academic, public, and school libraries has primarily been guided by the environments in which these three types of libraries operate. While there are common elements to

every makerspace, those in academic libraries exhibit some differences. There are the most common technologies and activities from educational library makerspaces. There are strongest showings for creative activities resulting in digital products, such as websites, digital photos, programs, apps, and games.

Unfortunately, the survey did not allow for a fuller exploration of this distinction in academic library makerspaces. It is possible that, at least among the
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surveyed libraries, educational makerspaces tend to be focused more on discipline-related projects that involve product modelling and prototyping for engineering, design, or marketing. It might further indicate that academic library makerspaces tend to be created to meet curricular goals at an institution rather than venues for independent discovery and creation activities. However, there is a table that shows the technologies in academic library makerspaeces

**Common technologies in Academic library makerspaces**

| S/N | Technologies | # Libraries | % of all respondents |
|-----|--------------|-------------|----------------------|
| 1 | Computer workstations | 73 | 67% |
| 2 | 3D Printing | 50 | 46% |
| 3 | Photo editing | 49 | 45% |
| 4 | Video editing | 47 | 43% |
| 5 | Computer programming /software | 43 | 37% |
| 6 | Arts and craft | 40 | 36% |
| 7 | Scanning photo to digital | 39 | 34% |
| 8 | Creating a website or online portfolio | 37 | 33% |
| 9 | Digital music recording | 36 | 31% |
| 10 | 3D modeling | 34 | 30% |
| 11 | Arduino/Raspberry Pi | 33 | 30% |
| 12 | Other | 33 | 30% |
| 13 | Animation | 31 | 28% |
| 14 | High-quality scanner | 31 | 28% |
| 15 | Tinkering | 28 | 28% |

Okuonghae (2019) observed that high-tech makerspaces involve the use of the latest and cutting-edge technologies and gadget (such as 3D printers, fabricated software, robotics, and computer software and coding programs) for creating and innovation). Okpala (2016) revealed that digital technologies such as video and image editing, computer programming, and animation are pervasive among library makerspaces; further identified technologies in academic library makerspaces as library spaces, 3D printers, and 3D scanners, software, computer furniture, etc. Hussain and Nisha (2017) noted that makerspaces are the demand of modern libraries and are expected to be a growing trend in the years come also, the study statistically reported that (27.66%) of respondents admitted that their makerspaces have options of scanning photos to digital, while (17.02%) of respondents affirmed photo editing and creating websites or online portfolio were found in surveyed makerspaces,3D modelling, laser cutter, animation, and tinkering technologies were embraces with a percentage of (2.13%) each.

**Awareness of Academic library Makerspace**

Aiyeblehin, Onyam, and Akpom (2018) observed that public libraries and the internet are means of accessing information. Currently, in Nigeria, a large number of

materials are acquired, and most of them are not accessible due to policies on the ground, the arrangement of information resources, and the methods of dissemination and retrieval. This implies that most of these acquired materials are not correctly accessed. Access to information entails that access to all library and information sources, no matter the format, should be made available to users.

Today, the most significant thing that library users need but do not have access to is no longer just books and magazines but desktop fabrication and prototyping tools and the required training on how to use them. New technologies like 3D Idea how to use them. Therefore, a crucial time for libraries to retool as makerspaces to provide these tools and training to the community. Halsey (2006) asserts that library resources should include not only traditional print-on-paper media like books, journals, newspapers, etc., but also audiovisual materials like records, audio cassettes, projectors, art reproductions, maps, photographs, microfiches, and electronic information resources (EIR) like CD-ROM, computer software, online databases, internet, e-books, e-journals, and other media. On the other hand, academic libraries are expected to provide relevant and timely services that will satisfy users.

Okuonghae (2019) did emphasise that makerspaces provide a platform for makers to be creative by learning

how to do new things through hands-on, human interaction and experimental play. To be creative and inventive, a maker must work in a suitable environment where they can turn their ideas and imagination into the real stuff. However, setting up a makerspace in libraries goes beyond finding the space. It also entails active library users and identifying leaders and mentors to take charge. The following are the requirements for setting up a makerspace in the library.

1. Makerspace policy and goals
2. The suitable space
3. Makerspace theme or program for the target audience
4. Funding for getting the right tools and materials.
5. Identify training and support experts/mentors for the program.

Hussian and Nisha (2017)revealed that the maximum percentage of respondents' (68.09%) use makerspaces for academic and research purposes, while 40.43% use them for reference and information services.

Printing, laser cutting, 3D scanning, etc are generally too expensive for most individuals to afford, and many have no

## The implication of Makerspaces in Academic Library

Beyond the impact of makerspaces on learning, there are other reasons that library staff members should decide to pursue makerspaces. The philosophy behind the more prominent Maker Movement, as expressed in the Maker Movement Manifesto, has been influential.

Library staff members have found motivations to pursue makerspaces within these aspects, perhaps because the elements and practices of makerspaces connect very well with those of libraries. Like makerspaces, libraries have a mission to provide patrons with access to resources and technologies they may not be able to afford on their own. Libraries are already makerspaces of a sort, or at least maker-friendly, partly because of the technology they offer and partly because of the "how-to" resources their collections may include. As makerspaces offer a shared space for makers, libraries provide a community space to bring diverse individuals together with the opportunity to collaborate. Libraries are also educational institutions and are often connected to institutions (schools, colleges, and universities) interested in promoting STEM knowledge and activities. There are enough areas of correlation to cause library staff members to consider the creation of makerspaces.

Burke(2015) identified for all libraries the six most implications for library makerspace creators were:

(1)       Supporting learning,
(2)       encouraging collaboration,
(3)       providing access,
(4)       expanding library services,
(5)       following the library's mission,
(6)       Providing opportunities for individual creation.

Academic library staff may not have needed to stress that their makerspaces were an expansion of library services as much as public library respondents did, perhaps because there are more creative options already in place in academic libraries. School library respondents may have a more explicit goal than those from academic libraries in expressing support for STEM or reaching students with projects that crossed subject boundaries in keeping with the larger district or state-wide expectations. But the expressions of motivations can also reflect respondents' expectations for the makerspace and not imply vast differences in motivational focus by types of libraries. Nonetheless, the results of that question on the survey do provide insight into how makerspace creators of different kinds of libraries describe the purpose of their spaces.

Aiyeblehin, Oyam, and Akpom (2018) itemized the following as possible implications to academic library makerspapces:

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 various 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 allow public and academic libraries to enhance their role as a place of lifelong learning and actively respond to the Nigerian government's science and technologies innovation agenda.

## Adoption of makerspaces in an academic library

Yusfu et al (2019) stated that the idea of makerspaces has been gaining firm ground and is also fast being adopted in various educational institutions across the globe. Galaledin, Bouchard, Anis, and Lague (nd) noted that in the United States of America, several institutions had adopted makerspace as a platform for providing practical hands-on experiences for learners and an instrument for increasing creativity and encouraging innovation. Some of these institutions include the University of Ottawa's Richard L'Abbe Makerspace, established in 2014; the Invention Studio at Georgia Tech, Taubman School of Architecture's FabLab,

University of Victoria Make Lab. Also, in Australia, the University of Southern Queensland, specifically the Toowomba campus, has a well-functioning makerspace.

In a study carried out by Wong and Partridge (2016) forty-three Australian universities revealed that twelve have makerspaces, and three out of these few have two makerspaces dedicated for this purpose. These are the University of South Wales, the University of Sydney, and Monash University.

Given this, United Data Technologies (2017) noted that many K-12 schools had embraced the idea of introducing technology into the classroom as it would speed up the process of learning and improve the educational experience.

In Nigeria, the level of adoption of makerspaces is still at an early stage. According to the Centre for Education Innovations (2015), the Prikkie Academy team established a makerspace in September 2017; where youths could enhance their creativity and innovation and participate actively in problem-based learning, which will build and improve the process of learning in the long run.

Okpala (2016) highlighted that the Centre for Technical Vocation Education Training and Research Mobile College, established in 2015 serves as a mobile makerspace based by the University of Nigeria, Nsukka. With the full adoption of makerspace for learning and teaching in Nigeria, the learning process takes a new positive turn. In the long run, it would better the Nigerian economy.

Henshaw (2016) considers two critical library areas: 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.

Aiyeblehin, Oyanm, and Akpom (2018) suggested that other prospects for Makerspaces in Nigerian public libraries include: Increased patronage among young adults and other traditional non-users: due to the uniqueness of makerspaces and the access it provides to rare technologies.

**Benefits of library makerspaces to library users in Academic Library**

There is no gainsaying that makerspace promotes creativity, innovativeness, knowledge creation, and sharing among individuals. Library users benefit from makerspaces as they enable them to learn, create, use and share DIY knowledge. Library makerspaces are cheap or sometimes free with no admission cost. According to the Institute of Museum and Library Services (2014), some of the benefits of library makerspaces to library users include:

1.   It provides organized activities and safe places for teens to go after school.
2.   It develops strong partnerships with community organizations to reach at-risk teens.
3.   Through innovative programs such as learning labs and makerspaces, library makerspaces offer teens the opportunity to develop skills.
4.   It provides community service outlets for teens by engaging them in developing young adult programs and teen advisory boards.
5.   It helps teens explore and pursue their educational goals by offering information about higher education institutions and access to online applications and student financial aid forms.

Several benefits may be derived through adoption of makerspace in the educational system. This new approach to learning has the potential for the development of students and their learning process. Problem-solving skills, curiosity, and creativity could be fuelled through makerspace. A high level of imagination, inquisitiveness, and motivation characterize students that usually get involved in activities that involve the use of hands and brain. Small (2014) Fleming (2015) Moorefield –Lang (2015)It has also been noted by Davee,Regalla, and Chang (2015) that makerspace allows for an interdisciplinary relationship that helps to prepare young learners for the unfolding careers of the future. The opportunity created by makerspace arouses the need to use the hands and the brain to invent new things. Passivity among students could also be reduced significantly as a result of the opportunity for interaction among people and things. Burke(2015) observed that students begin to develop trust in themselves when they are allowed to try making things on their own with available materials in the space provided for them. Children who have access and use makerspace resources grow up to develop risk-taking techniques. The peculiarity of makerspace reflects in the mode of learning. The teacher is not the sole facilitator; students also sometimes assume the teacher's role as they explain their discoveries and crafts to teachers and fellow learners. Kuti and Fleming (2014)the era makerspace is an opening door for the emergence of new careers that are beyond the theoretical class within the four walls of the classrooms. Accidental inventions may take place in makerspace and that could open up lots of opportunities for the new generation of job seekers particularly graduates of the university. Rosheim (2018) identified the benefits library users (students) derive from library makerspace as:

1.   Allow participants to embrace failure as a means for heading toward success.
2.   Allow participants to collaborate and learn from one another.
3.   Create experts who participants will look to for guidance.

4. Foster creative thinking.
5. Create ways for participants to ask real questions to drive their exploration.
6. Encourage participants to pursue existing passions or seek out new passions.
7. Ignite excitement and a joy for learning.
8. Promote multiple ways to solve problems.
9. Allow participants to practice perseverance in day-to-day learning.

## Challenges of library makerspaces in Nigeria academic libraries

The adoption of innovation is always welcome with numerous challenges; the challenge of implementing a new idea is even more significant when such an idea involves the use of a technological gadget. The introduction of makerspaces in Nigerian libraries has faced different challenges despite the numerous benefits derived from makerspaces in libraries. Aiyeblehin, Onyam, and Akpom (2018) explained that some of the difficulties facing makerspaces in Nigerian libraries are perennial problems affecting all ICT-related projects in Nigerian libraries. These challenges range from the negative perception of traditional librarians, poor funding of libraries, and lack of librarians' willingness to adopt innovative strategies in the library to lack of trained personnel to handle the maker Spaces. In addition to the poor awareness of maker Spaces among librarians, there is the issue of inadequate storage facilities and poor maintenance culture of library infrastructures.

Furthermore, while inadequate funding remains a default and global challenge faced by libraries in deploying new technologies, libraries in Nigeria encounter unique challenges in deploying makerspaces. These challenges include the following, according to, Okuonghae (2019)

1. **Lack of Adequate Skilled Staff**: One major challenge faced by libraries in Nigeria is the challenge of inadequately skilled staff. Many libraries in Nigeria (especially public libraries) are managed by para-professionals, affecting the overall output of the library. There must be adequate qualified staff in the library if the library is to organize effective makerspace programs.

2. **Space Issues:** Finding a suitable space is key to having a successful makerspace program. However, adequate space is one thing that many libraries in Nigeria do not have. The issue of space has so far hindered many libraries from creating makerspaces programs and workshops.

3. **Staff Resistance to Change:** Just like other technological innovations introduced to libraries, makerspaces have been faced with strong resistance by library staff. This resistance can be attributed mainly to a lack of interest by most library staff. This has so far

affected the creation of makerspaces in different libraries in Nigeria.

4. **Incessant Power Outage**: One major problem facing different sectors in Nigeria is the issue of an ongoing power outage. This challenge has affected libraries in so many ways. Many technological inventions in libraries have been put aside because of the epileptic nature of the power supply. Makerspaces, like every other library project, are affected by the ongoing power failure experience in Nigerian libraries.

5. **Mentorship Issues:** Makerspaces workshop requires the right mentor for the right program. Getting the right mentor for the right makerspaces program always poses a challenge for libraries as not all libraries have staff that can mentor participants in workshops.

With this in mind, the makerspace manager ought to learn to be patient with the users and allow for more learning time; in addition to the challenges mentioned above, Okpala (2016) itemized the following problems:

i) **Security challenges:** Safeguarding the equipment in the makerspace is crucial, and it becomes paramount that more security personnel are deployed to the library to avoid stealing objects.

ii) **Funding Issues:** Poor funding is a significant challenge for libraries in Nigeria.

iii) **Lack of sufficient space in the library building**: Space is one of the most valuable assets Chan and Spodick, (2014). The university library's physical room has a vital role in learning, teaching, and research, despite the increase in digital information provision.

iv) **Sporadic power supply**: Nigeria is yet to be named among the African countries that have celebrated one whole year of uninterrupted power supply as regular power generation remains a problem in Nigeria. Frequent power outages constitute a severe bottleneck to automation. The cost of running generating plants is prohibitive (Nok, 2006). Quite a lot of money is being invested in higher institutions to find an alternative power supply

## Conclusion and Recommendations

As we look into the future of librarianship in Nigeria, librarians need to be prepared to take the lot. The future, however, does not belong to traditional librarians who are not ready to adopt emerging technologies. Academic libraries that will be relevant in nation-building must offer more than the usual books. Academic libraries should offer activities and meeting rooms, enhancing citizens' opportunities for joint participation. With makerspaces, educational library usage will improve, which has implications for increased Government funding since the government wants typically to spend money where it will be seen. Hence, academic libraries in Nigeria should know that there are more things to do to effectively and efficiently satisfy user needs. Librarians in academic

libraries should make efforts not only on printed materials and electronic resources alone; but on the requirements for the adoption of makerspaces, particularly in terms of information technologies familiarization and technical know-how of makerspaces and make it attractive to the users; it is worthy of note that academic library has gone beyond sitting and reading alone in the library. The paper recommends and concludes that there should be adequate awareness and adoption of makerspaces in an academic library; significantly, it makes accessibility of information materials easier and provides access, supports learning, encourages collaboration, expands library services, and so on DIY(do it yourself) is emphasized. Finally, the study identified significant challenges such as technophobia, Lack of interest of library staff in using technological gadgets in the library, fund sporadic power supply, among others.

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