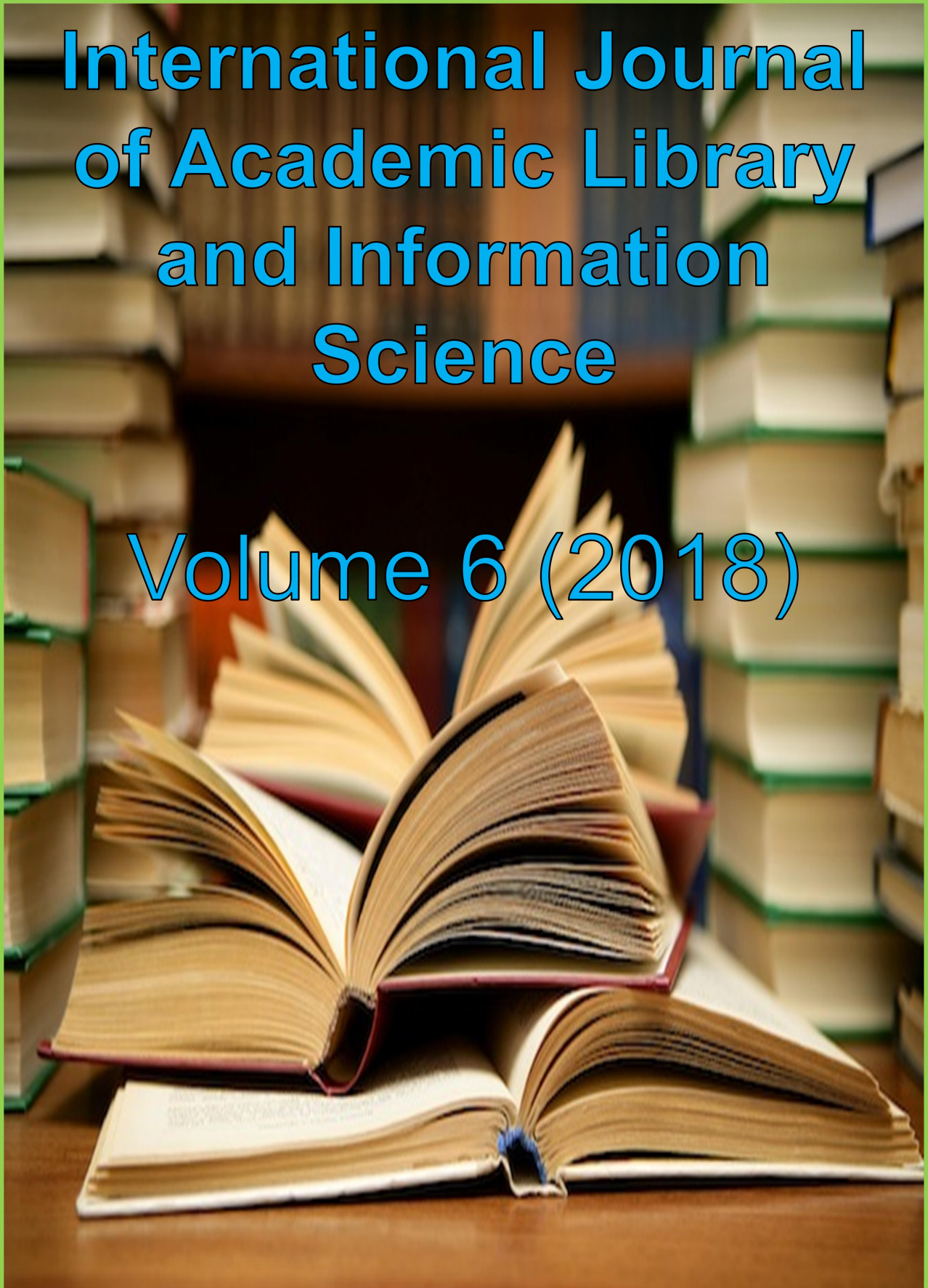


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Babalola OO (2002). Interactions between *Striga hermonthica* (Del.) Benth. and fluorescent rhizosphere bacteria Of Zea mays, L. and *Sorghum bicolor* L. Moench for *Striga* suicidal germination In *Vigna unguiculata* . PhD dissertation, University of Ibadan, Ibadan, Nigeria.

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Full Length Research

An Evaluation Study of the Application of Web 2.0 in Asian National Libraries

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Purpose

The purpose of the paper is to discover the recent trends in the application of the Web 2.0 purposes and features as exemplified through national library web sites around the world.

Design/Methodology/approach

In Asian continent collected 52 countries, out of them we found 46 countries owning national libraries. Overall, 42 national libraries are accessed URL's remaining 4 national libraries are non-accessible. On the whole 28 with 66.6 percent of the national library websites from Asia selected for data collection. Content analysis methods used for data collection and Checklist used for the main research instrument. (see Figure 1)

Findings

Results revealed that the National Library of Israel is leading in the adoption of the Web 2.0 tools and technologies in Asia (See Table 1). 17 national libraries are adopting social networking sites, followed by 16 national libraries applied RSS, 11 national libraries used Mashups, 6 national libraries used Vodcasts, 5 national libraries used Blog and 2 national libraries used Instant Messaging tool (See Table 2). And overall 17 national libraries adopted Social Networking Sites tool with in that 10 national libraries effectual adopted SNS in their websites for various purposes and features (See Table 3).

Research limitations/implications

The findings of the study can be utilized to assess the status of assorted Web 2.0 tools used in Asian National libraries. It may enable future research to investigate other aspects, such as the adoption of Web 2.0 tools in Museum library, oriental library or reference library of a particular country as well as continents.

Originality/Value

The research paper begins with an evaluating of Web 2.0 in a wide scope continent of Asian country's national libraries implemented various types of Web 2.0 technologies, like Social networking sites, RSS, Blog, Mashups, Instant messaging etc.

Keywords: World Wide Web, Web 2.0, National Libraries, Asian Countries, Continent

Cite This Article As: Kannikaparameshwari G, Chandrashekara, M (2018). An Evaluation Study of the Application of Web 2.0 in Asian National Libraries. Inter. J. Acad. Lib. Info. Sci. 6(3): 46-49

INTRODUCTION

Adoption of Web 2.0 tools and technologies, especially in the field of Asian national libraries has been a significant and exciting aspect for the last few years. The impersonal space of the World Wide Web (WWW) is rapidly being replaced by Web 2.0 tools and technologies that put an individual user in the spotlight. The application of Web 2.0 tools facilitates easy, collaborative and instantaneous access to the library resources. It (Web 2.0) has opened many opportunities for the libraries to extend the services through a user interface with librarians and modes of delivering the information to the intended users in significantly less time.

In a normal circumstance, every national library has its own website. As expected, in the last few years all-most-all types of national libraries have implemented Web 2.0 tools and technologies. Web 2.0 invites user participation, encourages constant and purposeful change.

There is a need to investigate the adoption of Web 2.0 tools such as blogs, bookmarks, RSS, podcasts, mashups, YouTube, wikis, social networks (Facebook, Orkut, Netlog and so on) in national libraries around the Asian Continent.

Concept of Web 2.0 in Asian National libraries

The term "Web 2.0" was coined by Darcy DiNucci in 1999 and was popularized by Tim O'Reilly at the O'Reilly Media Web 2.0 conference in late 2004, but 2005 onwards it became very popular. (O' Reilly, 2006)

Table 1 shows the adoption of Web 2.0 technologies in Asian national libraries. Used Web 2.0 for various purposes and features like post Library news, events and videos and browsable by date, subjects, Archives etc. It is found that the National Library of Israel (51.2%) is leading in the adoption of the Web 2.0 technologies in Asia, followed by the National Library of Malaysia (34.5%), Cultural Foundation National Library, United Arab Emirates (29.8%), National Library of Mongolia (29.2%), National Library of Thailand (28.6%), National Diet Library, Japan (27.4%) and the National Library of Sri Lanka (3.6%).

The study will be conducting at different levels to find out the plan of the Asian national libraries should be reached or not by used of varied types of Web 2.0 technologies such as:

Level 1 Identified the type of Web 2.0 tools and technologies adopted in the Asian national library websites.

Level 2 The investigator found that even though the Web 2.0 tools and technologies adopted in the Asian national library websites and is continuously updated by providing the

current information from time to time.

Level 3 The investigator took the websites which have been updated with the information sources, news, etc., in such cases, users interact with the sites and library staff; and the users share the ideas, comments, suggestions that will be considered as a good application of Web 2.0 tools and technologies.

Table 3 explored in effective application of Asian national library adopted various types of Web 2.0 tools and various levels in reaching their aims. Hence here I highly and effectively adopted Web 2.0 tools is Social Networking sites because 10 Asian national libraries are adopted SNS fully for their reaching aim.

In the Table 4 was found that high application on Facebook and Twitter was at 82.4 percent, followed by Flickr of 23.5 percent in the Asian national libraries.

Table 1: A list of the National libraries in Asia used Web 2.0

Sl. No.	National libraries	Application of Web 2.0 checkpoints N=168
1	National Library of Israel	86 (51.2%)
2	National Library of Malaysia	58 (34.5%)
3	Cultural Foundation National Library, United Arab Emirates	50 (29.8%)
4	National Library of Mongolia	49 (29.2%)
5	National Library of Thailand	48 (28.6%)
6	National Diet Library, Japan	46 (27.4%)
7	National Library of Russia	34 (20.2%)
8	National Library, Singapore	34 (20.2%)
9	National Library of Kuwait	28 (16.7%)
10	National Library of Indonesia	26 (15.5%)
11	National Library of Qatar	26 (15.5%)
12	King Fahad National Library, Saudi Arabia	24 (14.3%)

13	National Library of China	22 (13.1%)
14	National Library of Kazakhstan	22 (13.1%)
15	National Library of Korea	21 (12.5%)
16	National Library of India	20 (11.9%)
17	National Library of the Maldives	19 (11.3%)
18	National Library of Turkey, Turkey	14 (8.3%)
19	National Library of Iran	11 (6.5%)
20	National Library of Jordan	11 (6.5%)
21	The Lebanese National Library, Lebanon	11 (6.5%)
22	National Library of the Kyrgyz Republic, Kyrgyzstan	10 (6%)
23	National Library of Uzbekistan	10 (6.0%)
24	National Library of Vietnam, Vietnam	10 (6%)
25	National Library of the Philippines	9 (5.4%)
26	Iraq National Library and Archive	8 (4.8%)
27	National Library of Myanmar	7 (4.2%)
28	National Library of Sri Lanka	6 (3.6%)

5	Blog	5
6	Instant Messaging	2
7	Podcasts	0
8	Folksonomy	0

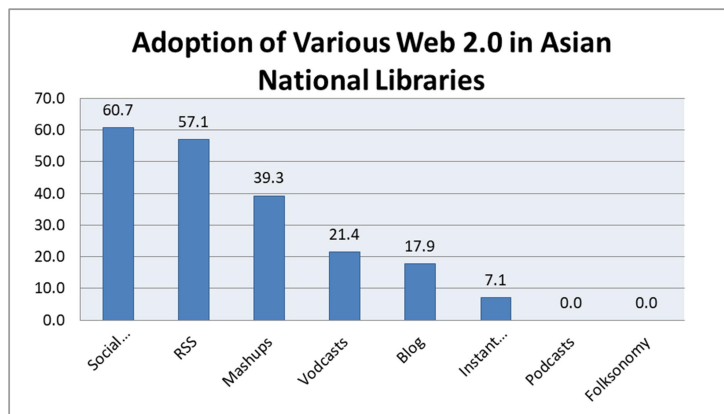


Figure 1 shows adoption various web 2.0 in Asian national libraries, 60.7 percent of the national libraries in asia adopted social networking sites and very less used Instant messaging with 7.1 percent but podcasts and folksonomy tools no one used in asian countries national libraries.

DISCUSSION AND CONCLUSIONS

Overall of this study we found in the world, more than half of the national libraries in the Asian continent adopted Web 2.0 various tools like social networking sites, RSS, Blog ect. We are happy because most of the national libraries effectively used and reached thiere aim but some of the Web 2.0 tools like podcasts and folksonomy no one library implemented. So we recomonded use folksonomy is a best tool for tagging online contenet in one certain places.

Table 2: Various types of application of Web 2.0 tools in Asian National libraries

Sl. No.	Various types Web 2.0	National libraries of Asia N=28
1	Social Networking Sites	17
2	RSS	16
3	Mashups	11
4	Vodcasts	6

Table 3: Effective application of Web 2.0 in Asian national libraries shows various Levels

Sl. No.	Various Web 2.0 tools	Effective adoption of Web 2.0 in Asian national libraries			Total Number of Asian national libraries N=28
		Levels 1	Levels 2	Levels 3	
1	Social Networking Sites	3	4	10	17
2	RSS	6	3	7	16
3	Mashups	5	5	1	11
4	Vodcasts	5	1	-	6
5	Blog	-	2	3	5
6	Instant Messaging	1	-	1	2

Table 4: Types of Social Networking sites in Asian national libraries

Sl. No.	Social Networking Sites	Asian National Libraries N=17
1	Facebook	14 (82.4%)
2	Flicker	4 (23.5%)
3	Twitter	14 (82.4%)

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Full Length Research

BEST PRACTICES FOR AUTHORITY CONTROL IN LIBRARIES

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A library cannot operate with an inchoate catalogue. A well organized catalogue becomes the image of the library for speedy retrieval and access. Authority control is the creation of a controlled vocabulary in the catalogue that involves cataloguer's decisions and experience in selecting the form that subject headings, names and titles will use as an authorized entry in the catalogue. The main objective of any library is to make her holdings accessible to her target audience so there must be a process to choose the references to link/support each form and also create relationships to other authorized headings to ensure control and promote integrity of the catalogue. Since all headings function as access points, authority control systems do well by collocating each heading and differentiating from each other to break a conflict and ensure consistency in content acquisition. The service provision of authority control is getting more purposeful by the degree of controlled access in the library catalogue. Today we witness a large-scale transition from card catalogues to online public access catalogues (from Paris principles to today's internationally shared authority records enhanced by the World Wide Web). In trying to adapt to this changing workload librarians must be totally breasted with the latest information technology systems and tools, including databases, e- resources, web searches, social media use and more. This paper discusses the place and use of authority control in modern catalogues and best practices for structured access which underscores the preposition of an effective cataloguer-user interface.

Keywords: Authority control, libraries, library catalogues, RDA (Resource Description and Access), AACR2 (Anglo American Cataloguing Rules 2nd edition) and Authority record

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INTRODUCTION

Created to identify the strength and weaknesses of a collection, authority control is indispensable in providing accurate authorized referenced information to readers by collocating the forms of headings as well as recognizes their variant references, thereby providing users with all the authoritative access points for fast and easy search. It embodies the very fabric of knowledge structure that shapes the traditional and contemporary practices to:

- Identify (confirm that the entity desired corresponds to the entity sought)
 - Select (choose an entity meeting user requirement for content, physical form etc) and
 - Obtain (acquire or access an item resources).
 - Access (retrieved and use materials when needed)
 - Navigate resources relevant to their needs.
- Find (an entity attribute or relationships)

In organization of knowledge, authority control emphasizes the value of social context of service provision that enhances the full range of accessibility to users' needs recognizing information resources, sources, systems and service to end users. Authority control, the consistent use and maintenance of the forms of subjects, titles used as headings in a catalogue is a process that creates a link between bibliographic records and authority file, therefore providing the underlying structure of the catalogue. Put differently, it is a term used in library and information science to refer to the practice of creating and maintaining consistent headings for bibliographic materials in a catalogue. Cataloguing cannot exist without a standardized accessed point and authority control is a mechanism by which we achieve immediate degree of standardization and it ensures such attributes (Taylor 2004, Taylor and Tillet ed. 2004).

Let us understand how authority control works.

A French writer Celin is also known as Celina in English speaking countries. She is also called Celonova in Russian language.

First, we must create a heading which will be generally accepted in all these languages. For example, we might decide that the form of heading for this particular author would be the name he is using for his daily publications or the one used for him in other publications or reference sources (see Authority control https://ipfs.io/ipfs/QmXoypiziW3WknFiJnKLwHCnL72vedxjQkDDP1mXWo6uco/wiki/Authority_control.html.)

Uniformity is of essence and any name used as entry must be the same name in all works concerning this particular author no matter the subject of transliteration. This way, according to Rochlind (<https://bibwild.wordpress.com>) information could easily be shared on set/memberships to that entity. In other words Rochlind puts things into sets <=> to create relationships. To create the sets of (the records for) all works by a given author is to establish a relationship between (the records for) an author and (the record for) each work by that author...To achieve this, the syndetic structure of cross referencing ('see' and 'see also') will link the three names from 'unused' to 'used term' to create consistency in usage. Example,

Celina see Celin
Celinova see Celin.

In this case Celin is the authorized name, other names, that is, unused term - Celina and Celinova, are linked or directed to the used term Celin by using the term 'see'

Function of Authority Control

Authority control fulfills two important functions (see Nlu

2013; Gorman 2004; Thomas 2011; FIU <https://library.fiu.edu>cataloguing>auth>, Swatek 2016)1) It enables cataloguers to disambiguate items with similar or identical headings. For example two authors who have published under the same name can be distinguished from each other by adding middle initials, birth or death date, or a descriptive epithet to the heading of one or both if that is different.

Note: middle name can only be used if one has evidence that that is the authors full name and must be in bracket (the addition).

To break a "conflict" of distinction, a standard committee on training (SCT) recommends that

	Adan C
Could be	Adan C [Ide]
not	Adan C I

Qualifiers like dates are used but in some cases birthdates might be added to differentiate (break the conflict) the name in the event that information shows that the authors were born the same year with the same name

Epe, N.C (10.31.62)
Epe, N.C.(12.30.62)

This is applicable only in name Authority file.

2) It is used to collocate materials that logically belong together although they present themselves differently.
Example
Uniform titles used to distinguish

- Two versions of the same work
 - preceding titles (given to earlier works)
 - succeeding titles (given to current works of the same materials)
- Two works with same title written in other languages (when representing in a catalog it takes the equal sign)

Example

Isaac Bashevis' novel is also translated to English
Der Kunzenmacher fun Lublin = The Magician of Lublin

If the title is in non English language then provide a translation in English (If English is the language of your target audience)

النيل فوق ثرثرة = *Adrift on the Nile*

Authority record

A valid authority record contains

- A Heading
- Cross referencing, and a
- Statement of Justification

Heading

A heading refers to the form of name that the cataloger has chosen as the authorized form based on the

- Catalogers' interpretation of the bibliographic item. The importance of this translation process is to allow the cataloger to turn on the analysis of the concept contained in the item into the language the user will be using for search in the library catalog.

-
- Existing National or local Authority file
- Applications of tools used for cataloguing of that material (Catalog Schemes, Subject Headings, Schedules, Supplements)
- Document that is being cataloged
- Reference sources (many other sources providing useful data)
- (see Gorman 2004, NCSU Libraries 2017)

Rochlind (<https://bibwild.wordpress.com>) sees authority control as a set using existing heading to record a consistent relationship from one record to the other. He warned

“for the primary purpose of authority control, it is highly desirable that those headings (our current mechanism of accomplishing the purpose) **never** change. The heading is used to establish a relationship, and if the heading is ever changed, all the records recording the old heading have to be found and updated—it would be better if this never had to be done (because many will invariably slip through the cracks, leading to harm to the very purpose of authority control—as most of our catalogs demonstrate)”

A catalogue cannot be so organized without a standardized (heading) access point. These access points have two functions (Gorman <http://www.haworthpress/web/CCQ>)

- enables the catalogue user to find the record quick and easy
- groups together records sharing the same characteristics for ease of access and retrieval

In order to carry out the first task the entries (headings) must be standardized providing the variant precedents. Example: the same name, title, subject should always be

maintained in a bibliographic record no matter how many times it appears.

NOTE: It is advisable to create authority records for local subject headings. Authority record varies within societies depending on the end users. This will give the cataloguer allowable liberties to always edit or update the authority records by deleting unnecessary cross references and adding new ones that will be helpful to the patrons. This further standardizes the heading access points.

Cross Referencing

Cross referencing is the syndetic structure which lays out as building blocks that underlay the bibliographic structure of the catalogue, providing explanations to the end user for variations. The main aim being to get users to the authorized form used to collect the works of an author, title or subject, cross references are used in collocating works under a single form with references to related entities when appropriate.

The **see reference** tells the user that the information being sought is to be found not under a particular heading (this heading is written down but regarded as old entry which may still be sought by the user) but rather under a different heading [authorized headings]. The old file which it leads from has been deprecated in favour of the authorized form. Put differently, the **see reference** directs the user from unused term to a used (authorized).

Example

Law, Greko – Roman
USE [see]
Law, Byzantine

‘Law, Byzantine’ is the authorized heading so entries on ‘Law, Greko – Roman (former heading)’ will be collated under ‘Law, Byzantine’

The **See also (SA)** reference shows relationship between headings. It is made from a used term to another used term and also used to link individual headings as specific references under a broader heading. In this case both headings are used authoritatively and none is deprecated for the other.

Let us look at the subject **Law** with its scope note instructions and also the treatment of its first subdivision of Interpretation and Construction

LAW

-Interpretation and Construction

Here we entered works on the interpretation of law including statutory interpretation. Works on the library

and practice of statutes are entered under **legislation**. Works, on statute law as a source of law, as distinguished from constitution and law and from the law arising from judicial or administrative decisions are entered under **statutes**.

S.A. Subdivision: Interpretation and Construction under names of legal systems, special branches of law and specific legal topics e.g Canon law-Interpretation & Construction; Criminal law – Interpretation &Construction; Juristic acts – Interpretation &Construction.

NOTE:

Most headings have subdivision combinations created by **see and see also (S.A)** references as seen above. They are not listed in the Subject Headings but are used as authorized entries to accommodate entries that would have otherwise been lost. The scheme cannot list out every name or subject but relies on instructions from the scope notes and these reference structures to properly place a particular item for consistency and retrieval.

Cataloguers agree that it makes sense to provide as many points of access to the resources as possible for proper control for quick retrieval. To achieve this they advised:

- ❖ Do not make cross reference from variant to variant names unless there is a reason to believe that the added cross reference would improve access. Variant means headings that belong to the same person but not used as authorized entry, example, one person could bear a pen name in one of works; his vernacular name in another work and official name in another. To control the heading (access point) cross reference can only be made from all the variant names to the authorized name
- ❖ Do not create reference from forms of names not recorded in the chief source or other reference sources.
- ❖ Make a cross reference from different element of heading for a person under which the name must be reasonably sought. Make reference from here to the chosen heading.
- ❖ Cross reference are made from the part of the heading following a prefix where the two elements are written together e.g.

Letrix, Syl R
not Trix, Syl R Le.

Cross references must be added accurately and comprehensively into the catalogue to provide

appropriate linkages otherwise when users are confronted with different names for same author, they might be confused if the variances are not linked. Readers could also believe that the library does not contain the resource they need just because they have not searched under all the terms in the catalogues.

Statement of Justification

In addition to providing standardized heading and suitable references, a valid authority file contains a reference to all sources of information the cataloguer used to determine both the authorized and deprecated form of the same name. To justify this, the cataloguer has to provide the name and date of publication of the source, location of the name or the title on that source.

Let us use a hypothetical name in an authority file.
Bailey, Taila 1952--, Rajuno Sylvia 1952 –

Bailey Taila 1952–
Rajuno Sylvia 1952–
The best of me 1960 (Rosez Brooks)
My School years 1960 (Rajuno Sylvia) (Bailey Taila)
Adulthood 1985 (Bailey, Taila) (Rosez Brooks)

If the first name is the form of name heading that has been chosen to be authoritative, then ideally every record of all the works by the authors above (Rajuno, Sylvia and Rosez, Brooks) will be recorded and linked to the authorized name – Bailey, Taila. There are many reasons why authors have different names. In case of Bailey, Taila the other two names could be from works for which she is a subject like poems in anthologies, festschrift; they could be names used by the same author in her works or by other reference sources to her works (which might be in different languages or it is outright different name). Other forms of the authors' variant names will have to appear in the authority file but only as unused terms not as authorized headings. These variant names are the old names that have deprecated for the new and will always have a **see reference** from the old name to the authorized name.

FUTURE OF AUTHORITY CONTROL IN LIBRARIES

We are presently being confronted with information explosion and its transformation as well as the technology used for its production, dissemination and control. Librarians can now use modern tools to provide quicker and quality service to users. Today, not only libraries share a high interest in the use of a high quality authority data for their proper work but there is an increasing interest in authority data on the part of the end users who want to have access to the result of the

cataloguing work worldwide without limitations concerning language to be used or special knowledge of access rules (Tillet and Taylor 2012). Hider (2014) conducted a survey of current cataloguing practice and policy among a structured sample of 40 Australian libraries and observed a considerable interest in the new standard, RDA and an even growing demand for records of online resources; Chambers and Myall (2010) envisioned the future of authority control as collaborative, decentralized, international in scope, web based and dynamic. In his work 'Authority Control in the World of Metadata', Borbinha (2009) discusses metadata in a digital library with relationship of authority control to technology and services. Wells (2016) stressed the indispensability of catalogue control in the metadata creation process and provided a brief overview of the value of authority control focused on ways in which certain fields in USMARC authority records interact with the online catalogue to provide valuable information to cataloguers and library users – In this different scenario one thing that has not changed is the determination by libraries to impose structure and order for controlled terminology thereby maintaining standardized and consistent form for easy access to information for users whether in a traditional or digital library. As technology advances and information is gathered from diverse sources, the need to provide control for enhanced access to resources becomes more apparent. Librarians cannot sit on the fence to watch the global information environment changing but must be proactive in participation if we, according to (UCBS Task Force 2011) must remain contenders in the information marketplace. The better the quality of authority data used in cataloguing, the more we find information contained in the catalogues and the higher the expectations that this information will match with the search terms (<https://www.ohionet.org/blog/2014/05/library-fundamentals-authority-control>)

Metadata became a new word to multi-format information resources relating to libraries, this information explosion with its service provisions gave expression to the term Digital libraries. The introduction of the digital library trumps up new challenges of integrating prints and multimedia sources into library routines. The term digital is used to describe a cybernetic phenomenon that has great dependence on the use of computers and data transmission linkages to generate and disseminate information (Resnik 2006; blog archive 2011; Oguntola 2017). For decades we have had data migrating to online resources giving a greater access to the World Wide Web. The emerging electronic systems no doubt, provide better and broader platforms for the actualization of the library goals and institutional efficiencies Omekwu (2014).

The place of library catalogue in this success story concerned Cerbo (2011) who queried the functionality of the catalogue in the present. In fact, is there even a need

for a library catalog? "Today, a large and growing number of students and scholars routinely bypass library catalogs in favor of other discovery tools, and the library catalog represents a shrinking proportion of the universe of scholarly information" (Calhoun 2006). If the catalogue shrinks then what of the information contained in them? Will there be any need to control the language and invariably library data for enhanced access? Will libraries be saddled with muddled catalogues that will stall retrieval? Then what would be the need of creating catalogues in the first place. Some cataloging librarians see these challenges as making their work more valuable and relevant. Morrelli (2016) wrote 'through the years, the cataloguing profession has evolved to get adapted to the needs of the time. Many factors have intervened in the shaping of the cataloguer as a professional, although the most important relates to the developing of new technologies. Every time technology steps further and provides new tools these are quickly incorporated into the functioning of the library. However, so far professionals have always been able to face the challenges, adapting, and taking the most advantage from those technologies'.

Information (data, knowledge) has long played in one way or the other a significant role in human culture and society and has shaped over a long period of time the way in which we behave and think in stages of human development. We must recognize that in the library world, making these information accessible is not only the hallmark of our professionalism but also in part the need to respond to better structured data processing for users. Librarians must, in their changing role, rise to this demand of catering for library users who are now very sophisticated in their demands of achieving high precision to their search terms

In the Workshop on Authority Control among Chinese, Korean and Japanese Languages, the National Library concluded that with the growth of bibliographic databases, library users demand to find the right information within a short time more and more. It is thought that a best way to meet such demand is to provide bibliographic data under authority control from the perspective of librarians (Foster, Andrea, and Howard 2010). Others see the need for cataloging control more today than ever. Wynn (2011) wrote that the Next-generation catalogs or discovery tools (NGCs) will overlay existing bibliographic data and repackage it in displays that differ from the traditional catalogues. Many implementations of NGCs have revealed errors, omissions, or inconsistencies in the underlying data that had not been apparent in the traditional library. Michael Gorman (2004) sees the digital age as a great opportunity for cataloguing control, with the library of the future having an "...integrated catalog into all aspects of its programs and services."

In adapting to this digital age and considering the avalanche of information churned out daily the need to

adopt a new set of rules to replace the Anglo American Cataloguing Rules (AACR2) became apparent to exploit the full potential that technology offers. American Library Association ALA (2012) sees RDA (Resource Development and Access) as a more dynamic tool in enabling authority record to serve current and future bibliographic needs in a much more dynamic way than AACR2. Weng (2015) also looked at the standardization of names in bibliographic database with a new model Known as RDA (Resource Description and Access), these new cataloging standards are designed to improve flexibility in rules for dealing with the changing landscape of resource description and access. RDA extend the scope of Other Designation Associated with the Person. RDA incorporates and updates AACR2 and applies the new FRBRized concept applications allowing the cataloger to be better equipped in organizing the vast resources of information available and utilizing the standardized descriptive access tools in guiding researchers to materials that might otherwise not have been found (IFLA Study Group). **RDA Steering Committee (2009)** states that RDA goes beyond earlier **cataloguing** codes in that it provides guidelines on **cataloguing** digital **resources** and a stronger emphasis on helping users **find**, identify, select, and obtain the **information** they want.

With so much information migrating to electronic resources, Librarians must manage the users to make sure that materials that are sought actually match the search terms and our ongoing attempt to impose order to this chaos represents the hallmark of our professionalism

CONCLUSION

One thing that has remained a constant is the fact that the universe of knowledge is forever expanding and librarians' priority is not only to preserve this knowledge but make it accessible.. Making user access the overall objective, authority control has operated in libraries from inception to meet these ends. As the body of knowledge expands and becomes more sophisticated, the world is becoming interconnected with globalization of information a reality, environment is evolving rapidly and web resources is changing continually to reflect changes in best practices, records change bringing in more catchy titles, authors update or change names, and new subject headings are generating or revision of old ones, libraries are compelled to update their bibliographic records as well as establish authority record alongside to not only improve access by providing consistency in the forms of heading but provide linkages between terms thereby promoting controlled access and better precision at searching , helping to bring libraries closer to the possibility of International Corporation in cataloguing.

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Full Length Research

User Education in Academic Libraries and the Information Seeking Behavior of Users

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University libraries are established to provide resources and materials for studying but students in Nigeria are not encouraged to effectively make use of them. The growth and academic excellence of a University depends on the Library that serves the institution, hence the importance of user education for proper and efficient usage of the Library. This paper drew out the importance of user education on students. Statistical data were collected through the use of questionnaire administered to one hundred and fifty (150) respondents from two Universities in Nigeria using stratified random sampling technique. Out of this number, only one hundred and thirty two (132) copies of the questionnaires with adequate information were retrieved. Data for the study were analyzed using simple percentage. The findings revealed amidst others that though more than half of the respondents do not attend Library lectures regularly yet the course has positively influenced the utilization of the library resources. It was therefore recommended that practical lectures should also be organized at the University library to further enhance the students' use of the catalogue and other library resources. It was also observed that the user education program is very essential to the academic excellence of students. Universities should also be encouraged to organize seminars and workshops for student and staff to educate them on new trends and improve their skills on utilization of library resources. The Library staff should be more friendly and ready to assist in other to encourage Library usage.

Keywords: Library instructions, User education, Library resources, Information explosion

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INTRODUCTION

User education is a process of activities involved in making the users of the library conscious about the value of information in everyday life to develop interest among the users to seek information as and when they are needed. Aina (2004) opines that user education is meant to teach library users on how to acquire information they need as well as developing the skills to make use of the resources of the library independently and appropriately. They are the instructions given to users to make them more efficient and effective when making use of the resources of the library. User education is a process

whereby potential users of the library are made to learn how to make efficient and effective use of the library and its resources. (Iheaturu, 2012)

User education has been made more important as a result of Information explosion because information seekers are faced with an overload of information. There is a need to guide students on how to search for information materials so as not to waste the time of the users.

The purpose of user education is to train the students on how to make use of the library resources effectively by

enabling users to learn the necessary skills of independent library usage and to encourage users to seek the assistance of Library professionals when the need arises. Library users should be attended to when the need arises so as to prevent frustration and lack of interest.

The library is an important component of the university system, staff and students rely on the university library for research purpose and academic excellence. It is important that librarians pay attention to this. It is essential for students, lecturers and researchers to retrieve information quickly and correctly. The right and timely information to the right users will bring about knowledge and research development. In order to serve the information users efficiently, they must be taught on how to make use of the library effectively.

LITERATURE REVIEW

User education is the process of imparting knowledge so as to make library users effectively utilize library resources. User education can also be referred to as reader or Library instruction, library orientation, use of library, library and information skill.

Library user education teaches how to make the most effective use of the Library system. It involves all activities undertaken to help users become efficient users of information. The users are taught on how to identify information need and find it, evaluate and select the best information to meet that need (Tiefel, 1995). Edoka (2000) asserts that the objective of user education is to assist the users make the best use of the library resources.

The main purpose of the Library instruction program is to improve the student's awareness of the library and the entirety of what the library has to offer, it also provides users the opportunity to improve their retrieval skills.

It is important for the librarians to improve on the library instruction program. There is a rapid development of information technology, this makes the library to be more computer technology inclined such as the system software.

According to Ali (2005), a number of users are facing lot of problems while using electronic information resources, such as lack of knowledge about the resources, lack of trained staff and inadequate terminals. Also Wills (1990) also agreed to these problems when he identified lack of information retrieval skills for making use of electronic resources, which as a result affects the level of usage of resources by students. In his study, he found that majority of students sampled could not make use of a computer, that the use of database was poor due to lack of awareness, lack of access to computers, insufficient training and the high cost of provision. Users must be taught on how to make use of electronic

materials and retrieve materials electronically.

Higher education is fast changing and getting more complex from the method of teaching to curriculum of lectures, as a result of these Libraries collections should also increase along and technological developments in handling and retrieving techniques so as to directly influence the academic performance of students.

Library is important in higher institutions, a Library is the platform where students achieve academic success, librarians should teach students who does not have any prior knowledge of information retrieval skills before entering the university the needed skills to make use of the library resources. Kari (2004) stated that information skill is necessary for students so as to equip them with knowledge to cope with the demands of information. Students are encouraged to have a wide knowledge of information skills.

Majority of the new students in the university does not have knowledge of Library usage just as Clarke (1999) suggested that Third World countries, in the majority of cases, does not have enough public libraries that could efficiently serve as a necessary addition to the teaching and learning process in secondary schools. Even the available public libraries do not have user instruction for new users. As a result of this the responsibility lies on the university Libraries to ensure efficient teaching of the use of Library for proper utilization.

Muogilim (1986) investigated why students still find library usage difficult after taking the Library instruction program. The outcome of his findings shows that students hardly interact with the library and its staff during the orientation program. Also, they were overloaded with so much information within such a short period of time that the chances of retention of new information are quite slim. He concludes that high enrolment with inadequate physical facilities made effective work difficult.

User education is very important, it helps to publicize library services and improve the image of the library. Ogwu (2010) in his study of the impact of library studies at Kogi State College of Education observes that majority of the students do not attend lectures. Majority of the student does not take Library course seriously majorly because most schools take the course as an elective program.

Akinbola (2007) opines that library instruction programs should be made to be more relevant. The course should be taken by qualified librarians and the course should be made more practical. There is a need to educate and train students so as to meet their information requirements (Babakasi, 1998). According to Suleiman (2012) it was also observed that in order to increase the standard of the library program, there should be an increase in the number of skilled librarians.

User education is done through course program, handbooks or manual, seminars, workshops and tours. Students of higher institutions are taught on the use of

library through these methods.

Library staff should be ready to attend to students at all times in a friendly manner, this will encourage the students continue to make use of the library and the library resources.

Libraries should make sure that their services show proper level of customer care and that the information given to the users is useful and at the right level. Flaharty and smith (2007) further stated that library staff needs to make an enabling environment for the staff to feel welcome at all times.

To be able to handle library resources that are available, users must be taught on how to make use of these resources. User education is necessary for students to be able to locate and retrieve information in the library manually and electronically. Librarians are expected to find out the needs of the users, interaction with the users would provide library professionals the relevant information needed (Loho, 1992)

User education is changing as a result of changes in concepts of information use and understanding. Librarians are adapting to the concepts of information and communication technology literacy. (Kenney, 2006). The level and standard of user education depends on how independent students are in searching and retrieving information materials with little or no supervision. (Singh et al, 2009).

Koenig and Nicholas (2003) opined that students in higher education institutions need user education because pattern of courses are becoming interdisciplinary, use of library resources and retrieval of information becomes easy and less frustrating for students who have gone through the library instruction program.

Ozoemelem (2009) stated that information users must learn how to retrieve information from electronic resources. Adeyemi (2002) further stated that electronic literature is very important for students and researchers due to the vast amount of data it contains. The huge amount of information at their disposal enable students to have an in depth view of the research topic

McGuigan (2001) stated that computer awareness of students before admission into higher institution helps users in making use of electronic resources in the library

After the user education program, students must continue to make use of library resources. According to Mutshewa (2008), knowledge and skill are improved through the use and practice of the library resources.

OBJECTIVES AND SIGNIFICANCE OF THE STUDY

This paper examined the methods of user education in academic libraries and the information seeking behavior of the users in libraries. In other to achieve this general objective, the following specific objectives were

developed to

1. Find out if the acquired knowledge has enhanced users in exploiting the library resources effectively
2. Know if users are encouraged to seek assistance of library professionals
3. Examine if users have the necessary skills for retrieving required information materials.
4. Find out if the acquired knowledge has enhanced the use of various sources of information in the library.

Several factors make this paper of this nature very significant. Foremost of these is the fact that there are relatively few studies on the user education and the information seeking behavior of users in academic libraries in Nigeria. This report will therefore go a long way in filling this gap. Since Academic libraries support the teaching and research needs of institutions they serve, the responsibility lies on the library to ensure that the use of information materials, resources and services are maximized to benefit the users, hence there is a necessity for user education programs.

METHODOLOGY

A survey design was chosen for this paper. This is in line with Babbie (2004) submission that the survey approach allows the investigator to draw on a large sample that is representative of the total population. The study is limited to 300 level undergraduate students in two Universities namely: Obafemi Awolowo University, Ile-Ife, Ekiti State University, Ado-Ekiti. The research instrument used for the study is questionnaire and was designed and used to collect data for the study. One hundred and fifty (150) copies of questionnaire were administered to the targeted respondents at the various Universities. Seventy five (75) respondents each were selected from the two Universities using stratified random sampling technique. Out of the 150 questionnaire, 132 were retrieved, fully completed and were found usable. This represents 88% which was considered well enough for the study. The collected data were analyzed using descriptive statistics.

RESULT AND DISCUSSION

Table 1 shows the frequency distribution of respondent's gender. 52% of the sample population is male while 48% represents the female population. This reveals that there were more male respondents than female respondents.

Table 2 shows the frequency distribution of responses acquired from the universities. Out of the 75

Table 1. frequency distribution of respondent's gender

Gender	Frequency	Percentage
Male	69	52
Female	63	48
Total	132	100

Table 2. Frequency distribution of responses acquired from the Universities.

No	Names of responded Universities	Frequency	Percentage
1	Obafemi Awolowo University Ile-Ife.	65	49
2	Ekiti- State University	67	51
Total		132	100

Table 3. level of awareness and effective use of the library resources

Items	Yes	%	No	%
I am aware of the OPAC in the Library	104	79	28	21
I can make use of the OPAC	88	67	22	17
I make use of the reference materials	110	83	22	17

Table 4. Perception of library users about the use of the library and the library professionals

Items	Yes	%	No	%
Library staff are friendly towards me	98	74	34	26
I seek the assistance of library staff	86	65	46	35
I am satisfied when they offer assistance	111	84	20	15
I get frustrated when making use of the library	34	26	98	74
I don't like asking questions from Library staff	43	33	89	67

questionnaires prepared for Obafemi Awolowo University, 65 questionnaires (49%) were recovered. 67 questionnaires (51%) were retrieved from Ekiti-state University from a total of 75.

Table 3 shows the level of awareness and effective use of the Library resources. The table 3 shows that 79% of the respondents are familiar with the Online Public Access Catalogue (OPAC) but just 67% can make use of it. This is in line with Babakasi (1998) who said students need help and guidance in order to meet their information requirements, students need training on how to find information materials so that they make use of Library resources.

Table 4 elicits information about the perception of Library users about the use of the library and the Library professionals. 74% believes the Library staff are friendly towards them. This is in line with with Fleharty and Smith (2007) who stated that users need to feel welcome and the library staff has an obligation to make the library user-friendly.

Also 65% seeks the assistance of the library staff and 84% is satisfied with the assistance rendered. 26% gets frustrated when making use of the Library and 33% don't

like asking questions.

Table 5 elicits information about the level of user's skill of retrieving information. 55% of respondents indicated that after user education they are able to find information they need in the Library, this is in line with Babakasi (1998) who stated that students need training on how to find information materials so that they make use of Library resources. Also 54% of the respondents indicated that the user education has improved their searching and retrieval skills, this is in line with Singh et al (2009) that stated that the quality of the services of the Library depends on the efficiency of knowledge retrieval methods and tools adopted by the libraries as well as skills and awareness of the users. Also in table 3, 44 % of respondents indicated that they can make use of the online database, this is in line with Ali (2005) who stated that a sizable number of users are facing problems while using electronic information resources because of lack knowledge about the resources. In the study 55% knows how to make use of the Library catalogue box while 53% indicated that they are fast in locating the catalogue card.

Table 6 elicits information about the perception of students on the methods of user education. 86%

Table 5. user's skills of retrieving information

Items	Yes	%	No	%
After user education am able to find relevant information I need	76	58	56	42
It helped me to increase my searching and retrieval skills	71	54	61	46
I know how to make use of the library catalogue box	73	55	59	45
I am fast in locating required catalogue card	70	53	62	47
I know how to make use of the online database resources available in the library	58	44	74	56

Table 6. perception of students on the methods of user education

Items	Yes	%	No	%
I was at the library tour and orientation as a fresher	113	86	19	14
The library tour and orientation was too congested	108	82	18	14
I attended Library class regularly	60	45	72	55
Is the class timetable convenient for you	107	81	25	19
Library course do clash with my main course	105	80	27	20
Do you understand what is being taught in class	112	85	20	15
Is the training program relevant to your needs in the library	113	86	17	14
Does the library professional take practical class	13	10	116	90
Do you make use of the handbook given to you	89	67	43	33
Do you feel seminars and workshops about library use are needed	95	72	37	28
Do you read lecture notes on the library course	98	74	34	26
Will you take it more seriously if it is a credit based course	87	66	45	34

indicated that they attended the Library tour and orientation program as a fresher but 82% believes that the Library tour and orientation program was too congested. 86% of the respondents are of the opinion that the training program is relevant to their needs in the Library, this is line with Loho (1992) who opined that it is expected of library personnel to interact with the users to find out what they need or what to know, and to provide them with the relevant information needed. Also in table 6, only 45% of respondents attend lecture regularly which is in line with Ogwu (2010) in his study who said majority of students do not attend lectures. 85% believes they understand what is being taught in class, this is in line with Kari (2004) who stated that information skill is necessary for students so as to equip them with knowledge to cope with information. It is important for students to have a vast knowledge of information skills. 67% makes use of the handbook given to them while 74% study their lecture notes.

CONCLUSION AND RECOMMENDATIONS

Library is an essential resource center in the university. The Library plays a major role in providing information for students, lecturers and researchers. It is of utmost importance for the information users to know how to locate and make use of these available information

materials and to locate these materials on time in other to avoid frustration.

It is necessary for the Library staff to accommodate the users in a friendly and pleasant manner so as to increase the number of the users and encourage Library usage. Librarians should embark on personnel development so that they can properly educate users especially on new trends and techniques. It is also important to encourage Library management in organizing seminars and workshops for students and other Library users. To improve Library resource utilization, it is recommended that practical classes should be added to the Library course, this will help in the usage of the Online Public Access catalogue (OPAC) catalogue box, online database, reference materials and so on.

Librarians should communicate better with faculty staff to know what information material is required in the Library. Also Library tour and orientation should not just be a day program so that it won't be congested and lastly University Management should be encouraged in changing the course to a credit based course.

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Full Length Research

Perceived Ease-Of-Use and Usefulness of Personal Digital Assistants use by Undergraduates for Academic Activities in University of Ibadan, Nigeria

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Personal Digital Assistants (PDA) are fast becoming acceptable and useful in all sectors of human endeavor; students are seriously integrating the use of PDAs in their academic activities. The use of PDAs by students can be influenced by their perception on the ease of using PDAs and the perceived usefulness of PDAs for their academic activities. The study investigates perceived ease of use and perceived usefulness of PDAs on use for academic activities by undergraduates in University of Ibadan. Descriptive survey design was adopted for this study. Population consist 3,905 undergraduate students of the Faculties of Arts and Sciences in University of Ibadan, Nigeria. The purposive sampling technique was used for this study; three departments with the highest number of undergraduates were purposively selected for the sample to be a representative of the total population. The selected departments were Chemistry, Mathematics and Computer in the Faculty of Sciences and Communication and Language Art (CLA), English and Philosophy in the Faculty of Arts. A sampling fraction of 18% was used to draw a sample size of 272 undergraduates used in the study. Findings revealed that Blackberry phones 46(16.9%) and Android phones 36(13.2%) were major PDAs used by undergraduates. Using PDAs for Class work ranked the highest in the academic activities undergraduates used their PDAs for, majority of undergraduates believed that PDA can easily be used for learning. PDA was adjudged a useful learning tool 46 (16.9%) by undergraduates and that using PDA will enhance the downloading of electronic resources needed for academic activities 45(16.5%) by students. Also, PDAs assist undergraduates to share information faster among them. The study recommended that the school administration should develop a policy that will mandate undergraduates to own a PDA (tablet or laptop computer) before they can be duly registered for the academic session in order to encourage the use of PDAs. Adequate awareness and user education should be provided by library staff, especially those in charge of emerging technologies to promote the use of PDAs for academic activities by undergraduates.

Keywords: Personal Digital Assistants (PDA), Undergraduates for Academic Activities, University Of Ibadan

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INTRODUCTION

The introduction of Information and Communication Technologies has greatly impacted our world. This has led to the use of Personal Digital Assistants (PDA) by students for educational purposes. Lots of information on the internet are now being brought close for the use of students through PDAs. Personal digital assistants, also known as smart devices are hand-held computers which can perform a wide variety of functions including access to the internet, scheduler, task list, phone-book, reference storage, camera and telephone and many more. In the educational arena, PDAs are being used by different users including students (Viken, 2009). PDA use in education provides personalised assistance that helps to support academic activities of users. PDAs offer many useful functions to help student access information resources personally for better outcomes. Through PDA, students can download required software from the Internet. There are applications on the internet that are downloadable which can be used on PDAs by students for different academic functions. Some of these applications are freeware, while some only charge little fees to purchase them. Different kinds of application can help do different kinds of work as they are designed to provide end-user comfort while using them (Andrew and Faithe, 2011).

PDAs are electronic organizers that do not need one to handle bloated spreadsheets, databases or text documents as such, users do not need to keep much power in their pockets. Instead, PDAs simply assist in organising user's lives. This is why they are called "Personal Digital Assistants" and not computers. PDA main function is to make information highly accessible to users (Kahney, 2002). This highly specified objective allows for small, fast, and cheap components without any bells or whistles. Their architecture can handle third-party software and hardware. An example of a simple PDA is the iPod. For a PDA to be successful and accepted, it must be robust and powerful.

Examples of Personal Digital Assistant includes: Window phone, Java phones, I phones, Palmtop, Blackberry, Android phones, Symbian, I-pod, Tablet PC, I-pad, Acer N Series, AlphaSmart, Apple Newton, Dell, Abacus PDA Watch. PDAs afford some potentially useful activities and interventions. For instance, data are efficiently recorded and analysed using PDAs as compared to using pen and paper. Portable and lightweight handhelds can be held in pockets or purses into almost all environments of learning or research. In comparison to desktop computers, PDAs offer improved portability, accessibility (low cost), mobility and adaptability (Ray, McFadden, Patterson and Wright, 2010). PDAs have also been proven to be valuable tools in arts and science (Ostler, 2002).

The PDAs can support software for specialised

mathematical programs, examples of these software include: applications for graphing, simulation, animation, and mathematical games. PDAs can also be connected to peripheral tools like temperature probes, digital cameras, GPS units and robotic apparatus for additional functional use. The use of PDAs by undergraduates comes with many benefits. Students can spell-check, modify, and amend their class notes on a PDA. Some lecturers distribute course materials through the Internet or file sharing functions of the PDA. Textbook publishers have begun to release e-books, which can be uploaded directly to a PDA, reducing the number of textbooks students must carry. Software companies have also developed PDA programs to meet the instructional needs of educational institutions, such as dictionaries, thesauri, word processing software, encyclopedias, and digital lesson planners (Andrew et al. 2011).

Students download magazine or newspaper from the Internet as well as dictionary and novels into their PDAs. The idea of PDA e-book was actually encouraged by the introduction of PDAs. PDA acts so many roles. Students do not need to carry MP3 player, mobile phone, dictionary, magazine and pocket book as PDAs can function for all. PDA can be used to satisfy students' information needs. PDA runs on Palm OS and Windows CE operating systems, Palm OS is a new operating system designed for PDA only which makes operations on PDAs simple and easy (Common Time - Cross platform mobile app development tools, 2015). Shimon et al (2014) carried out a study on PDA use by undergraduates. Their study showed a high frequency of use of personal digital assistant among students. The National Survey of Student Engagement (NSSE) is one of the largest U.S. college survey assessment projects, annually surveyed hundreds of thousands of undergraduate students at college and university campuses throughout the United States and Canada. NSSE findings showed that the number of smart phone respondents is increasing each year. The study further reported that in 2011, only about 4% of NSSE respondents used a smart phone, however, by 2013 the figure had increased to 13%. Preliminary results in 2014 also suggested a continued increase with roughly 18% of respondents using smart phones (NCES, 2014). Dresselhaus and Shrode (2012) also surveyed students' use of mobile devices for academic purposes in Atlanta, USA. They reported that 54 percent of undergraduate students at Utah State University use mobile devices for academic purposes. Of those, 70.8 percent of students reported that they owned a hand held device.

The use of PDA by students is determined by student's perceived ease of use and perceived usefulness of PDAs. Perceived ease of use was defined as the degree an individual believes that by using a particular

technology he would be free of effort (Davis, 1989). Perceived ease of use has strong influence on students' intention to PDAs acceptance. If one particular technology is perceived as easy to use, one will make it as new alternative to use. According to Technology Acceptance Model (TAM), perceived ease of use was found to have direct effect on attitude intention but the effect is much more on the indirect mediating factor "perceived usefulness". According to Burksaitiene (2015), perceive ease of use is defined as the extent to which students believe that using a particular PDA would be free of effort. Perceived usefulness on the other hand suggests result and outcomes of using PDAs. Davis (1989) describes perceived usefulness as the degree to which an individual believes that using a particular system would enhance his/her performance. Osubor and Chiemekwe (2015) define perceived usefulness as the degree to which an individual believe that using e-learning innovation and systems will bring enhanced learning outcomes and performance. When student's perception of the usefulness of PDA is positive, use will be compelled.

One of the key reasons for using PDAs in the classroom is that every student can have immediate and personal access to computer technology, and this particular computer technology can also be taken home easily (Brown, 2011). In order to have true technological innovation in schools, computerised devices should be readily available. Handhelds provide economical way to make technological innovation more available in schools, and the Palmweb site offers successful accounts of handhelds being used in educational environments (Palm, Inc., 2006). However, the acceptance or otherwise of PDAs is highly dependent on the perception of undergraduate on the easiness of using PDAs, as well as undergraduates perception on the usefulness of PDAs. A positive perception on the ease of use and usefulness of PDAs by undergraduate would determine if such PDA would be used or rejected by students. Students are rational beings that will naturally prefer computer system or device that will give them maximum result with little or no stress or physical effort. Some of the personal digital assistants are good but some give more comfort compared with some other personal digital assistants. This is evident in the fact that students often make findings from their friends using these PDAs to find out the level of comfort they derived from using their PDAs so that they might be guided in the choice of theirs.

STATEMENT OF THE PROBLEM

Personal digital assistants have been adjudged useful for many functions, important to this study are the functions that relate to use of PDA for academic activities by students. Despite the numerous benefits associated with

the use of PDA by undergraduates, observation revealed that some students tend to use their PDA more for social networking rather than for academic activities. Interactions with some undergraduate students who use their PDA for academic activities showed that they are incapacitated by the features of these devices like small screen size and keypads, low bandwidth and slow internet network. In addition, findings from literature revealed that there appears to be few studies that have been conducted on the use of PDA for academic activities by undergraduates. Therefore, the study on the use of personal digital assistant use for academic activities by undergraduates of University of Ibadan, Nigeria, becomes imperative.

RESEARCH QUESTIONS

The following questions guided the study:

1. What are various types of personal digital assistant use for academic activities among the undergraduates?
2. What are the types of academic activities personal digital assistant is usedfor?
3. What is the frequency of use of personal digital assistant among the undergraduates?
4. What is the ease of use of personal digital assistant by the undergraduates?
5. What is the perceived usefulness of personal digital assistant to the undergraduates?
6. What are the challenges to the use of personal digital assistant among the undergraduates?

METHODOLOGY

Descriptive survey design was adopted for this study and the study population consisted of 3,905 undergraduate students of the Faculties of Arts and Science in University of Ibadan, Nigeria. The purposive sampling technique was used for this study, with the use of this sampling method; three departments with the highest number of undergraduates were purposively selected so that the sample would be a representative of the population. The selected departments were Chemistry, Mathematics and Computer in the Faculty of Science, and Communication and Language Art (CLA), English and Philosophy in the Faculty of Arts. A sampling fraction of 18% was used. With the use of this sampling fraction the sample size for the study was 272 and data was collected by a questionnaire. Data was analysed using the descriptive statistics which consist of tables of frequency and percentage counts.

FINDINGS

Question one: What are various types of personal digital assistant use for academic activities among the undergraduates?

Table 1 shows the types of PDA used by undergraduates. The findings revealed that in Faculty of Science. The most used PDA in the Department of Chemistry for academic activities were blackberry 46(16.9%) and Android phone 36(13.2%). Undergraduates in the Faculty of Arts used tablet PC and the windows phone, with the response rate of 25 (9.2%) in the Department of CLA and Philosophy. In English Department the most used PDA was android phones 23(8.5%). The least used PDA in the Departments studied was palmtop with the response rate of 7(2.6%) in Chemistry and 5(1.8%) in Mathematics, CLA was 5(1.5%) and Philosophy 4(1.5%).

Question two: What are the academic activities undergraduates used PDAs for?

Table 2 reveals that the major academic activities that the undergraduates in the Faculty of Science use their PDAs for. Class work ranked the highest in Department of Chemistry 47(17.3%) and Computer with 44(16.2%). Use of PDA for Class work also ranked the highest in the Faculty of Arts with response rate of 36(13.2%) in the Department of CLA and English with the response rate of 32(11.8%). Academic activity the undergraduate least used their PDAs for was examination. In the Faculty of Science, Computer Science had the response rate of 27(9.9%) and Mathematics with the response rate of 22(4.4%). While in the Faculty of Arts, PDAs were least used for Practical's 16(5.9) and Assignments 18(6.6%) in the Department of English.

Question three: What is the frequency of use of personal digital assistant among the undergraduates?

Table 3 reveals the frequency of PDA use among undergraduates. In Faculty of Science, Department of Chemistry, Computer Science and Mathematics, android phones were used daily with response rate of 33(12.1%), windows phone was used monthly/weekly with response rate of 26(9.6%) in Chemistry. while the least used daily is Symbian phones with response rate of 4(1.5%) and android monthly/weekly with response rate of 5(1.8%) in Chemistry. In the Department of Computer Science the least PDA used daily are I pod and palmtop with the response rate of 7(2.6%) and the least used monthly/weekly was android phone with response rate of 4(1.5%) and in the Department of Mathematics the least used daily was symbian phone with response rate of

4(1.5%) and the least used monthly/weekly android phones with response rate of 4(1.5%).

In the Faculty of Arts, Android phone was used daily in the Department of CLA with response rate of 23(8.5%), Philosophy with response rate of 21(7.7%) and English with response rate of 19(7.0%). I-pods was used monthly/weekly in the Department of CLA 20(7.4%), Philosophy 19(7.0%) and English 15(5.5%). The least PDA used daily was Symbian phone in the Departments of CLA with response rate of 4(1.5), Philosophy 3(1.1%) and English 3(1.1%). The least PDA used monthly/weekly was Android phones in the Departments of CLA with response rate of 4(1.5%), Philosophy 4(1.5%) and English 1(0.4%).

Question four: What is the ease of use of personal digital assistant by the undergraduates?

Table 4 shows response on ease of use of personal digital assistant (PDAs). In the Department of Chemistry, majority of the respondents, with the response rate of 53 (19.5%) indicated that PDA was most easily used for learning. In Computer Science with the response rate of 48 (17.6%) agreed that PDA was easily used for learning the most. However, findings in the Department of Communication and Language Arts (CLA) showed with the response rate of 36 (13.2%) that PDA can easily be used for learning and that it makes interaction with colleagues easier with the response rate of 34 (12.5%). Undergraduates in the Department of Mathematics felt that using PDA makes their academic activities clear and understandable with the response rate of 26(9.6) and can be easily use PDA for learning 27(9.9). Undergraduates in the Faculty of Arts affirmed that they easily share information with their PDA 21(7.7), 27(9.9) in English and Philosophy departments respectively.

Question five: What is the perceived usefulness of personal digital assistant to the undergraduates?

Table 5 reveals how the respondents perceived the usefulness of PDA. In the Department of Chemistry 46 (16.9%) undergraduates believed PDA is a useful learning tool and that using PDA will enhance how they can download electronic resources useful for academic activities 45(16.5%). In the Department of CLA and Philosophy, undergraduates affirmed that PDAs assist them to share information faster with friends 37(13.6%) and 34(12.5%) respectively. Undergraduates in Department of Chemistry least perceived the usefulness of PDA to share information faster with friends 39(14.3%). While undergraduates in Computer Science (13.6%), CLA (12.1%) and English (11.0%) least perceived the usefulness of PDA in downloading electronic resources useful for academic activities.

Some of the challenges of smart personal digital

Table 1. TYPES OF PERSONAL DIGITAL ASSITANT

Faculty of Science								Faculty of Arts					
S/N	Types	CHEMISTRY		COMPUTER		MATHEMATICS		CLA		PHILOSOPHY		ENGLISH	
		Used		Not Used		Used		Not Used		Used		Not Used	
		F	%	F	%	F	%	F	%	F	%	F	%
1	Window phone	30	11.0	27	9.9	30	11.0	23	8.5	24	8.8	17	6.3
2	Java phones	18	6.6	39	14.3	15	5.5	38	14.0	11	4.0	30	11.0
3	I phone	15	5.5	42	15.1	12	4.4	41	15.1	11	4.0	30	11.0
4	Palmtop	7	2.6	50	18.4	7	2.6	46	16.9	5	1.8	36	13.2
5	Blackberry	46	16.9	11	4.0	28	10.3	25	9.2	23	8.5	18	6.6
6	Android phone	36	13.2	21	7.7	29	10.7	24	8.8	25	9.2	16	5.9
7	Symbian phones	12	4.4	45	16.5	10	3.7	43	15.8	9	3.3	32	11.8
8	I pod	16	5.9	41	15.1	13	4.8	40	14.7	12	4.4	29	10.7
9	Tablet PC	33	12.1	24	8.8	29	10.7	24	8.8	25	9.2	16	5.9
10	I pad	24	8.8	33	12.1	23	8.5	30	11.0	17	6.3	24	8.8

Table 2. USE OF PERSONAL DIGITAL ASSITANT

Faculty of Science								Faculty of Arts					
S/N	Academic activities	CHEMISTRY		COMPUTER		MATHEMATICS		CLA		PHILOSOPHY		ENGLISH	
		D		A		D		A		D		A	
		F	%	F	%	F	%	F	%	F	%	F	%
1	Class work	10	3.7	47	17.3	9	3.3	44	16.2	6	2.2	35	12.9
2	Projects	12	4.4	45	16.5	10	3.7	43	15.8	7	2.6	34	12.5
3	Seminar	23	8.5	34	12.5	18	6.6	35	12.9	15	5.5	26	9.6
4	Lectures	15	5.5	42	15.4	11	4.0	42	15.4	9	3.3	32	11.8
5	Team papers	24	8.8	33	12.1	15	5.5	38	14.0	15	5.5	26	9.6
6	Assignments	11	4.0	46	16.9	14	5.1	39	14.3	7	2.6	34	12.5
7	Examinations	27	9.9	30	11.0	26	9.6	27	9.9	19	7.0	22	8.1
8	Practicals	24	8.8	33	12.1	24	8.8	29	10.7	18	6.6	23	8.5

Table 3. FREQUENCY OF USE OF PERSONAL DIGITAL ASSISTANT

Faculty of Science											Faculty of Arts								
S/ N	PDAs	CHEMISTRY			COMPUTER			MATHEMATICS			CLA			PHILOSOPHY			ENGLISH		
		Never %	Monthly %	Daily %	Never %	Monthly %	Daily %	Never %	Monthly %	Daily %	Never %	Monthly %	Daily %	Never %	Monthly %	Daily %	Never %	Monthly %	Daily %
1	Window s phone	17 6.3	269.6	145.1	145.1	228.1	176.3	103.7	18 6.6	134.8	11 4.0	18 6.6	14 5.1	9 3.3	16 5.9	145.1	12 4.4	16 5.9	11 4.0
2	Java phones	27 9.9	20 7.4	103.7	24 8.8	176.3	124.4	207.4	14 5.1	7 2.6	20 7.4	14 5.1	9 3.3	17 6.3	13 4.8	9 3.3	20 7.4	12 4.4	7 2.6
3	I phone	2810.5	21 7.9	8 3.0	26 9.7	166.0	103.7	18 6.7	14 5.2	8 3.0	2 7.5	14 5.2	8 3.0	17 6.4	14 5.2	7 2.6	21 7.9	10 3.7	7 2.6
4	Palmto p	2910.7	23 8.5	5 1.8	27 9.9	197.0	7 2.6	20 7.4	16 5.9	5 1.8	22 8.1	16 5.9	5 1.8	20 7.4	16 5.9	3 1.1	19 7.0	14 5.1	6 2.2
5	Blackbe rry	16 5.9	16 5.9	238.5	16 5.9	134.8	238.5	11 4.0	13 4.8	165.9	12 4.4	11 4.0	17 6.3	10 3.7	11 4.0	176.3	13 4.8	9 3.3	16 5.9
6	Android phones	19 7.0	5 1.8	3312. 1	23 8.5	4 1.5	269.6	14 5.1	4 1.5	269.6	16 5.9	4 1.5	23 8.5	14 5.1	4 1.5	217.7	19 7.0	1 0.4	19 7.0
7	Symbia n phones	3211.8	21 7.7	4 1.5	2910. 7	186.6	6 2.2	21 7.7	16 5.9	4 1.5	23 8.5	16 5.9	4 1.5	20 7.4	16 5.9	3 1.1	24 8.8	12 4.4	3 1.1
8	I pod	24 8.8	25 9.2	8 2.9	23 8.5	238.5	7 2.6	16 5.9	20 7.4	5 1.8	18 6.6	20 7.4	5 1.8	16 5.9	19 7.0	4 1.5	18 6.6	15 5.5	6 2.2
9	Tablet PC	17 6.3	20 7.4	207.9	18 6.6	165.9	197.0	11 4.0	15 5.5	155.5	13 4.8	15 5.5	15 5.5	11 4.0	15 5.5	134.8	14 5.1	11 4.0	14 5.1
10	I pad	3412.5	14 5.1	9 3.3	27 9.9	155.5	114.0	20 7.4	12 4.4	9 3.3	22 8.1	12 4.4	9 3.3	20 7.4	10 3.7	9 3.3	23 8.5	9 3.3	7 2.6

Table 4. EASE OF USE OF PERSONAL DIGITAL ASSISTANT

Faculty Of Science								Faculty of Arts					
		Chemistry		Computer Science		Mathematics		CLA		Philosophy		English	
S/N	Statement	D F%	A F%	D F%	A F%	D F%	A F%	D F%	A F%	D F%	A F%	D F%	A F%
	I can easily use PDA for learning	4 1.5	5319.5	51.8	4817.6	145.1	279.9	72.6	3613.2	93.3	3011.0	10 3.7	2910.7
	I feel that using PDA makes my academic activities clear and understandable	186.6	3914.3	114.0	4215.4	155.5	269.6	114.0	3211.8	72.6	3211.8	124.4	27 9.9
	I feel that using PDA makes it easy for me to download electronic resources that enhance my academic activities	134.8	4416.2	176.3	3613.2	62.2	3512.9	114.0	3211.8	51.8	3412.5	93.3	3011.0
	I feel that using PDA makes interactions with my colleagues that centre in academic activities	207.4	3713.6	145.1	3914.3	114.0	3011.0	93.3	3412.5	82.9	3111.4	103.7	2910.7
	I feel I can easily share information with the use of PDA	134.8	4416.2	165.9	3713.6	134.8	2810.3	103.7	3312.1	124.4	279.9	186.6	217.7

Table 5. PERCEIVED USEFULNESS OF PDA

Faculty Of Science								Faculty of Arts					
		Chemistry		Computer Science		Mathematics		CLA		Philosophy		English	
S/N	Statement	D F%	A F%	D F%	A F%	D F%	A F%	D F%	A F%	D F%	A F%	D F%	A F%
1	I believe that using PDA is a useful learning tool	11 4.0	4 16.9	16 5.9	37 13.6	16 5.9	25 9.2	9 3.3	34 12.5	10 3.7	29 10.7	4 1.5	35 12.9
2	I believe that using PDA will enhance how I download electronic into resource useful for academic activities	12 4.4	45 16.5	16 5.9	37 13.6	13 4.8	2810.3	9 3.3	34 12.5	9 3.3	30 11.0	9 3.3	30 11.0
3	I feel that using PDA will enhance my interaction with colleagues	16 5.9	41 15.1	14 5.1	39 14.3	8 2.9	3312.1	103.7	33 12.1	17 6.3	22 8.1	6 2.2	33 12.1

Continuation of Table 5

4	I feel that using PDA will assist me to share information faster with friends	186.6	3914.3	10 3.7	43 15.8	7 2.6	3412.5	6 2.2	37 13.6	5 1.8	34 12.5	6 2.2	33 12.1
5	I believe that using PDA will provide access to information resources in various formats like PDF, HTML, and DOC	17 6.3	40 14.7	13 4.8	40 14.7	13 4.8	2810.3	72.6	3613.2	7 2.6	32 11.8	6 2.2	33 12.1

assistants use by undergraduates included: small size of phone keyboard, slow data entry and slow downloading in database format. Problems of battery life power outages, battery life power outages, privacy concern, poor data entry interface, poor vision, poor vision and preference of pen and paper.

CONCLUSION AND RECOMMENDATION

The era whereby users can only access the Internet in the cyber cafes is gone; PDAs now provide one-touch access to the internet at the convenience of users anywhere and at any time. The use of PDAs for academic activities will provide the opportunity for the undergraduates to access, download and share relevant information that will improve their learning and research. PDAs can also be used to discuss with lecturers and facilitators in seeking clarifications. It is therefore recommended that the school administration to encourage the use of PDAs for academic activities by undergraduates should develop a policy that mandates all undergraduates to own a PDA (tablet or laptop computer) before they can be duly registered for the academic session. Adequate awareness and user education should be provided by library staff, especially those in charge of emerging technologies to promote the use of PDAs for

academic activities by undergraduates.

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