



Perception of Student-Librarians Towards the Utilization of E-materials and Print Materials

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To cite this article:

Onwubiko Emmanuel Chidiadi. Perception of Student-Librarians Towards the Utilization of E-materials and Print Materials. *Research & Development*. Vol. 3, No. 2, 2022, pp. 91-98. doi: 10.11648/j.rd.20220302.14

Received: March 28, 2022; **Accepted:** April 12, 2022; **Published:** April 20, 2022

Abstract: The perception students have about any library resources is very paramount as it is a determinant to its utilization or lack of utilization of such resources by them. This study is an investigation on student-librarians' perception of two main reading material; print materials and electronic materials. The study employed a descriptive survey method with a student-librarian population of 120 randomly selected from four federal universities offering library and information science in Nigeria. The study was guided by three research questions while the main instrument used for data collection was a four-point Likert Scale structured questionnaire validated by three experts two from the department of library and information science and one from the department of educational measurement and evaluation. The data collected were presented in tables and analyzed using frequencies and percentages. The outcome of the study did show that despite the emergence of information and communication technologies (ICTs) which have transformed the way information resources are accessed as a result of digitalization of most information materials, most student-librarians in Nigeria have negative perception towards electronic materials (e-materials) though they showed acceptability for electronic resources. It was based on the finding that the following recommendations were made; librarians should as a matter of need go for hybrid collections (i.e. both print and electronic format of information sources) and student-librarians as librarians in the making should from the start be exposure to electronic literacy skills so as to gain adeptness in the use of electronic information resources.

Keywords: Student-Librarians, Print Materials, E-materials, Academic Libraries, Information and Communication Technology, Utilization

1. Introduction

The perception students have about any library resources is very paramount as it is a determinant to its utilization or lack of utilization of such resources by them. According to Onwubiko [1], reading is a practice of seeking knowledge information or entertainment through written words. Prior to the emergence of electronic books the only available form of materials for reading is the print but the evolution of information and communication technologies (ICTs) have transformed the way information is accessed and library users who use to physically come to the library to order or access information material can now access information materials electronically without going to the library as a result of increasing amount of information available in digital form. To this end, libraries are encouraging the use of digital/electronic resources, a salient issue that one has to take into consideration

in the actual acceptability of these materials to users [2].

The assumption by many information technology experts when electronic books first appeared on the commercial market in 1990s was that print materials will become obsolete. Regardless of the paperless society prediction, the printed book has remained in the digital 21st century and remains a much utilized and integral part of our research, media and leisure culture. At the same time, e-books (both web-based and device-based) have experience continued growth and an undeniable presence despite their growing pains in recent years [3]. To this end, there is need of establishing students' perception towards the use of print and e-materials. The use of student-librarians as a yardstick was deemed appropriate considering the fact that they are information manager in the making.

1.1. Statement of Problem

After the invention of Gutenberg, print materials took the

centre stage as the sole method of reading. However, the emergence of information and communication technologies changed the narrative as many reading materials are now in electronic formats. This development brought a change that readers are now exposed to choices as to what format is suitable for their readings. To this end, libraries have been forced to embrace this transformation leading to them encouraging the use of digital information resources and the crown glory is that most libraries have gone hybrid, some digital and others virtual making it imperative for library users to resort to e-materials. The university library as a centre of teaching/learning and research is in the fore-front of promoting e-materials as a result of the astronomical growth of information which makes it utmost difficult for her to acquire all the needed resources required in satisfying the information needs of students and faculty members in print.

There is no doubt that ICTs swept every aspect of our human activities like a hurricane and brought about a paradigm shift in information storage and accessibility but what has not been asked is what perception does students have towards the utilization of both electronic materials over print materials? Furthermore, there is dearth of literature in the area in this part of the globe and if there is any, there is none relating to student-librarians as potential information managers. It is to find an answer to the above question and to fill this gap that this study was embarked upon as to establishing student-librarians perception towards the utilization print materials or electronic materials using four selected federal universities in Nigeria running programs in Library and information science as case study.

1.2. Research Objectives

The specific objective of this study is to examine and establish student-librarians' perception of print materials and electronic materials. Other objectives include:

- i. To ascertain student-librarians perception towards the use print materials.
- ii. To ascertain student-librarians perception towards the use e-materials.
- iii. To determine which of the formats student-librarians utilize the more.

1.3. Research Questions

The study was guided by the following research questions:

- i. What is student-librarians perception towards the use print materials?
- ii. What is student-librarians perception towards the use e-materials?
- iii. Which of the two formats do they use the more?

2. Literature Review

2.1. Perception

The term *perception* which is a noun and has its etymology from the Latin word 'perceptio' meaning comprehension is according to Wikipedia [4] the process of attaining awareness

or understanding of sensory information. While the Collins Essential English Dictionary [5], describes it as insight or intuition and way of viewing. The Merriam-Webster [6] lists these definitions: "1 a: a result of observation; b: a mental image; 2. *obsolete*: consciousness; 3 a: awareness of the elements of environment through physical sensation; b: physical sensation interpreted in the light of experience; 4 a: quick, acute, and intuitive cognition appreciation; b: a capacity for comprehension. The Merriam-Webster Online Thesaurus [7] adds this: "1. the ability to understand inner qualities or relationships; 2. the knowledge gained from the process of coming to know or understand something." Synonyms in *Roget's II: The New Thesaurus* [8] include awareness, cognizance, consciousness, sense, concept, conception, idea, image, notion, and thought. Other related terms are: attention, cognition, heuristic, information, intelligence, mental model, and understanding [4].

According to Lumen [9], perception refers to the way sensory information is organized, interpreted, and consciously experienced. Perception involves both bottom-up and top-down processing. Bottom-up processing refers to the fact that perceptions are built from sensory input. On the other hand, how we interpret those sensations is influenced by our available knowledge, our experiences, and our thoughts. This is called top-down processing. Cherry [10] explained that Perception is the sensory experience of the world. It involves both recognizing environmental stimuli and actions in response to these stimuli. Through the perceptual process, we gain information about the properties and elements of the environment that are critical to our survival. Perception not only creates our experience of the world around us; it allows us to act within our environment. Perception is a uniquely individualized experience. One can only draw from what is known to oneself just as earlier explained in the introductory part of this study as in case of The Blind Men and the Elephant. The conclusion that can be drawn is that perception is a multifaceted concept that is as complex as the human mind itself.

2.2. Theoretical and Empirical Framework

The perception of users about print and e-materials is a very important determinant of their utilization or non-utilization. The perception may be in respect of its usefulness in satisfying the information needs or in the sense of the ease of utilization of these information resources. Students have shown that many students perceived e-resources to be complex and not easy to use [11, 12]. And this may as a result of inadequate search skills required to retrieve information from these databases as most of them require certain information retrieval skills to retrieve relevant information. Adetunla [11] in a research on the perceived ease and use of electronic information resources by undergraduate students of private universities in Nigeria discovered that the students perceived the e-resources as being very complex, not flexible and not easy to use making it unsuitable for meeting their information needs. He added that availability of e-resources in universities does not

determine the use of these resources but the perception on the ease of use or how user-friendly the system is determine the usage of e-resources. Complexity and lack of basic understanding of e-resources and academic databases are some of the major problems associated with students' information seeking process in the library [12]. The deduction is that perception of scholarly e-resources is a key factor to their utilization by students.

As expressed by Bodomo, Lam and Lee [2], the emergence of electronic media and the growing of electronic resources have had a significant impact on reading in the 21st century that reading is no longer confined to only print materials rather there are electronic versions of many print materials available on the world wide web. It was in the light of the above that Flanagan and Metzger [13] revealed that though the information needs of the people have not changed but the way they satisfy these needs have changed. As disclosed by Krakowska [14] and Akpojotor [15], young people of today think, learn, socialize, shape identity and seek information differently in this digital age, the era of web 2.0 and participatory culture. In his study on faculty and graduate students' use of electronic journals, printed journals and electronic databases at Ohio State University (OSU) during the years 1998-2000, Rogers [16] discovered that since 1998 there has been a significant progress in the acceptance and usage of electronic journals at OSU. In 1998, only 200 e-journals were available, while in 2000, the number of available e-journals increased to more than 3,000. In 1998, 19% of the respondents used e-journals at least once a week, while in 2000, the percentage increased to 36%. At the same time, the least weekly usage of printed journals decreased from 45% in 1998 to 34% in 2000.

The implication of this development is that students and users of the library now have options as to the most suitable format to choose for their readings. To the side of libraries in general and academic libraries in particular, it has become imperative for them in developing their collections to put into consideration the preferred medium by users with a view to satisfying their needs. As found by Walter and Nyirenda [17], institutional data suggest that many students are reluctant to use library e-books, while Hoseth and McLure [19] and Woody, Daniel and Baker [20], discovered a clear preference for print materials despite of the general awareness of the advantages offered by e-books. On the other hand, users will prefer more computer content; digitized finding aids, digital repositories of articles and online access to newspapers [21]. Tosun [22] in his study discovered that large part of teachers and students do not read e-books. The study also revealed that books are reliable compared to computers and that reading comprehension is faster and better with the use of print books. The above result is in agreement with that of Keller [23] and Jeong [24] who found in their separate studies that greater comprehension is gained by students in reading of print books as against e-books. In another development, Aliyu, Ado, Danjuma, Garba and Gezaba [25] in their study found that prolonged use of computers causes the eye to sore, itch, and be reddish.

As noted by Weeks [26], there are some types of research that are actually much easier, faster and more cost effective to perform using printed materials rather than electronic resources, whereas, online resources with some other information is easier and cost effective. The above declaration is a stronghold for the maintenance of hybrid library. All the same, it is obvious that the emergence of electronic resources and digital libraries have had an undeniable impact on the use of print resources in libraries; ICT innovation has transformed the ways academic libraries manage their affairs and that the internet has changed the accessibility to information materials. The declaration therefore is that electronic storage and delivery media have challenged the supremacy of printed words on paper and microforms of various kinds in the struggle for information dominance as print material have been for long the traditional method of reading and library users come physically to access information materials, while today users can access any information without going to the library Shuman [27] and Lewenstein et al. [28] opined that the experience of reading a book published online differs quite dramatically from reading a print book stating that the skills involved are more complex.

It is believed that the electronic revolution has not resulted in the complete replacement of printed publication by electronic media the technological advances of the computer age have drastically altered the relation between information sources and society as a whole [29]. As reported by Layman and Varian [30], books (print) increased by 83% in the United States of America (USA) from 1999 to 2002 while online scholarly journals virtually doubled from 1991 to 2001. Recent studies for instance, Levine-Clark [31] and Wang & Bai [32] affirmed to this while Nicholas, et al. [33] was particularistic as they noted that e-book penetration is very strong.

According to Gilster [18], we read books but we browse the web as the interaction between the reader and the e-book is no longer static. The reader has become more active in the process of reading by clicking and browsing through Web Pages and hyperlinks. Ray and Day [34] revealed that in order to utilize the growing range of electronic resources, students must acquire and practice the skills necessary to exploit them as the skills required to maximize the potential of electronic resources are much greater than those required for searching printed sources. Kozak [35] averred that books have endured because they are remarkably well engineered; easy to use, portable, relatively cost effective and require no instructions or manual before use. On the other hand writes Tiwari [36] traditional library are limited by storage space while digital libraries have the potential to store much more information since digital information require very little physical space to contain them. As such, the cost of maintaining a digital library is quite lower than that of traditional library.

3. Methodology

The study employed a descriptive survey method with a

student-librarian population of 120 randomly selected through balloting from four federal universities offering library and information science in Nigeria which are: Bayero University, Kano (North), University of Ibadan (West), University of Nigeria, Nsukka (East) and University of Calabar, Calabar (South) with each of the universities producing 30 respondents. Of the 120 respondents, 76 (63.33%) were female and the remaining 44 (36.67%) were male. The study was guided by three research questions while the main instrument used for data collection was a four-point Likert Scale structured questionnaire validated by three experts; two from the department of library and information science, Nnamdi Azikiwe University, Awka and one from the department of educational measurement and evaluation, Abia State, University, Uturu. The data collected were presented in tables and charts analyzed using frequencies and percentages.

4. Presentation of Data

Table 1. Distribution of respondents by level.

Level	frequency	Percentage (%)
4 th year	40	33.33
3 rd year	40	33.33
2 nd year	25	20.84
1 st year	15	12.5
Total	120	100

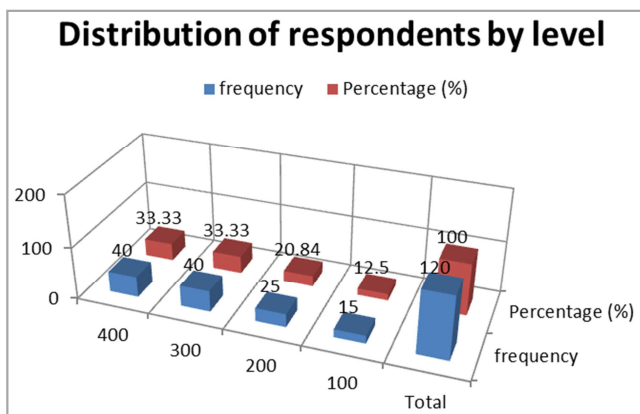


Figure 1. Distribution of respondents by level.

The data in table 1 and figure did show that 12.5% of the respondents were in 1st year; 2.84% or 25 respondents were in 200 level, 40 respondents representing 33.33% respectively were in 300 and 400 levels.

Table 2. Frequency of usage of e-materials.

Frequency of usage	No of respondents	Percentage (%)
Daily	47	39.17
weekly	36	30
Monthly	7	5.83
Occasionally	30	25
Total	120	100

From the data collected and displayed in table 2 and figure 2 above, 39.17% or 47 respondents read e-materials daily; 30

or 36 respondents read e-materials weekly and 7 respondents or 5.83% read e-materials monthly while 25% or 30 respondents read e-materials occasionally.

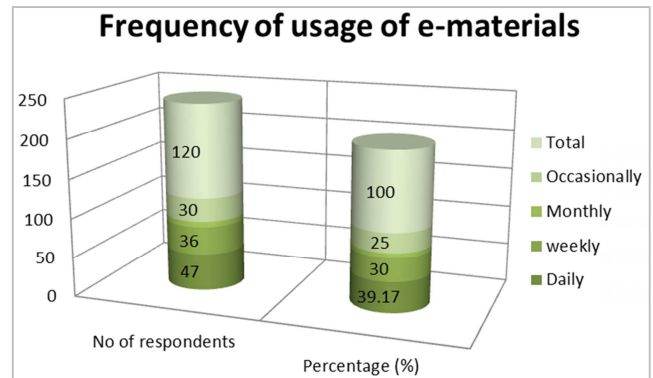


Figure 2. Frequency of usage of e-materials.

Table 3. Frequency of utilizing print materials.

Frequency of usage	No of respondents	Percentage (%)
Daily	75	62.5
Weekly	30	25
Monthly	4	3.33
Occasionally	11	9.17
Total	120	100

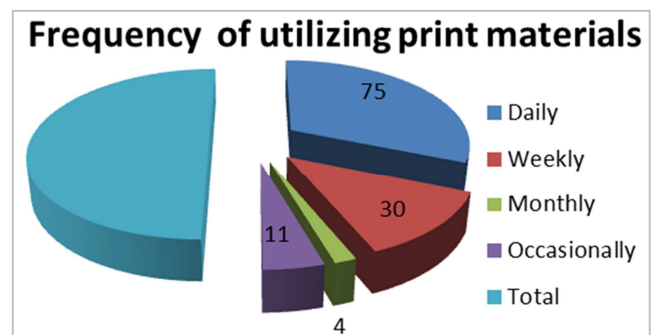


Figure 3. Frequency of utilizing print materials.

Table 3 and figure 3 above showed that 62.5% of the respondents use print materials on daily bases; 30 respondents or 25% use print materials weekly, 9/17% (11 respondents) use print materials occasionally, while 3.33% or 4 respondents read print materials monthly.

Table 4. Frequency of printing e-materials for utilization.

Frequency of usage	No of respondents	Percentages
Daily	36	30
weekly	43	35.83
Monthly	34	28.33
Occasionally	7	5.83
Total	120	100

The collected data shown in table 4 and figure 4 revealed that 43 respondents or 35.83% utilize e-materials weekly; 30% or 36 respondents read them daily and 34 respondents representing 28.33% read e-materials monthly while the remaining 7 respondents or 5.83% only use e-materials occasionally.

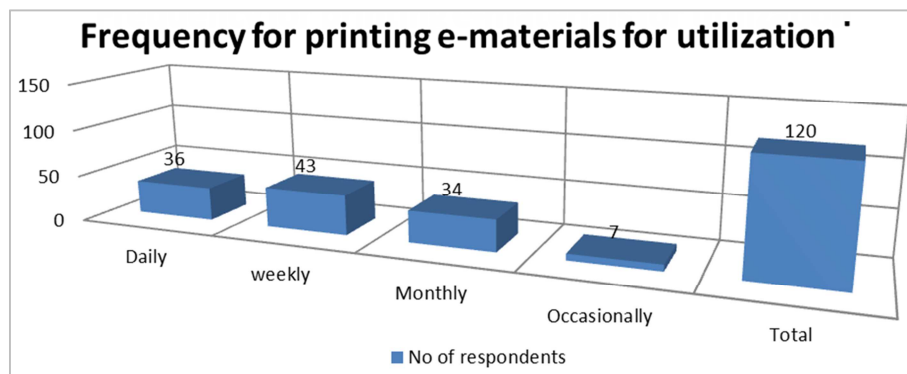


Figure 4. Frequency for printing e-materials for utilization.

Table 5. Student-librarians perception of e-materials.

Student librarians Perception of e-materials	SDA		DA		A		SA	
	F	%	F	%	F	%	F	%
I have never had a reason to use e-materials	57	47.5	43	35.83	17	14.17	3	2.5
It is difficult to access e-materials	33	27.5	52	43.33	22	18.33	13	10.83
It is confusing searching/navigating e-materials	30	25	45	37.5	35	29.17	10	8.33
Use of e-materials requires training	24	20	43	35.83	43	35.83	10	8.33
I don't enjoy reading-off computer screen	25	20.83	49	40.83	26	21.67	20	16.67
I get distracted reading from computer screen	21	17.5	33	27.5	44	36.67	22	18.33
Staring at a computer is uncomfortable	17	14.17	43	35.83	37	30.83	23	19.17
I can focus on a computer screen better than trying to flip through a print material	15	12.5	54	45	32	26.67	19	15.83
Reading from a computer or other e-devices affects the backbone and neck, thereby causing back and neck pains.	15	12.5	26	21.67	44	36.67	45	37.5
Reading from the computer and other e-devices is not convenient (system failure and others)	12	10	31	25.83	50	41.67	27	22.4
Prolong use of the computer and other e-devices affects one's sight	8	6.67	35	29.17	39	32.5	38	31.67
Access to e-materials is easier from anywhere	4	3.33	14	11.67	56	46.67	46	38.33
I read faster from e-sources	3	2.5	42	35	41	34.17	34	28.33
It easier to access the internet than going to the library	2	1.67	8	6.67	50	41.67	60	50
Computer stores more e-materials than the traditional library can store print materials	2	1.67	5	4.17	54	45	59	49.17

The data in table 5 showed that collectively 100 respondents or 83.30% disagreed that they have never had a reason to use e-materials, 85 respondents representing 70.83% disagreed or strongly disagreed that the use of e-materials is difficult and 62.5% or 75 respondents likewise disagreed or strongly disagreed that it is confusing searching/navigating e-materials. A total of 67 respondents or 55.83% disagreed that it requires training to use e-materials. On the other hand, 55% or 66 of the respondents agreed or strongly agreed that they get distracted reading from a computer screen. Whereas, 50% either disagreed or strongly disagreed that staring at a computer is uncomfortable, another 50% either agreed or strongly agreed that staring at the computer is uncomfortable. 85 or 74.17% of respondents either agreed or strongly disagreed that reading from a computer or any other e-device affects the backbone

and the neck resulting to back and neck pain. 57.5% which stands for 69 respondents either disagreed or strongly disagreed that they can focus on computer screen better than trying to flip through a print material. 64.5% agreed or strongly agreed that that reading from computer or any other e-device is not convenient. 64.1% or 77 of the respondents either agreed or strongly agreed that prolonged reading from computer or other e-device causes eye to itch or be reddish. However, 102 of the respondents representing 85% indicated that access to e-materials is easier from anywhere whereas, 62.5% or 56 respondents revealed that they read faster from e-sources. 91.67% or 110 respondents agreed or strongly agreed that it is easier to get online than to get to the library and highest score of 94.17% agreed that computer stores more e-materials than the traditional library can store print materials.

Table 6. Student-librarians perception of print materials.

Perception	SDA		DA		A		SA	
	F	%	F	%	F	%	F	%
I will not use a print if e-version is available	22	18.33	40	33.33	38	31.67	20	16.67
I prefer carrying about a printed material around than a computer or any other e-device	8	6.67	25	20.83	50	41.67	37	30.83
I can read a printed material anytime unlike e-material that is not convenient	6	5	15	12.5	60	50	39	32.5
I do not get unnecessary distraction with reading print materials	6	5	21	17.5	55	45.83	38	31.67
I would prefer to read a print material in bed but not same with computer and other e-devices	4	3.33	31	25.83	55	45.83	30	25
It is easy to locate a print material	2	1.67	32	26.67	60	50	26	21.67
I prefer to print a few pages to carrying a book around	2	1.67	30	25	53	44.17	35	29.17

Perception	SDA		DA		A		SA	
	F	%	F	%	F	%	F	%
Computers are sometimes unreliable while print materials are always there	2	1.67	22	18.33	57	47.5	39	32.6
I can stare at a print material for long unlike computer screen.	2	1.67	30	25	40	33.33	48	40
I comprehend better when I read print materials than when I read e-materials	3	2.5	30	25	41	34.17	47	39.17
I read faster when I read print materials	3	2.5	27	22.5	45	37.5	43	35.83
A print material can always be in one's grasp	2	1.67	16	13.33	60	50	42	35
Print materials are handy	2	1.67	8	6.67	54	45	56	46.67
No training is needed to use a print material	1	0.83	13	10.83	53	44.17	53	44.17
Use of print material is easy	1	0.83	4	3.33	63	52.5	52	43.33
Some print materials are heavy to carry around	1	0.83	6	5	57	47.5	54	45

Key: SDA=Strongly Disagree. DA=Disagree, A=Agree, SA=Strongly Agree.

As shown in table 6, 51.66% representing 62 respondents disagreed or strongly disagreed that they will not use a print if an e-version is available. 87 (72.5%) respondents prefer carrying around a print material to carrying around a computer. 77.5% or 83 respondents agreed or strongly agreed to not getting unnecessary distractions with using print material. 82.5% of the respondents indicated that they can use a printed material anytime unlike e-material that is not convenient; 70.83% prefer to use a print material in bed but not same with computer and other e-devices. On the unreliability of e-materials over print, 24 of the respondents disagreed or strongly disagreed but 80.1% or 96 respondents agreed or strongly agreed that e-materials using the computer are sometimes unreliable while print materials are always there. 71.67% agreed that it is easy to locate print materials, 73.33% agreed to reading faster when reading print materials. 73.34% agreed to understanding better when reading print material than e-materials, 88.34% or 106 respondents indicated that no special training is required to use print materials and 95.83% agreed that the use of print material is easy. However, 92.5% representing 111 respondents agreed that some print materials are too heavy to carry around unlike the computers and other e-devices.

5. Discussion of Results

The collected and synthesized data as displayed in tables 2 to 5 and figures 2 to 4 as well as table 6 well presented the outcome of this study which is that student-librarians have adequate perception of both print and e-materials and these perceptions have guided their utilization by the students. The perception tend to incline positively towards the print materials while the e-materials has this comparative advantage of being the format that could be easily accessed anywhere, faster to read and that the computer and stores more e-materials than the traditional library can store print materials. On the other hand, it noted that print materials are reliable, faster to read and better understood. The outcome of this study is in conformity with that of Walter and Nyirenda [17], who revealed in their studies based on available institutional data that many students are reluctant to use library e-books, while Hoseth and Melure [19] and Woody, Daniel and Baker [20], discovered a clear preference for print materials despite of the general awareness of the advantages offered by e-books. The findings in this study further buttress

the discovering of Tosun [22] in his study that large part of teachers and students do not read e-books. The study also revealed that books are reliable compared to computers and that reading comprehension is faster and better with the use of print books. The above result is in agreement with that of Keller [23] and Jeong [24] who found in their separate studies that greater comprehension is gained by students in reading of print materials as against e-materials.

The result of this study further proves wrong the claims of IT experts and affirms the assertion of Gregory [3] that the assumption by many information technology experts when electronic books first appeared on the commercial market in 1990s was that print materials will become obsolete. Regardless of the paperless society prediction, the printed materials have remained in the digital 21st century and remained a much utilized and integral part of our research, media and leisure culture.

The study also discovered that student-librarians believe that prolonged exposure to computer screen while reading e-materials causes the eyes to itch and turn reddish which may eventually develop into bad sight and that reading from a computer or other e-devices affects the backbone and neck, thereby causing back and neck pains among other challenges. This claim agrees with the finding of Aliyu, Ado, Danjuma, Garba and Gezabain [25] their study that prolonged use of computers causes the eye to sore, itch, and be reddish as well as cause backbone and neck pain.

On the other hand, one cannot write-off e-materials as the result of the study also shows that a reasonable number of student-librarians are satisfied with them (see tables 2, 4 & 5 and figures 2 & 4). From the data in these tables and figures we noticed that over 30% of the students-librarians still prefer e-materials in affirmation to Gilster [18] declaration that we read books but we browse the web as the interaction between the reader and the e-material is no longer static. The reader has become more active in the process of reading by clicking and browsing through Web Pages and hyperlinks.

6. Conclusion and Recommendation

It is true that the outcome of this study is that student-librarians have adequate perception of both print and e-materials and these perceptions have guided their utilization by the students. The perception tend to incline positively towards the print materials while the e-materials has this

comparative advantage of being the format that could be easily accessed anywhere, faster to read and that the computer and stores more e-materials than the traditional library can store print materials. On the other hand, it noted that print materials are reliable, faster to read and better understood, but that does not indicate that information and communication technology evolution has not permeate deep into our educational system rather it an indication that academic libraries and librarians have a lot to do in the area of creating awareness. Just like in the words of Weeks [26] there are some types of research that are actually much easier, faster and more cost effective to perform using printed materials rather than electronic resources, whereas, online resources with some other information is easier and cost effective. The implication is that both print materials and e-materials have their own distinctive advantages and disadvantages as well as qualities for purposes of utilization and student-librarians should be meant to see them from these angles. It is in view of these, that the following recommendations are made:

- a) In the first instance, academic libraries and librarians should take it as a mandate to ensuring that proper awareness programs are kept in place so as to make student-librarians as information managers in the making to realize the importance of e-resources in information management and satisfying information needs in an era that information has become power and one main determinant of how individuals and nations are rated.
- b) As a follow up, student-librarians should be exposed to electronic literacy skills so as to gain adeptness in the use of electronic information resources. Ray and Day (1998) revealed that in order to utilize the growing range of electronic resources, students must acquire and practice the skills necessary to exploit them as the skills required to maximize the potential of electronic resources are much greater than those required for searching printed sources.
- c) Furthermore, academic libraries should go hybrid going by the words of Weeks (2008) that there are some types of research that are actually much easier, faster and more cost effective to perform using printed materials rather than electronic resources, whereas, online resources with some other information is easier and cost effective. To this end, librarians should endeavor to have e-format of almost every print material in their collections and vis-vis. This has become imperative for them in developing their collections to put into consideration the preferred medium by users with a view to satisfying their needs.
- d) Library schools should be more practical oriented in their teachings. The act of theoretical teaching that is mostly seen in library schools in Nigeria in the opinion of the researcher is obsolete and very absurd thus should be discouraged with installation and provision of state-of-the-art facilities and infrastructure befitting modern library schools as seen in developed countries like the US, Britain, Canada and Germany among other nations.

No matter the way one views, the obvious is that the emergence of electronic resources and digital libraries have had an undeniable impact on the use of print resources in libraries; ICT innovation has transformed the ways academic libraries manage their affairs and the internet has changed the accessibility to information materials.

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