AWARENESS AND USAGE OF E-BOOKS AMONG PRE-SERVICE SCIENCE AND TECHNOLOGY EDUCATION TEACHERS IN COLLEGE OF EDUCATION, MINNA NIGER STATE

BY

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ABSTRACT

This study examined awareness and usage of e-book among pre-service Science and Technology Teachers in College of Education, Minna Niger State. Two research questions were formulated and answered in the study. The study adopted a descriptive survey design. A simple random sampling technique was used to select 300 pre-service teachers. Instrument used for data collection was Awareness and Usage of e-book Questionnaire (AUeQ) developed by the researchers. Items in the instrument were subjected to face and content validity and a reliability coefficient of 0.71 was obtained using Cronbach's alpha formula. Data collected was analyzed using mean and standard deviation Findings from the study revealed that pre-service teachers in College of Education Minna are aware of the existence of e-books but have negative attitudes towards its usage. It was, however, recommended that institutions of higher learning should equip their libraries with modern technological tools and ICT devices necessary such as the computer hardware, software and applications like the e- books and reliable internet services to support optimal usage of e-books.

Key words: Awareness, Usage, e-books, Pre-service science and technology teachers

Introduction

The emergence of Information and Communication Technology (ICT) has led to the growth and improvement in education today, thereby changing the needs and aspirations of library users. With the advent of ICT, libraries are now shifting from traditional printed resources to the use electronic resources and individuals no longer visit the library but access information in the comfort of their offices, homes and recreation centers through electronic resources especially among pre-service science and technology teachers in tertiary institutions (Nnadozie & Nwosu, 2016; Okazie, 2016).Electronic resources are systems in which information is stored electronically and made accessible through electronic systems and computer networks. These resources

include OPAC, CD-ROMs, Online-Databases, E-journals, E-books, Internet resources (Oak, 2016).

E-books are the electronic versions of a traditional printed books that can be downloaded over the internet and it can be read using a personal computer or by using e-book reader with a portable electronic device (Rouse, 2005). The application of this e-resources in the libraries especially among students in tertiary institutions of learning provide opportunity to users to access and utilize e-books and other online resources effectively (Saikia & Gohain, 2013; Atram, 2017 & Prakesh, 2017). Several benefits of e-books have been acknowledged by scholars which include portability, convenience, accessibility, affordability functionality, and cost-effectiveness for educational purposes and even for leisure (Hunt, 2012; Rodenhiser & Glackin, 2011 & Kobi, 2008).

Despite the benefits of e-books for teaching and learning particularly among pre-service teachers in tertiary institutions in Nigeria it has been observed that it is constrained by some factors such as low level of awareness and usage that ranges from ease of use (usability issues such as comfort and ease for reading for long periods); display, functionality, battery longevity; to the availability of broadband connection (Hunt, 2012: Dearnly, McKnight & Morris; 2008).

Studies conducted on the level of awareness on e-books among undergraduate students have shown varying results. Findings from most of the studies have shown that undergraduate students are aware of the availability of e-books (El-Berry 2015; Akpojotor 2016; Azubuike 2016 Chirra and Madhusudhan 2009 & Kobi 2008). Similarly, in an independent study Akpojotor, (2016) and Azubuike's (2016) found high rate of awareness of information literacy skills and awareness of electronic information resources among post graduate students in Nigeria This is however in agreement with the findings of Colaklar and Aras (2015) that also observed that social media tools are very effective means of creating user awareness of e-books. From the foregoing discussion it is observed that there is awareness of e-books among undergraduate students in tertiary institutions but with some limitations such as low usage, availability and access.

Although studies have shown high level of awareness of e-books among students in tertiary institution however, adoption and usage of this resource have not been encouraging. In a study conducted by Wilson,'Ambra, and Drunnond, (2014) which explored university of new south Wales in the performance of their academic tasks using e-books found that e-book usage among the medical students was relatively low. Similarly, a Joint Information Systems Committee (JISC, 2012) study in the UK, found that 60 percent of users surveyed had used e-books. The JISC study also found that while 46 percent of users obtained the last e-book they used through their libraries, nearly the same number (43 percent) obtained their last e-book via the Internet. However, recent studies by scholars have revealed high usage of e-books among students in tertiary institutions due to the frequent use of Facebook, Twitter, YouTube among others Prabhakar *& Rani* (2017); (El-Berry, 2015; Amusa & Atinmo, 2016; Saikia and Gohain, 2013; Tripathi *et al.,* 2016). While Adeniran (2013) in another study found out that most of users of the library are aware of the electronic information resources such as e-books available in the University library but the usage rate is low. It is found in the literature that there is sometimes a gap between awareness and usage of e-books. This brings to the fore the controversy on the direct link between awareness and utilization and this makes it necessary to determine the awareness level and usage of e-books among pre-service science and technology education teachers in College of Education, Minna Niger State.

Statement of the Problem

The developments in the Information and Communication Technology systems and wide area networks, particularly, the emergence of the Internet has made online information retrieval more popular among undergraduate students in tertiary institutions in Nigeria. However as good as this technology is it is constrained with some factors such as poor access, availability, low level of awareness and usage among others which may affect teaching and learning among pre-service teachers. Some researchers have observed high level of awareness of e-books but have observed low

Usman Z., Chado A. M., Gimba, R. W., Abdulrahaman M. A, & Chado, M. I. D

usage particularly among undergraduates. Therefore, this study determined the awareness and usage of e- books among pre-service science and technology education teachers in College of Education, Minna.

Objectives of the Study
The main objective was to determine the awareness and usage of e-books among pre-service science and technology education teachers in College of Education. Niger State
The study also achieved the following objectives:
1. determined the awareness on e-book among pre-service science and technology education teachers in teaching and learning process.
2. determined the use of e- books among pre-service science and technology education teachers in teaching and learning process

Research Questions
The following research questions were answered in the study:
1. Are pre-service science and technology education teachers aware of e-books in teaching and learning process?
2. How do pre-service science and technology education teachers use e-books in teaching and learning process?

Methodology
The study adopted a descriptive survey research design. The population of the study comprised of 600 pre-service science and technology education teachers in Usman Danfodio university of Sokoto undergraduate affiliated program in College of Education Minna, Niger State. A simple random sampling technique was used to select 300 pre-service teachers using hat draw method. The instrument used for data collection was Awareness and Usage of e-book Questionnaire (AUeQ) developed by the researchers. The instrument AUeQ scored on was a 4 – point scale of Strongly Agree, Agree, Disagree and Strongly Disagree consisting of 17 items. A mean score within and above the decision mean of 2.50 was regarded as a positive response while anything below 2.50 was regarded as a negative response. The face and content validity of the instrument was determined by two experts in the department of Educational Technology, Federal University of Technology Minna. The reliability of the instrument was determined using Cronbach alpha and a reliability coefficient of 0.71 was established which shows that the instrument was reliable as ascertained by Sambo (2008). Data collected was analyzed using Mean and Standard Deviation to answer the research the questions

Results
Research Question 1: Are pre-service science and technology education teacher aware of e-book in teaching and learning process

Table 1: Awareness of e-books among pre-service science and technology education teachers in teaching and learning

S/N	Items	Mean	SD	Decision
1	I am aware that there is an application known as the e-books	3.57	0.73	Agreed
2	I am aware that e-books as an electronic version of printed books are available in a digital formant	3.45	0.76	Agreed
3	I am aware that I can download the e-books for independent learning	2.95	0.84	Agreed
4	I am aware that e-books can help me in my assignment and project work	2.00	0.67	Disagreed

Usman Z., Chado A. M., Gimba, R. W., Abdulrahaman M. A, & Chado, M. I. D

5	I am also aware that I can use computer to access the e-books.	3.65	0.69	Agreed
6	I am aware that android devices can be used to access the e-books	3.43	0.76	Agreed
7	I am equally aware that using e-books makes teaching and learning convenient.	3.27	0.92	Agreed
	Grand mean	**3.18**		

Table 1 shows that pre-service science and technology education teachers are aware of e-books but they are not fully aware that the e-book is an electronic version of printed book and most of them have not downloaded the e-books application for use. The grand mean of 3.18 shows that pre-service teachers are aware of e-books that can be used to enhance teaching and learning. Hence the result positively answered the research question 1 that pre-service science and technology education teachers are aware of e-books for teaching and learning. All items were agreed by the respondents except item 4 which state that, I'm aware that e-books can help me in my assignment and project work with mean 2.00 and SD 0.67

Research Question 2: How do pre-service science and technology education teachers use e-books in teaching and learning process?

Table 2: Use of e-books among pre-service science and technology education teachers in teaching and learning

S/N	Items	Mean	SD	Decision
1	I use e-books for my assignment	1.61	0.85	Disagreed
2	I use e-books to access information through Quick search from the internet.	2.20	0.74	Disagreed
3	I use e-books for independent learning self/individual learning	1.91	0.38	Disagreed
4	I use a personal computer, android phone, IPad which makes e-books easier to access	2.23	0.53	Disagreed
5	I use e-books frequently and I discover that it saves time compared to visiting the library	1.53	0.87	Disagreed
6	I use e-book because it does not require much space since it does not require the use of printed books	2.76	0.83	Agreed
7	I use e-books because it is easier to access through a laptop, personal computer or smart mobile compared to printed books.	2.36	0.96	Disagreed
8	I use e-books (Single copy) because it can be accessed by many at the same time.	2.33	0.54	Disagreed
9	I use e-books for my academic work such as project and research work	2.12	0.69	Disagreed
10	I am ready to use e-books if all my lecture materials could be transferred to e-books	2.93	0.88	Agreed
	Grand Mean	2.19		

Usman Z., Chado A. M., Gimba, R. W., Abdulrahaman M. A, & Chado, M. I. D

Table 2 shows a grand mean of 2.19 which indicates that pre-service teachers are not using e-books in teaching and learning process. Hence, the results have negatively answered the research question. All the items in the items in the questionnaire scored less than 2.50 mean and were all disagreed by the respondents that, e-books are used in teaching and learning process.

Discussion of Results

Research question 1 shows that pre-service science and technology education teachers are aware of e-books applications and that e-books as an electronic version of printed books are available in a digital format which can be used in teaching and learning. This, however, may be attributed to the fact that most of the pre-service teachers have access to e-books through their smart phone devices were they can access and download information for teaching and learning process and necessarily from the electronic resources in the library. Findings of this study is in agreement with Akpojotor 2016; Azubuike 2016 Colaklar and Aras 2015 and El-Berry 2015) that observed that social media tools are very effective means of creating user awareness of e-books among undergraduate students.

Research question 2 also revealed that pre-service science and technology education teachers are not using e-books applications in teaching and learning This ma y be attributed to the fact that most of the pre-service teachers don't have the basic knowledge on how to access e- books even though they are aware that it can be accessed online and with other methods This is however in agreement with the findings of Wilson,'Ambra, and Drunnond, (2014) and Adeniran (2013) that observed low usage of e-books among undergraduate students. The findings of this study also contradicts that of Prabhakar and Rani (2017); Amusa and Atinmo,(2016), Tripathi *et al.,(*2016) El-Berry (2015) and Saikia and Gohain,(2013) that reported high usage of e-books among students in tertiary institutions due to the frequent use of Facebook, Twitter, YouTube among others

Findings of this study have shown that, although pre-service teachers are aware of e-books as an electronic version of printed books which they can access and download from their smart phones via facebook, Twitter and YouTube. Most of them do not download for educational purpose rather they prefer to download games and videos. The implication of this is that despite the fact that pre-service teachers are aware of e-books they still prefer to use the hard copies of the books.

Conclusion

The study determined the awareness and usage of e-books among pre-service teachers in College of Education Minna Finding from the study showed that although pre-service teachers are aware that there are e-books most of them do not make use of these e-books rather prefer to use the hard copies due to some challenges.

Recommendations

Based on the findings of this study, the following recommendations were made;

1. Institutions of higher learning should equip their schools with modern technological tools and devices necessary such as the computers, internet and software applications like the e-book to support teaching and learning. This is important because it will encourage pre-service teacher to study independently.

2. Pre-service science and technology education teachers should be trained on the use of e-books applications and software as supplementary approach to educational resources.

3. Government should improve on funds provided to tertiary institutions for the purchase of electronic resources.

4. Head of tertiary institutions should as matter of urgency improve and update electronic resources (ICT facilities) so that pre-service can have free and easy access to e-books.

5. Tertiary institutions should provide internet connectivity for the use of pre-service teachers

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Usman Z., Chado A. M., Gimba, R. W., Abdulrahaman M. A, & Chado, M. I. D