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Perceived Impact of Contemporary Library technology on Academic Performance of Distance Education Undergraduates of Universities in Nigeria

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Abstract
The study looked at the impact of library technology on the academic performance of Nigerian university distance education undergraduates. A descriptive survey design was used in this investigation. The study was based on two research topics. The survey included 698 participants from Nigeria's recognized universities. Because the study's population size can be controlled, there was no need for sampling. The data collection instrument was a 39-item structured questionnaire produced by the researchers titled: Library technology on Academic Performance of Distance Education Questionnaire (TAPDEQ). Three specialists from the University of Nigeria, Nsukka's Faculty of Education verified the instrument. The instrument's internal consistency was determined using Cronbach Alpha for reliability analysis, yielding a coefficient of 0.84. To address the study questions, the data was analyzed using mean and standard deviation. The study's findings revealed that poor or slow internet connectivity, low ICT penetration, a lack of knowledge and skills in designing and delivering courses in electronic format, and a lack of training opportunities for undergraduates on each library technology tool used in teaching and learning are among the factors that hinder contemporary library technology's impact on academic performance of distance education undergraduates in universities. The study's findings also revealed the advantages of modern library technology on academic performance of distance education undergraduates in universities, such as the ability to monitor and support undergraduate activity, provide communication for facilitators and adult learners, protect data and allow for data recovery, improve communication with learning content, and promote active learning and authentic assessment, among other things. Based on the findings of the study, it was suggested, among other things, that a university environment be built in order to provide the benefits of distant education to all regions of the country, particularly to the most remote portions of the population.

Keywords: Contemporary library technology, Academic performance, Distance education, Undergraduates.

Introduction

Without a question, the world is living in an era of information library technology (IT). At least in industrialized countries such as Norway, Switzerland, Sweden, Germany, Ireland, Hong Kong, China, and Iceland, modern societies are referred to as information societies. It is having a rapid impact in developing countries such as India and Nigeria. Distance education technologies are advancing at a breakneck speed (Srinivas, 2007). For data processing and quality enhancement, modern technologies such as computers, communication, and social media are being used in a variety of industries. Similarly, the same technologies are used in both traditional and non-traditional educational settings (Srinivas, 2007). However, the concept of traditional classroom learning is gradually giving way to distance learning. Given the rising need for contemporary library technology among adult learners, all educational principles and theories are evolving, with a focus on Distance Education in Nigerian universities. As a result, instructional designers and curriculum creators have become obsessed with the latest educational technologies.

Modern library technology is a collection of useful ways or a growing virtual universal computer with integrated information library technology infrastructures, telecommunications networks, and computer processing systems that allow for online communication. According to Gordon (2018), contemporary library technology is any collection of productive procedures that, in a certain historical context, delivers a considerable improvement over established library technology for a given process. Contemporary library technology, according to Swalih (2020), is the advancement of existing library technology with fresh additions and alterations. Learners under this dispensation, for example, will be unable to live with a wired telephone on their table. As a result, the mobile phone, which can be carried around with you at all times, is the ideal example of modern technological advancement. Any gadget or item you see about the house is a result of modern library technology, which has made life in society more easier and simpler than anyone could have dreamed. Among them are e-fax, e-mail, mobile phones, video conferencing, instant text messaging applications, social networking, tablets, laptops, communication library technology labs, interactive whiteboards, robotics, 3-D printers, digital cameras, video cameras, 5G data network, and other gadgets. All of these current communication library technology tools have eased the ways in which humans communicate in a culture where distant education is not an exception.

Distance education is a method of learning that takes place outside of the classroom and does not require face-to-face contact with the teacher or instructor. According to Kaplan and Haenlein (2016), distance education is instruction offered to students who are not always physically present at a school. Correspondence courses, in which the student communicated with the institution via mail, were once popular. Any educational procedure in which all or most of the teaching is done by someone who is physically distant from the student and all or most of the contact between teachers and students is done through electronic or print media is known as distance education (United Nations Educational, Scientific and Cultural Organization, 2002). According to Imo, Nweke, Okop, Okafor, Koledoye, and Isiaku (2020), distance education is described as education for learners who are not always present in the learning environment. Distance learning can thus be used to assess the academic accomplishment of distance education undergraduates through interactive radio instruction (IRI), interactive audio instruction (IAI), online virtual worlds, digital games, webinars, and webcasts, all of which are referred to as remote learning (Burns, 2012).

Academic success can be described as a student's achievement of short- and long-term educational objectives. It is a combination of a cumulative grade point average and the completion of educational degrees, particularly bachelor's degrees, that represents a student's academic performance. Academic performance is a multi-dimensional concept that encompasses a student's abilities, attitudes, and actions that enable them to succeed in the classroom (Hijazi & Naqvi, 2006). It is a satisfying and extraordinary level of achievement as children progress through and complete their educational career (Jeynes, 2002). According to research, the vast majority of students who drop out do so due to low academic performance

(Hijazi & Naqvi, 2006). In this study, academic performance is defined as an undergraduate's ability to complete an agreed-upon class assignment in a school setting.

Importantly, modern library technology is no longer merely a means of facilitating complicated operations and contributing to the betterment of living conditions; it has evolved into a moral and political issue affecting both individual and collective life dimensions in society. A comprehensive characteristic and benefit of a distance education program for undergraduates, according to Viktor and Lyubov (2016), is adequacy of the content in teaching. Having tutors-teachers present, coordinating students' actions, monitoring and encouraging students' behavior, conserving data, and providing a data recovery option are all factors that influence the effectiveness of information presentation. Long service life, upgradeability, low cost and pricing, and proper technical and system-wide resource setup are all markers of cost-effectiveness (Viktor & Lyubov, 2016).

Importantly, the impact of modern library technology on the academic achievement of distance education undergraduates is more complicated than at first glance. Comparing two situations, one marked by the absence of library technology in proposing an educational message and the other marked by its very presence, according to Baumgartner, Häfele, and Maier-Häfele (2002), could lead to treating library technology as if it were indistinguishable from other aspects of daily life. Significantly, one can query if and how a gradually increasing exposure to technological inducement affects distance education undergraduates' attitudes and cognitive styles, and which impacts could be linked to library technology-centered experiences. The motor skills, on the other hand, discovered that using modern library technology might effect changes in basic psychomotor and cognitive skills; this includes using computers, electronic organizers, navigation systems, and other tools. However, this may raise worries about undergraduates' development in the classroom. In addition, Phan's (2008) research looks at the advantages and disadvantages of library technology, as well as why it may or may not be beneficial.

Domestic distractions, unreliable library technology, students' program costs, lack of adequate contact with facilitators and support services, and lack of experience from unqualified users of library technology facilities are some of the factors that hinder effective implementation of contemporary library technology on academic performance of distance education undergraduates in universities, according to Stlund (2012). Other factors identified by Stephens (2007) include a lack of students' proper training with the library technology tools required for success in a distance education program; a lack of training opportunities for students on each library technology tool used in teaching and learning; a lack of advanced library technology skills, which can lead to a negative experience; a lack of proactive policies for overcoming technological barriers; a lack of time management skills; and a lack of self-discipline. Other issues raised by Raja and Nagasubramani include a lack of time, a lack of internet access, a lack of resources, a lack of professional competency, and a lack of support (2018). Reliability is mentioned as a barrier by Butler and Sellbom (2002) and Chizmar and Williams (2001). Reliability concerns include

hardware issues, incompatible software between home and school, slow or no internet access, and out-of-date software that is largely available at school while students/educators have more up-to-date software at home. According to Cavanaugh (2000), distance education undergraduates' academic performance in universities is hampered by modern library technology because it relies on learner initiative to work in a less supervised environment than a classroom, the need for technical skills to work with the delivery library technology, and the risk of social isolation.

Similarly, Morayo (2013) asserted that, despite the advantages of modern library technology in distant education in Nigerian universities, obstacles that may obstruct good functioning are better acknowledged and addressed. The following are the issues: Poor funding: It is well known that education in Nigeria is underfunded. One of the biggest consequences of inadequate funding is the lack of or low level of availability of distant education services in the country. Any educational policy's effectiveness, according to Yusuf (2006), is contingent on the engagement of all stakeholders as well as financial agency sponsorship. Second, there is a lack of power supply: Nigeria's political instability is a perennial problem that has hampered our modern library technology development? The majority of distance education students who live in cities encounter the issue of intermittent power supply. Third, some facilitators' lack of expertise and skills in planning and delivering courses in electronic format has a substantial impact on remote education instructional delivery. Finally, there is poverty and a lack of information library technology penetration: data show that many Nigerians are poor. As a result, the cost of computers and other information library technology resources is much above their financial means. As a result, the country's basic information library technology infrastructure, like that of most African countries, is woefully inadequate. The adult facilitators still have a limited understanding of computers. The sixth aspect is internet connectivity, which according to studies, Nigeria has a low level of. The cost of utilizing the internet in West Africa is still rather high. Sixth, poor teledensity: Another significant impediment to distance learning delivery is teledensity. Unrestricted access to information library technology tools like the telephone and the internet has been highly limited (Asogwa, 2007). Despite the arrival of GSM telephony, the use of information library technology for remote education remains minimal. Technophobia: Because the majority of distance education students have no prior computer experience, they are apprehensive about using one. Some of them even hire professionals to fill out their admissions, registration, and other online forms. The few people who do have access to computers, however, do not know how to fully utilize them. The seventh factor is school curriculum: The majority of the pupils accepted have no knowledge of information library technology because it was not included in their elementary and high school curricula. Computer education was just recently introduced at the primary level, and it is still not a required subject in our senior schools.

Adult educators, interestingly, are looking for modern library technology solutions to improve the teaching and learning of distance education undergraduates at institutions. Nonetheless, library

technology has been considered as a valuable resource in classrooms that has improved learning, but it has had severe consequences for remote education in institutions. Distance education is quickly becoming time and space free thanks to modern technologies (Kaite, Normal, Mallon, Mohamed & Al-Bataineh, 2021). The school-to-work movement's main purpose is to create awareness and support so that distance education students can learn the skills, habits, beliefs, and understandings they need to be effective in all aspects of their lives (Hakim, Bakheit, Bryant, Roberts, McIntosh-Michaelis & Spackmans, 2000). Importantly, library technology plays a significant role in the lives of distance education students; as a result, using current library technology into distance education has proven to be beneficial while also having certain drawbacks. On the other side, library technology has enhanced student willingness and participation, as well as learning enhancements. According to Fisher, Exley, and Ciobanu (2014), the best types of learning may include decisions that distance education undergraduates can make while studying in relevant scenarios and where students are active.

According to Benedetto (2018), undergraduates build adequate levels of competency, become more involved with their own learning, and achieve higher learning outcomes across the curriculum by using information library technology. Information library technology is utilized to support educational methods that promote learner-centered, knowledge-centered, assessment-centered, and work-oriented learning environments. Nevena, (2018), in a similar study on the impact of library technology in e-learning, outlines some of the uses of library technology on distance education undergraduates' education, including: improving the effectiveness of learning, encouraging easier interaction with the facilitator, and improving communication with the learning content.

The purpose of this study was to look into the impact of current library technology on the academic performance of distance education undergraduates in Nigerian universities, as well as the drawbacks and benefits of employing modern library technology in distance education, especially in terms of academic performance. In this study, "modern library technology" refers to the internet and computer-mediated facilities. Understanding how library technology affects the learning of remote education undergraduates is especially important because it has the capacity to both hinder and empower adult learners. The purpose of this study was to give adult education lecturers advice on good classroom methods. Undergraduates enrolling in distant education programs may benefit from training aimed at achieving their goals. Parents of distance education undergraduates, for example, could be interested in learning how current library technology affects their children's academic performance.

Statement of the Problem

The goal of implementing distant education in Nigerian colleges is to improve the teaching-learning process' efficiency and effectiveness. Thus, in a developing country like Nigeria, distance education faces challenges such as computer availability, well-equipped computer laboratories with internet access, videophone systems and teleconferencing devices, fax and wireless applications, digital

library, digital classrooms, multimedia systems, and the problem of developing multimedia courseware, to name a few. Other research have indicated that distant education has a scarcity of trained facilitators or instructors, as well as a shortage of facilities, infrastructure, and equipment. In Western countries, distance education has already had an impact on teaching, training, and development. A growing percentage of university courses are now delivered via the internet, which is attracting more students. Many educational stakeholders believe that distance learning or education is the way of the future for their training programs. Nonetheless, there isn't enough evidence to indicate that remote education is a good delivery method for the people who are being taught. Researchers in the field of education systems, on the other hand, are concerned with transferring their work from scattered intelligence to a rational space of united intelligence. There have been few studies that have looked into distant education undergraduates' awareness of the impact of modern technologies on academic achievement. In this study, distance education undergraduates in Nigeria's selected universities (University of Ibadan, Ibadan; University of Nigeria, Nsukka; University of Abuja, Abuja; Modibbo Adama University of Library technology, Yola; and University of Maiduguri, Maiduguri) will be asked about their perceptions of the impact of online interaction on their academic performance.

Purpose of the Study

The general purpose of the study was to examine the effect of contemporary library technology on academic performance of distance education undergraduates of universities in Nigeria. Specifically, the study sought to:

1. examine the factors that hinder contemporary library technology on academic performance of distance education undergraduates in universities.
2. determine the benefits of contemporary library technology on academic performance of distance education undergraduates in universities?

Research Questions

The following research questions guided the study:

1. What are the factors that hinder contemporary library technology on academic performance of distance education undergraduates in universities?
2. What are benefits of contemporary library technology on academic performance of distance education undergraduates in universities?

Materials and Methods

A descriptive survey design was used in this investigation. Similarly, Eze et al. (2020), Ezema et al. (2021), Ezeaku et al. (2021), Okeke et al. (2020a, b), Ugwuanyi et al. (2020), Okenyi et al. (2021) have adopted the design. The survey has a population of 698 participants from Nigerian universities (University of Ibadan, Ibadan; University of Nigeria Nsukka; University of Abuja, Abuja; Modibbo Adama University

of Library technology, Yola; and University of Maiduguri, Maiduguri). Because the study's population size can be controlled, there was no need for sampling. The researchers developed a structured questionnaire named Library technology on Academic Performance of Distance Education Questionnaire to collect data (TAPDEQ) which was properly validated by three experts and thereafter trial tested. The instrument's internal consistency was determined using Cronbach Alpha for reliability analysis, yielding a coefficient of 0.84. To address the study questions, the data were analyzed using mean and standard deviation. Strongly Agree (SA), Agree (A), Disagree (D), and Strongly Disagree (SD) were the scales used in the survey. Data collected using the survey instrument were analysed using mean and standard deviation. A criterion mean of 2.50 served as the benchmark mean for decision on the items.

Results

Research Question One: What are the factors that hinder contemporary library technology on academic performance of distance education undergraduates in universities?

Table 1: Mean Rating and Standard Deviation of Response on factors that hinder contemporary library technology on academic performance of distance education undergraduates in universities

S/N	Item Statement	M	SD	Decision
1	Domestic distractions	2.99	0.27	A
2	Unreliable library technology	2.87	0.27	A
3	Lack adequate contact with the facilitators	2.77	0.27	A
4	Lack of adequate support services	2.65	0.28	A
5	Lack of experience from unqualified users of the library technology facilities.	2.55	0.28	A
6	Lack of training opportunities for the undergraduates on each library technology tool used in teaching and learning	2.60	0.28	A
7	Lack of adoption of proactive policy for managing library technology barriers	3.09	0.26	A
8	Lack of time management skills	3.11	0.26	A
9	Lack of self-discipline by the facilitators in distance education programme	2.73	0.28	A
10	Lack of internet access	2.86	0.27	A
11	Lack of professional experts	2.99	0.27	A
12	Poor or slow internet connectivity	2.60	0.28	A
13	Out of date software	3.10	0.26	A
14	Lack of funding	3.11	0.26	A
15	Lack of or low level of provision of the facilities for distance education	2.81	0.27	A
16	Lack of power supply	3.10	0.26	A
17	Lack of experience and expertise in creating and delivering electronic courses	2.93	0.27	A
18	Poverty and poor ICT penetration	2.56	0.28	A
	Cluster Mean	2.86	0.27	A

Data in table 1 shows the mean scores and standard deviation on the factors that hinder contemporary library technology on academic performance of distance education undergraduates in

universities. Table one indicates that items 1 – 18 had mean scores above the criterion mean of 2.50. It was agreed by the respondent with cluster mean score of 2.86 and standard deviation of 0.27. Therefore, the factors that hinder contemporary library technology on academic performance of distance education undergraduates in universities are Poor or slow internet connectivity, poverty and poor ICT penetration, lack of experience and expertise in creating and delivering electronic courses, lack of training opportunities for the undergraduates on each library technology tool used in teaching and learning, among others.

Research Question Two: What are benefits of contemporary library technology on academic performance of distance education undergraduates in universities?

Table 2: Mean Rating and Standard Deviation of Response on benefits of Contemporary Library technology on Academic Performance of Distance Education Undergraduates in Universities

S/N	Item Statement	M	SD	Decision
19	It provides adequate content in teaching	3.11	0.26	A
20	It provides availability of educational resources	3.10	0.26	A
21	It provides monitoring and supporting students' activity	2.99	0.27	A
22	It provides support for different types of activities	3.09	0.26	A
23	It provides latest trends in science and library technology	2.77	0.27	A
24	It provides support of different forms of knowledge	2.67	0.28	A
25	It provides availability of educational resources	2.88	0.27	A
26	It helps to monitor and support undergraduates' activity	2.55	0.28	A
27	It provides communication for facilitators and adult learners	2.71	0.28	A
28	It helps to protect data and provide an opportunity for data recovery	2.80	0.27	A
29	It provides reasonable configuration of necessary technical and system-wide resources	3.00	0.26	A
30	It provides learning environments that are more learner-centred	3.11	0.26	A
31	It promotes active learning and authentic assessment	3.00	0.26	A
32	It engages students by motivation	2.83	0.27	A
33	It provides tools to improve student performance	2.99	0.27	A
34	It supports high-level thinking	2.77	0.27	A
35	It increases learner autonomy	2.66	0.28	A
36	It increases collaboration and cooperation	2.78	0.27	A
37	It provides learner-centred approach and overcome physical disabilities	2.86	0.27	A
38	It encourages easier interaction with the facilitator	2.75	0.27	A
39	It enhances the communication with the learning content	2.88	0.27	A
	Cluster Mean	2.87	0.27	A

Date in table 2 revealed that all the items from 19 – 39 were agreed to be the benefits of contemporary library technology on academic performance of distance education undergraduates in universities. The

respondents accepted that the items on the above table are the benefits of contemporary library technology. The followings are benefits of contemporary library technology on academic performance: to monitor and support undergraduates' activity, to provides communication for facilitators and adult learners, to provides reasonable configuration of necessary technical and system-wide resources, to protect data and provide an opportunity for data recovery, to enhance the communication with the learning content, to provide learner-centred approach and overcome physical disabilities, to promote active learning and authentic assessment etc.

Discussion

The study's findings identified the factors that impede progress of contemporary library technology on academic performance of distance education undergraduates in universities which include poor or slow internet connectivity, poverty and poor ICT penetration, lack of knowledge and skills in designing and delivering courses in electronic format, lack of training opportunities for the undergraduates on each library technology tool used in teaching and learning, among others. The findings of the study is in consonant with the findings of Östlund (2012) who found that the factors that hinders effective implementation of contemporary library technology on academic performance of distance education undergraduates in universities include domestic distractions, unreliable library technology, students' programme costs, lack adequate contact with the facilitators and support services, and lack of experience from unqualified users of the library technology facilities. Also, Stephens (2007) posited that the factors that hinder effective implementation of contemporary library technology on academic performance of distance education undergraduates which include: lack of students proper training with the library technology tools needed to be successful in distance education programme; lack of training opportunities for the students on each library technology tool used in teaching and learning; lack of advanced library technology skills can lead to an unsuccessful experience; lack of adoption of proactive policy for managing library technology barriers; lack of time management skills; and lack of self-discipline by the facilitators in distance education programme.

The findings of the study revealed the benefits of contemporary library technology on academic performance of distance education undergraduates in universities which include to monitor and support undergraduates' activity, to provides communication for facilitators and adult learners, to provides reasonable configuration of necessary technical and system-wide resources, to protect data and provide an opportunity for data recovery, to enhance the communication with the learning content, to provide learner-centred approach and overcome physical disabilities, to promote active learning and authentic assessment etc. Viktor and Lyubov (2016) outlined a comprehensive characteristic and benefits of distance education programme for undergraduates which include the adequacy of the content in teaching. According to Benedetto (2018), undergraduates build adequate levels of competency, become more

involved with their own learning, and achieve higher learning outcomes across the curriculum when they use information library technology. Nevena, (2018) outlined some of the uses of library technology on distance education undergraduates which include to enhance the effectiveness of learning, to encourage easier interaction with the facilitator; and to enhance the communication with the learning content.

Conclusion

In Nigerian society as a whole, distance education is becoming increasingly popular. It provides new opportunities for the working population in both rural and urban areas. This improves the quality of life in these areas. First and foremost, all facilitators of distant education should be taught about modern library technology and encouraged to use it. In the minds of adult instructors and learners in distant education programs, traditional thinking will be minimized and modern thinking will be promoted. Importantly, the utilization of distant education ensures that educational opportunities and services are available to everybody. It also improves the quality and variety of materials and help available to adult learners, while also opening up new chances for professional development. Despite the numerous benefits of modern library technology on distance education undergraduates' academic performance, these can only be realized when the educational system is free of the challenges of lack of power, inconsistency in program and policy implementation, poor economy, lack of trained adult facilitators or instructors, poor postal system, and bad public image.

Recommendations

The following recommendations were made based on the study's findings:

1. Educational planners should create awareness on the adaptability of the contemporary library technology in teaching distance education undergraduate students.

2. Enough funds should be committed to online education in order to obtain sophisticated technologies.

3. Adult educators should abandon their old ways of thinking and adopt new ways of thinking when it comes to employing media and library technology.

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