Effectiveness of Internet Accessibility on Academic Activities of Open and Distant Learners in the National Open University of Nigeria

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Abstract. This study investigated the effectiveness of internet accessibility on academic activities of open and distant learners of the National Open University of Nigeria, Lagos State. Technological Determinism Theory and Media Dependency Theory provided the framework for the study. A survey method was adopted, and a questionnaire comprising closed-ended and open-ended questions was used to collect data. It used a simple random sampling method in choosing the sample. One hundred twenty copies of the questionnaire were administered to the respondents during the study. Findings from the data analysed show that most students have access to the internet mainly on their mobile phones with self-sponsored mobile data. They face difficulties accessing the internet, which interferes with their academic activities. The study recommended that the National Open University of Nigeria should improve its network service to give the students seamless access to the school's online platforms and provide some offline options for the learners as alternatives to guard against any unexpected failure of the online options. The offline options will also carry along the older and less tech-savvy learners until they adapt to the online school system. The work concluded that poor internet accessibility significantly affects academic activities in open and distance learning. Consequently, access to the internet should be improved.

Keywords: Internet accessibility; open and distance Learning; National Open University of Nigeria; distant learners.

INTRODUCTION

Conventional universities have yet to meet the educational needs of people due to the high number of people that apply for admissions every year. As a result, most applicants to these conventional universities do not eventually get admitted to pursue their academic endeavours. This situation has created a sizeable educational gap in the system as more people interested in acquiring knowledge and skills offered in educational institutions are denied the opportunity. This implies that the demand for educational opportunities to study far outweighs the chances to do so as provided by conventional universities and other customary institutions of Higher Learning.

In addition to the above, the difficulties involved in meeting admission requirements, and the strict rules and methods of operation of these conventional universities, among other factors, have made it difficult, if not impossible, for them to accommodate the different categories of learners who want to acquire knowledge. This gave rise to alternative means of meeting these other categories of learners that conventional universities could not cater for. These factors make Open and Distance Learning (ODL) an excellent alternative to fill this educational gap because ODL meets those needs that conventional universities cannot meet for many learners who could not secure admission or who have particular issues that they cannot run their academic programs in traditional universities.

Author [1] notes that Open and Distance Learning is a fast-developing aspect of learning that have been more influential by the emergence of internet-based devices, especially the web. Similarly, [2] refers to Open and Distance Learning as the type where teachers and learners are kept

apart by time and distance while different media are used to deliver lessons in interactive ways. However, students and teachers may meet rarely. The avenues for obtaining and sharing information and knowledge offered by the internet are numerous and more than one can think of. The internet brings a lot of personalised experiences and flexibility than has been experienced before. The internet, which is the hub of almost all online technologies, is very important in ODL because all the online media used for academic activities in the ODL setting create, organise and share content; interact with others and do other educational activities online. Depend primarily on having access to the internet.

According to [3], the internet has facilitated academic activities in higher institutions in Nigeria for many years. In the ODL, the instructors are separated from their students by distance, space and time, and to fill the vacuum, technological devices are used to share information and interact. Most of these technological devices depend on the internet. The need for communication, sharing of messages, and exchange arises among teachers and students and the students themselves in their academic pursuits. In agreement with the above, [4] submit that the internet is essential in many ways, including teaching, research and learning in educational institutions. The internet heralded a new means of creating and sharing knowledge in a mild form.

Statement of the Problem

Most of the academic work students do during their academic pursuit in ODL is online-based, with internet-enabled technologies dominating the whole process. This entails that any challenge in internet accessibility, especially when it is not the fault of the leaner(s), may have an effect on the student's academic activities since the Distant Learners will depend on the internet throughout their academic programme in ODL.

Given the above, there is a need to establish the effect of internet access on the academic activities of ODL students at NOUN, which is in Nigeria – a developing country in sub-Saharan Africa still struggling with some infrastructural facilities and other technologies. Being that NOUN is the only fully ODL institution in the country, it will be good to establish the effect of internet accessibility in academic activities in the institution to know where things are good and where to make amendments to improve the learning experience in the school. This study comes in handy as an academic contribution to knowledge, an empirical approach to the issues of internet accessibility in ODL, and to provide literature that can be useful for other studies.

The essence of this study is to ascertain the effect of internet access on the academic activities of ODL students at NOUN. But the specific objectives of this research are:

1. To identify the various means through which the students can access the internet.

2. To identify the academic activities, they carry out on the internet.

3. To ascertain the challenges they experience in accessing the internet in educational activities.

4. To determine how internet accessibility affects their academic activities.

5. To assess the difference in male and female views of internet accessibility.

Research Questions

1. What are the means through which the students have access to the internet?

2. What academic activities do the students do on the internet?

3. What challenges do the students face online in their educational activities?

4. In what ways does internet accessibility affect the students' academic activities?

5. What is the difference between the male and female views of the internet accessibility?

Theoretical Framework

This aspect of the work focuses on the appropriate theories that help to explain the issue at stake in this work. Two main approaches are used in this study.

Technological Determinism Theory. The critical assumption of the Technological Determinism Theory (TDT) is that a society's technology determines how its social structure and cultural values develop. The theory is believed to have been coined by Thorstein Veblen. Author [5] notes that Marshall McLuhan, in his work on technological determinism, states that people in society live in a new age of technology that has

not been witnessed before. These new media transform how people think, act and feel, adding that this technological environment is a critical landmark in communication. Agreeing with this, [6] adds that technological determinists explain that technology, particularly communications technologies, is the foundation of society's past, present and future, pointing out that technology in the forms of writing, print, television or the computer transforms society.

The TDT comes in handy in this study because it is the technology of society that determines how people interact with one another and carry out some of their daily activities. In the ODL, technology plays a key role as learners and instructors use the internet to facilitate their academic activities. The internet is seen as a primary factor that determines how lessons and educational resources are packaged by the instructors and delivered to the learners. It enables them to interact to enhance learning.

Media Dependency Theory. The Media Dependency Theory (MDT), developed by Sandra Ball-Roacheach and Mervin De Fleur in 1976, focuses on the relationship existing between the media audience and the media, which results in the audience relying on the media. It states that an individual depends on media information to meet specific needs, and such a person will rely on the medium that meets more of his/her needs than the ones that meet few. Also, [7] notes that the MDT explains the media's power and direct and indirect role in people's actions.

This theory is very appropriate in this work because it explains what happens at ODL. Although other media exist, none can meet the needs of distant learners and their educators like the internet. In line with the above, educators and students use internet platforms in teaching and learning. Due to technology, academic activities have gone beyond just face-to-face classroom affairs to online internet platforms. Teachers teach online, and students discuss on internet-based platforms and collaborate and share resources, which is even more applicable to ODL institutions. The internet serves multiple purposes for learners and instructors as they do most of their academic activities on it, even as it bridges the gap between them, offering them a platform they can use to meet their needs, irrespective of their locations. Given these benefits the internet offers, distant learners and educators rely so much on it to carry out their academic activities.

Literature review

Open and Distance Learning (ODL). The history of Open and Distance Learning may only be complete by emphasising that it first started as Distance Education.

Distance Education refers to education that focuses on teaching methods and technology aimed at delivering lessons to learners that are not physically present in a conventional school setting, thereby giving access to learning when time or distance or both separate the source of information and the students [8]. Meanwhile, [9] describes Open learning as a form of learning that is flexible as it allows students to decide the learning options they prefer concerning time, place, and other learning methods. It means that Open Learning is learner-centred as it prioritises giving learners choices of the media of learning, area and pace of study, support channels, and the selection of entry and exit points.

However, ODL combines the two concepts. According to [10], Open and Distance Learning (ODL) is regarded as the best means for increasing education access, improving learning quality, encouraging peer-to-peer collaboration and providing students with greater freedom and responsibility.

The first Open University, The Open University, was established in 1969 and was a public distance learning focusing on research. It was among the largest university in the UK. The success of the Uk's Open University led to the founding of more Open Universities around the globe. Author [11] listed some other ones that were established afterwards, including Athabasca University, Canada's Open University was created in 1970, and Spain's National University of Distance Education in 1972, while Germany's Fern Universitat in Hagen came on board in 1974. On the home front, the idea of an open University was initiated in 1976, and other processes followed. Later in 2002, the National Open University of Nigeria (NOUN) was established during the tenure of a civilian President, Chief Olusegun Obasanjo, who demonstrated the relevance of the university by enrolling as a university student immediately after he left office as the President.

The Concept of Internet Accessibility. Internet access refers to connecting to the internet using a functional gadget, an influential network, having the skills and boldness to use them and a good knowledge of what to get on the platform [12]. This means that having internet accessibility will

allow an individual to do whatever he/she plans to do online as seamlessly as possible. In the ODL setting, distant learners must have efficient internet accessibility for almost all their academic activities. This implies that any hitch which affects their ability to connect to the internet could pose a problem to their work.

Internet Accessibility and Open and Distance Learning. Regarding the teacher's role in the ODL, [13] notes that the teacher's duty changes from a transmitter of information to a guide who meaningfully organises learner-centred experiences. The teaching and learning process in the ODL is highly interactive, so students are expected to have some skills that will help them to use some of the technological gadgets that can enable them to connect to the internet and take an active part in academic activities online. In line with the above, [14] observes that active participation is crucial in learning.

He further states that students learn better when they actively participate in interactive learning activities, adding that inactive participation would not help them learn well. Students learn from the materials made available by educators in various forms. They can be in printed words, audio format, or video form (audio-visual). The students can access all these materials available in multiple states online.

Meanwhile, [15] notes that technology plays a crucial role in online education and continues to do so in ODL among students due to its flexibility. Following the same line of thought, ODL educators found that the use of technology can enhance interaction and collaboration among learners and aid in handling many learners from different parts of the world, which makes its adoption a cheap teaching method [16]. Author [17] notes that learners admit the advantages of using technology in learning as they learn at their pace, study independently and enjoy the experience while accessing resources online using their gadgets. The importance of collaborative learning among the students of the ODL, separated by distance, is made possible by the internet. Also, [18] observes that interaction increases learners' motivation and boosts learning.

Internet Accessibility and Academic Activity. While the internet has been helpful in academic activities, especially in ODL, some challenges arise. Authors [19] note that the technical competence needed to have adequate access to modern technologies is a problem for some distance learners. [20] observes that access to technology is also a challenge, particularly in many parts of Africa, especially in the rural areas where infrastructure is inferior.

Pointing out some factors that can lead to the problem of access to the internet, [21] their study finds that the digital divide in Africa is a significant problem when compared with other countries, and this causes challenges to the use of technology for online teaching and learning. They note that anything that hinders distance learners from achieving their learning needs is the 'digital divide', affecting learners from low-income homes more.

However, [22] point out that effective learner support services that give room for a face-to-face, timely response on learners' academic performance and access to library services are necessary to improve their academic achievement. [23] note that countries need to fortify their educational institutions to flourish because students require suitable means of getting and sharing information quickly, adding that the use of this internet largely relies on factors such as purpose, students' experience, locations and internet facilities. In a perception study on NOUN, [24] discover that on the accessibility options, participants have different feelings concerning access to the internet due to the cost of entry, erratic services and internet issues in rural communities.

Gender and Internet Accessibility. In line with the mixed feelings expressed by participants as stated above, there is the need to consider if the gender of individuals plays any role in how they view internet accessibility. Do males see internet accessibility differently from the way their female counterparts see it? This is a question for consideration because people of different genders could view an issue differently or similarly.

Gender differences in internet usage and web information-seeking behaviours have attracted considerable research interest. Authors [25] find that social, economic and individual factors may be significant in understanding internet access. Also, [26] discover a substantial difference between the two genders as female readers strongly prefer paper as a reading medium to males, adding that male readers have a greater sense of satisfaction with online reading. Conversely, [27] has a different position pointing out that gender-specific difference exists, which cannot be explained just by studying the disparities in education or income and their effect on internet usage. Similar or more divergent views could still be found.

METHODOLOGY

This study employed a survey design. This method allowed the researcher to get and analyse the responses from many respondents, which provided valuable data for the analysis. The population of this study was the undergraduate students of NOUN Lagos State. To extract data from the students, a questionnaire was used. Bearing in mind that NOUN is a distant learning institution where it would be hard to see students physically present, making it difficult to reach many of them and extract data, a sample size of 120 was adopted as a template for this study. First, the researcher used a multi-stage sampling to cluster NOUN into four Study Centres, including the Victoria Island, McCarthy, Apapa and Mushin Study Centres. Secondly, the simple random sampling method was used to empirically select four faculties from Victoria Island, McCarthy and Mushin Study centres for the study. The faculties (with two Departments from each) that were set include the Faculty of Arts (Department of English and Department of Philosophy), Faculty of Law (Department of Commercial Law and Department of Private and Property Law), Faculty of Management Science (Department of Business Administration and Department of Financial Studies), and Faculty of Sciences (Department of Computer Science and Department of Environmental Sciences). Copies of the questionnaire were randomly administered to the respondents from the set faculties, with 40 participants drawn from McCarthy Study Centre because it is the second largest centre and 30 from Mushin Study Centre. After all, it is the smallest of the three, while 50 participants were from Victoria Island Study Centre because it is the largest centre.

The study adopted the test-retest method. The instrument was initially administered to 30 students of NOUN during two pilot studies at different intervals to get their responses to the questions and measure the result. Pearson's r correlation coefficient of the two effects was consistent, confirming the instrument's reliability.

RESULTS AND DISCUSSION

Having distributed the questionnaire to the respondents considering all genders, age groups, levels and faculties, the study ensured that criticisms that might arise from the distribution of the instrument were avoided. Out of 120 copies of the distributed questionnaire, 115 documents were retrieved for analysis. Therefore, 115 copies of the questionnaire were analysed, giving a response rate of 96%.

Table 1 – Summary of Respondents' Demography

Features		Frequency	%
Age	15-18	-	-
	19-22	-	-
	23-26	19	16.5
	27 and above	96	83.5
	Total	115	100.0
Gender	Male	76	66.1
	Female	39	33.9
	Total	115	100.0
Level	100	10	8.7
	200	12	10.4
	300	18	15.7
	400	30	26.1
	500	45	39.1
	Total	115	100.0
Faculty	Law	57	49.6
	Arts	13	11.3
	Management Science	28	24.3
	Science	17	14.8
	Total	115	100.0

Data collected in tandem with the first research objective showed that most respondents have access to the internet using their mobile phones, which means that they use more personal and portable devices to access the internet from their locations (Table 2).

Table 2 – Summary of Devices Respondents Used to Access the Internet

Response	Frequency	%
Desktop Computer	10	8.7
Laptop	22	19.1
Mobile Phone	83	72.2
Others	-	-
Total	115	100.0

In line with the second objective, the study found that doing Tutor Marked Assignments (TMAs), getting academic information and doing research are most students' primary educational activities on the internet.

This shows that they take their assignments on the internet more seriously and do other vital academic work that can impact their performance (Table 3).

Table 3 – Summary of activities respondents use the internet platform for

Response	Frequency	%
Reading academic materials	17	14.8
Sharing documents	7	6.1
Getting academic information	23	20.0
Receiving lectures online from lecturers	12	10.4
Having academic discussions with tutors and colleagues	2	1.7
Doing research	18	15.7
Doing Tutor Marked Assignment	36	31.3
Total	115	100.0

Data collected based on the third objective have shown that most students face connection problems due to issues from the network providers. At the same time, the second main challenge they experience is connection problems arising from the school's portal. These are not problems arising due to the learners' fault; they can affect the student's academic activities if they are not addressed (Table 4).

Table 4 – Summary of challenges respondents experience during academic activities

Response	Frequency	%
Problem of getting connected to the internet due to network provider's issue	68	59.1
Inability to connect to the school's website due to portal problem	27	23.5
Problem of internet access due to inability to pay for subscription	11	9.6
Disruption in internet connection due to poor internet coverage in your location	9	7.8
Total	115	100.0

A critical analysis of the data collected based on the fourth objective showed that the problems of internet accessibility hinder many of the respondents from doing their TMAs which are usually time-bound. These challenges also prevent them from reading/downloading academic materials online and make them miss vital educational information. These issues affect the student's learning experience and their performance (Table 5).

Table 5 – Ways the challenges of internet accessibility affect respondent's academic activities

Response	Frequency	%
It prevents me from getting academic information	21	18.1
It prevents me from doing my Tutor Marked Assignments	45	39.1
It hinders me from taking active part in online lectures and academic discussions	10	8.7
It prevents me from reading academic materials online and downloading them as well	39	34.0
Total	115	100.0

The data collected in line with the fifth objective of the study showed that a higher percentage of males revealed that internet accessibility problems disturb their academic work regularly than their female counterparts. Also, more male respondents admitted they have the issues occasionally (Table 6).

Table 6 – Respondents' view on internet accessibility

Response	Frequency		%		Total
	Male	Female	Male	Female	
It gives me regular problem in my academic work	50	27	43.5	23.5	67
It does not give me problem at all because I enjoy it regularly	1	1	0.9	0.9	1.8
It gives me problem occasionally in my academic work	23	10	20	8.7	28.7
Undecided	2	1	1.7	0.9	2.6
Total	76	39	66	34	100
	115		100		

CONCLUSIONS

After critically analysing the data collected in the course of this study, the researcher made the following findings:

1. While seeking to find out how distant learners can access the internet, the study showed that most accessed it mainly through mobile phones. This indicates a higher phone usage rate by the

students who also use self-sponsored data subscriptions to access the internet.

2. In trying to find out the academic activities the students carry out on the internet, the work found that most of them use it to do Tutor Marked Assignments (TMAs). Findings further showed that they also use it to get academic information, research, engage in tutorials, and share and read educational materials. This showed that the internet serves different purposes for distant learners, hence why any disruption in its accessibility is a significant issue for the learners. This agrees with the submission of [15].

3. Having sought to ascertain the challenges students face while accessing the internet, the finding revealed that most of them face difficulties accessing it. Most of the issues come from network providers and school portal problems. Others need better network coverage and help to pay high data subscription charges. This finding aligns with the position of [20] but provides more insight into the issues.

4. In an attempt to determine how internet accessibility affects the academic activities of the students, the study revealed that the difficulties the learner's experience in accessing the internet affect the extent they take an active part in educational activities, as a number of them miss or fail to do TMAs/tests on time, many of them are unable to read, download and share academic materials. In contrast, others are unable to join online lessons and group discussions. All these challenges adversely affect their educational activities.

5. In a bid to assess the difference in male and female views of the internet accessibility, the finding shows that while both genders admit to having difficulties accessing the internet, more male respondents face these challenges than their female counterparts. This agrees with the submissions of [21] and [26].

Summarily, after making the following findings, this study submits that many NOUN students in Lagos State use the internet for different academic purposes. Still, a majority of them face internet accessibility issues. Indeed, the internet plays essential roles in open and distance learning, making the two theories applicable to this study. The Technological Determinism Theory, which posits that a society's technology determines the development of the society's social structures and cultural values, comes in handy here. The theory also asserts that the technology of an organisation plays critical roles in the way of life and pattern of interactions of members of the society, and this is what the internet does for both the distant learners and their teachers as it determines the way of teaching, learning and other academic activities in ODL. Similarly, the Media Dependency Theory is appropriate in this work because people rely so much on the medium that meets most of their needs at different times. This is what the internet does for the ODL students and the teachers as they depend on the platform for most of their academic activities making the internet wield so much influence on them in line with the position of [7].

Given the findings above, the researchers make the following recommendations:

1. The National Open University of Nigeria (NOUN) should improve its portal and network service to give the students seamless access to the school's online platforms to do their academic activities without any hindrance.

2. NOUN should provide a high-speed internet facility within its premises and Study Centres across the country to enable students around the school to have more internet access, beyond smartphones, to access academic resources online.

3. NOUN should integrate practical computer training in the course content for learners at all levels. This will equip learners with computer skills that will enable them to use different ICT facilities. Screening for admission in distance education should include a practical demonstration of ICT/Computer literacy skills by the prospective students.

4. The school needs to provide offline options for some academic activities, which will allow the students to write and submit TMAs and other tests offline to help students in rural areas where the network is usually poor to do their academic work still. It will also take care of some students (especially the old ones and non-tech-savvy learners) who have not yet mastered operating internet-based devices and modern gadgets until they adapt to the system.

5. NOUN should collaborate with telecommunication companies that provide data services to negotiate subsidised data plans for distant learners. This will be of significant help, especially to low-income households, since most of them access the internet and e-resources mostly from their mobile phones using self-sponsored mobile data.

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