AWARENESS AND UTILIZATION OF ZOOM TECHNOLOGY FOR LEARNING AMONG UNDERGRADUATES: EVIDENCE FROM PUBLIC UNIVERSITIES IN EDO STATE

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Abstract
The purpose of this study is twofold. First, to examine the level of awareness of zoom technology by undergraduates in public universities in Edo State. Second, to examine the level of utilization of zoom technology by undergraduates in public universities in Edo State. A descriptive survey research design was adopted for the study. The study population was 4,987 with a sample size of 380. The data was collected using a structured survey questionnaire. Data collected were analyzed using frequency counts, percentages (%), mean ($\overline{X}$) and standard deviation (SD). The results revealed that the level of awareness of zoom technology among undergraduates was high. Zoom technology were used by undergraduates to interact with lecturers for instructional delivery, for cloud meetings and for video conferencing. Despite the high level of awareness, there's low level of utilization of zoom technology among undergraduates. Finding also revealed that the benefits of using zoom technology were to facilitate discussions between lecturers and students and to foster students' understanding of the interrelationships of students worldwide. Findings also revealed that the challenges in using zoom technology by undergraduates include high cost of internet facilities and high cost of internet access. The authors concluded that despite the high level of awareness of zoom technology among undergraduates, the utilization *of zoom technology is low. It was recommended, among others, that university managers and administrators should endeavour to provide adequate and reliable zoom technology learning platform or software to interconnect students' and lecturers' for effective application of zoom instructional technology.*

Keywords: *Awareness, Public Universities, Undergraduates, Utilization, Zoom technology.*

Introduction

Electronic learning is one of the most significant educational innovations driven by array of technology enabled platforms that offer potential learners an alternative and innovative learning environment compared with traditional learning and, thus, represents IT-based innovation in education. Recently, e-learning has become very important due to the emergence of COVID-19 pandemic, which has greatly slowed academic calendars all over the World. Internet has changed the way people interact. Communication and access to information has been made easier. Use of internet is not only for communication through emails but is also a virtual platform on which people interact and see each other using zoom video communication. Through the use of e-learning facilities, it is possible to attend a lecture being taught abroad while seated somewhere in rural Nigeria, without need to travel.

Zoom technology has created a revolution with new advances, new ideas and new users for machines that once were considered useful for handful of tasks and learning processes. The Nigerian populace has overwhelmingly embraced the use of Zoom technology as an integral part of their

everyday lives (Eze & Chinedu-Eze, 2018). Observations through videos are powerful tools in learning. From the development of video cassette in 1964 to streaming video of the 21st century, video has penetrated into higher education and is gradually transforming teaching and learning. Greenberg and Zenetis (2012) observed that video has the highest traffic in internet use. They can spark curiosity, promote scientific enquiry and help students make connection between their experiences and the content to be taught.

As technology evolved, zoom technology has gained increased popularity with widespread use and is on track to replace the traditional way of teaching and learning especially in this time of post COVID-19 pandemic period as the means for effective teaching and learning and access to virtual instructional delivery through Information and Communication Technology (ICT). Zoom technology is altering the way we communicate, teach, learn, entertain ourselves and make decision. Zoom technology today can run complex software allowing learner and educator for advanced interactivity and with new hardware and technologies such as global positioning system. Zoom technology has made access to virtual instructional delivery through ICT very convenient and timely to students even from the comfort of their own homes and offices, and from wherever they are while on the move with their cellular phone units or personal digital assistants (Ray, 2020).

Statement of the Problem

The use of zoom technology in university globally has been a key factor in ensuring effective teaching and learning. With the emergence and utilization of zoom technology in different sectors, including universities, one would expect to see a holistic and integrated application and utilization of technologies and other platforms of e-learning, of which Zoom technology is an exemplary part, in the provision and utilization of effective teaching and learning in universities in Edo State. However, many schools of higher learning have not embraced e-learning for teaching and learning especially the Zoom technology even after the experiences of the COVID-19 pandemic, which discouraged large gathering of students in a confined learning environment or class room.

It has been observed that there is a relatively poor applications and utilization of Zoom technology for teaching and learning in the universities in Edo State. It has also been observed that there is poor or shortage of internet or e-learning platform and facilities in Nigerian universities, which may have hindered the utilization use of Zoom Technology on teaching and learning among undergraduates. It is against this backdrop that this study seeks to examine the awareness and use of Zoom technology by undergraduates in Ambrose Alli University Ekpoma Edo State.

Purpose of the Study

The purpose of this study is to investigate the level of awareness and utilization of Zoom technology among undergraduates in public universities in Edo State. The specific objectives of this study are to investigate:

1. the level of awareness of Zoom technology among undergraduates in public universities in Edo State.
2. the level of utilization of Zoom technology among undergraduates in public universities in Edo State.
3. the purpose of using Zoom technology among undergraduates in public universities in Edo State
4. the benefits of using Zoom technology among undergraduates in public universities in Edo State

5. the challenges facing the use of Zoom technology among undergraduates in public universities in Edo State

Literature Review

Zoom is a cloud-based video conferencing service you can use to virtually meet with others, either by video or audio-only or both, while conducting live chats, and zoom allows you record and save those sessions, such that they can be viewed later. Over 500 companies reportedly used Zoom in 2019 and during 2020 it hit even greater heights, racking up 227 percent growth over the years (Guzacheva, 2020). The secret to Zoom's popularity lies in the platform's ease of use. Setting up a Zoom call requires three things: a Zoom account, a webcam and access to the internet. Zoom encourages users to download the desktop app, although calls can be accessed via a browser with limited in-call features. Mobile users need to download the mobile version on their phone to participate in a call. The platform is compatible with Windows, Mac, Linux, iOS, and Android (Shadat, *et al.*, 2017).

For any electronic learning technologies such as zoom technology to be effective, students must be aware of what it entails, be motivated and competent to use it. However, Oye, *et al.*, (2012) averred that due to difficulties of ICT implementation in overcrowded classrooms; insufficient training, lack of learning support materials and support, curriculum overload, lack of clear planning and assessment, and severe pressure on lecturers to increase their research outputs, integration of zoom technology may not be a priority for lecturers. Zheng, Flygare and Dahl (2019) opined that awareness of zoom technology among university students would determine to a great extent, if a country could have more independent learners, who are problem solvers, critical thinkers, innovators and who can contribute positively in improving the way things are done.

Studies have generally indicated that the use of traditional didactic lectures alone cannot make students to be globally literate and succeed in this information age (Alchamdani, *et. al*., 2020; Ahmad, 2012). As noted by Febrianto, Mas'udah and Megasari (2020), research that informed the use of technology for educational purposes highlights the need to go beyond replication of traditional, didactic practices to an appropriation of digital communication. According to Andriyani & Sari (2020), effective academic use of zoom technology relies on instructors' attitudes and acceptance towards zoom technology.

Online teaching via zoom technology plays a significant role in education nowadays because of COVID-19 and most of the countries applied different tools of technology in education. Zoom help teachers and learners to work together. According to Febrianto, *et al.*, (2020), perceived usefulness is a primary determinant of technology integration and adoption. Erasmus (2020) noted that adopting and integrating technology into education improve pedagogical learning and education processes.

METHODOLOGY

Research Design

This study adopted the descriptive survey research design. A descriptive survey research design is a non-experimental quantitative research design (Mitchell & Jolley, 2007), which helps to gather data from group of respondents through questionnaire, and the results are generalized to the population (Ary, Jacobs, & Sorensen, 2010).

Population and Sample

The population of this study comprises of 4,987 undergraduates in the Faculty of Education, Ambrose Alli University Ekpoma, Edo State (Source: Statistical Bulletin for the year

2022/2023). This sample size of 380 was determined using Krejcie and Morgan (1970) sample size determinant table.

Table1: Sample size for a finite population by Krejcie and Morgan (1970)

N	*S*	*N*	*S*	*N*	*S*
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	1000000	384

Research Instrument

A structured questionnaire was used as the research instrument for the collection of data from the respondents.

Validity and Reliability of Data Collection Instrument

The instrument was subject to scrutiny from experts in the field of librarianship. The instrument was subject to a pilot study in the Faculty of Physical Sciences, Ambrose Alli University, to determine its reliability. It had a Cronbach's Alpha reliability coefficient of 0.91, and was thus considered reliable and adequate for the study.

Data Collection and Analysis

The research instrument was administered physically to the respondents and retrieved afterwards. The data were analyzed using descriptive statistics, such as the frequency count, percentages, mean scores ($\overline{X}$) and standard deviation (SD). Of the 380 copies of questionnaire distributed, 295 were returned and found usable for analysis, giving a return rate of 78%.

Result

Table 2: Level of awareness of Zoom Technology among undergraduates

S/N	Level of awareness	VHL	HL	LL	VLL	$\overline{X}$	SD
1	To what level are you aware of zoom technology?	95 39.7%	90 37.6%	30 12.5%	17 7.1%	3.0	.76

Table 2 shows the level of awareness of zoom technology among undergraduates in Ambrose Alli University Ekpoma Edo State. The Table shows that majority of the respondents were aware of zoom technology to a high extent in Ambrose Alli University Ekpoma Edo State with a mean and standard deviation of ($\overline{X}$ = 30, SD = 0.76).

Table 3: Extent of use of Zoom Technology by undergraduates

Extent of use	VHE	HE	LE	VLE	$\overline{X}$	S.D.	Decision
I use zoom technology to interact with lecturers for instruction	93 38.9%	99 41.4%	21 8.9%	19 7.9%	3.0	0.75	Agreed
I use zoom technology for cloud meetings	121 50.6%	86 35.9%	24 10.0%	8 3.3%	3.3	0.82	Agreed
I use zoom technology with video conferencing	87 36.4%	81 33.8%	32 13.3%	16 6.6%	2.8	0.77	Agreed
I use zoom technology with course mates for academic purposes	118 49.3%	79 33.0%	28 11.7%	14 5.8%	3.2	0.8	Agreed
I use zoom technology for academic discussion programmes on assignment and test	119 49.7%	80 33.4%	8 3.3%	19 7.9%	3.1	0.77	Agreed
I use zoom technology for recording online classes	90 37.6%	101 42.2	31 12.9%	17 7.1%	3.1	0.77	Agreed
I use zoom technology for saving online classes and tutorial	118 49.3%	87 36.4	8 3.3%	22 9.2%	3.2	0.8	Agreed
I use zoom technology for chatting	104 43.5%	80 33.4	45 18.8%	10 4.1%	3.1	0.75	Agreed

Table 3 shows responses on the extent to which zoom technology is used by undergraduates in Ambrose Alli University Ekpoma Edo State. The mean rating shows that majority of the

respondents agreed that they use zoom technology to interact with lecturers for instruction ($\overline{X}$ = 3.0, SD = 0.75), use zoom technology for cloud meetings ($\overline{X}$ = 3.3, SD = 0.82), use zoom technology with video conferencing ($\overline{X}$ = 2.8, SD = 0.77), use zoom technology with course mates for academic purposes ($\overline{X}$ = 3.2, SD = 0.8), use zoom technology for academic discussion programmes on assignment and test ($\overline{X}$ = 3.1, SD = 0.77), use zoom technology for recording online classes ($\overline{X}$ = 3.1, SD = 0.77), use zoom technology for saving online classes and tutorial ($\overline{X}$ = 3.2, SD = 0.8) and use zoom technology for chatting ($\overline{X}$ = 3.1, SD = 0.75) to a high extent.

Table 4: Purpose of use of Zoom Technology by undergraduates

Purpose of Use	SA	A	D	SD	$\overline{X}$	S.D.	Decision
I use zoom cloud meetings to facilitate communication with many people	133 55.6%	91 38.0%	12 5.0%	3 1.2%	3.4	0.85	Agreed
I use zoom to join online academic programmes through my cell-phones	135 56.4%	87 36.4%	10 4.1%	7 2.9%	3.4	0.85	Agreed
I use zoom to obtain information on exams and test	82 34.3%	107 44.7%	30 12.5%	20 8.3%	3.0	0.75	Agreed
I use zoom in sharing information in educational blogs via cloud meetings	12 5.0%	43 17.9%	163 68.2%	21 8.7%	2.1	0.52	Disagreed
I use zoom to watch simulated tutorials without a physical teacher	48 20.0%	125 52.3%	26 10.8%	23 9.6%	2.6	0.52	Agreed
I use zoom to attend online classes through my cell-phones	149 62.3%	51 21.3%	22 9.2%	17 7.1%	3.3	0.82	Agreed
I use zoom to communicate with my lecturers	7 2.9%	19 7.9%	45 18.2%	158 66.1%	1.3	0.32	Disagreed
I use zoom to communicate with my course mates	11 4.6%	15 6.2%	66 27.6%	139 58.1%	1.5	0.37	Disagreed
I use zoom to access to online lecture notes	14 5.8%	24 10.4%	51 21.3%	142 59.4%	1.5	0.37	Disagreed

Table 4 shows responses on the purpose of use of Zoom Technology by undergraduates in Ambrose Alli University Ekpoma Edo State. The mean rating shows that majority of the respondents agreed to item 1,2,3,5 and 6 that they use zoom cloud meetings to facilitate communication with

many people ($\overline{X}$ = 3.4, SD = 0.85), use zoom to join online academic programmes through my cell-phones ($\overline{X}$ = 3.4, SD = 0.85), use zoom to obtain information on exams and test ($\overline{X}$ = 3.0, SD = 0.75), use zoom to watch simulated tutorials without a physical teacher ($\overline{X}$ = 2.6, SD = 0.52), use zoom to attend online classes through my cell-phones ($\overline{X}$ = 3.3, SD = 0.82), while other respondents disagreed to item 4,7,8 and 9. However, the result showed that respondents use zoom technology for several purposes.

Table 5: Benefits of Zoom Technology by undergraduates

Benefits of Zoom Technology	SA	A	D	SD	$\overline{X}$	**S.D.**	**Decision**
Zoom facilitate discussions between lecturers and students and among students with direct communication	51 21.3%	132 55.2%	28 11.7%	26 10.8%	2.8	0.7	Agreed
Zoom fosters students understanding of the interrelationships of students worldwide	121 30.6%	88 36.8%	24 10.0%	6 2.5%	3.3	0.82	Agreed
it provides students with access to online lecture notes	103 43.0%	83 34.7%	39 16.3%	14 5.8%	3.1	0.77	Agreed
it allows students to learn at their own pace within and out of school	51 21.3%	132 55.2%	30 12.5%	26 10.8%	2.8	0.7	Agreed
it provides access to open learning environment	51 62.3%	129 12.1%	27 11.2%	26 10.8%	2.8	0.7	Agreed
It is very easy to use	149 62.3%	51 22.3%	24 10.0%	15 6.2%	3.5	0.82	Agreed
zoom technologies make interaction very beneficial	160 66.9%	44 18.4%	20 8.3%	5 2.0%	3.4	0.85	Agreed
It makes communication with large population of students very easy	133 55.6%	91 38.0%	12 5.0%	3 1.2%	3.4	0.85	Agreed
It helps to enhance teaching and learning in times of pandemic	135 56.4%	87 36.4%	10 4.1%	7 2.9%	3.4	0.85	Agreed
Use of zoom facilitate distance learning	102 42.6%	76 31.7%	32 13.3%	20 8.3%	3.0	0.75	Agreed
With zoom students can join classes in other reputable schools	130 54.3%	94 39.3%	5 2.0%	10 4.1%	3.4	0.85	Agreed

Table 5 shows responses on the benefits of Zoom Technology by undergraduates in Ambrose Alli University Ekpoma Edo State. The mean rating shows that majority of the respondents agreed to the various benefits which include to facilitate discussions between lecturers and students and among students with direct communication ($\overline{X}$ = 2.8, SD = 0.7), fosters students understanding of the interrelationships of students worldwide ($\overline{X}$ = 3.3, SD = 0.82), it provides students with access to online lecture notes ($\overline{X}$ = 3.1, SD = 0.77), it allows students to learn at their own pace within and out of school ($\overline{X}$ = 2.8, SD = 0.7), it provides access to open learning environment ($\overline{X}$ = 2.8, SD = 0.7), it is very easy to use ($\overline{X}$ = 3.5, SD = 0.82), zoom technologies make interaction very beneficial ($\overline{X}$ = 3.4, SD = 0.85), It makes communication with large population of students very easy ($\overline{X}$ = 3.4, SD = 0.85), it helps to enhance teaching and learning in times of pandemic ($\overline{X}$ = 3.4, SD = 0.85), use of zoom facilitate distance learning ($\overline{X}$ = 3.0, SD = 0.75) and With zoom students can join classes in other reputable schools ($\overline{X}$ = 3.4, SD = 0.85).

Table 6: Challenges faced in using Zoom Technology by undergraduates

Challenges faced by undergraduates	SA	A	D	S D	$\overline{X}$	**S.D.**	**Decision**
High cost of internet facilities	130 54.3%	7 2.9%	15 6.2%	87 36.4%	2.7	0.67	Agreed
High cost of internet access (subscription)	158 66.1%	47 19.6%	6 2.5%	18 7.5%	3.3	0.82	Agreed
Lack of knowledge of how to use mobile zoom app. Effectively	130 54.3%	94 39.3%	5 2.0%	10 4.1%	3.4	0.85	Agreed
Poor internet services by network providers (available but slow)	130 54.3%	7 2.9%	15 6.2%	87 36.4%	2.7	0.67	Agreed
limited memory of mobile devices	107 44.7%	80 33.4%	32 13.3 %	20 8.3%	3.1	0.77	Agreed
dearth of technological expertise among students	161 67.3%	43 17.9%	14 5.8%	21 8.7%	3.4	0.85	Agreed
bandwidth problem	51 21.3%	130 54.3%	32 13.3 %	26 10.8%	2.8	0.7	Agreed

Table 6 shows responses on the challenges faced in using Zoom Technology by undergraduates in Ambrose Alli University Ekpoma Edo State. The mean rating shows that majority

of the respondents agreed to the various challenges facing zoom technology which include high cost of internet facilities ($\overline{X}$ = 2.7, SD = 0.67), high cost of internet access (subscription) ($\overline{X}$ = 3.3, SD = 0.82), lack of knowledge of how to use mobile zoom app. Effectively ($\overline{X}$ = 3.4, SD = 0.85), poor internet services by network providers (available but slow) ($\overline{X}$ = 2.7, SD = 0.67), limited memory of mobile devices ($\overline{X}$ = 3.1, SD = 0.77), dearth of technological expertise among students ($\overline{X}$ = 3.4, SD = 0.85) and bandwidth problem ($\overline{X}$ = 2.8, SD = 0.7).

Discussion

Findings revealed that majority of the respondents are of the opinion that they are aware of zoom technology in Ambrose Alli University Ekpoma Edo State. This finding is in agreement with the study of Zheng, Flygare and Dahls (2019) who stated that the level of awareness of zoom technology among university students would determine to a great extent, if Nigeria could have more independent learners, who are problem solvers and who can contribute positively in improving the way things are done in Nigeria and other nations of the world. Many university students have cell-phones and other digital technologies that are Internet enabled, and many have access to the Internet-enabled computers. Prensky (2011) found that young people of the digital native generation possess sophisticated knowledge of and skills with information technologies. Whether Nigerian students use these facilities, knowledge and skills for zoom technology is yet to be empirically ascertained.

The findings revealed that zoom technology is used by undergraduates in Ambrose Alli University Ekpoma Edo State to a high extent, these include using zoom to interact with lecturers for instruction, use of zoom for cloud meetings, video conferencing with zoom, online interaction via video with course mates for academic purposes, saving in online classes and tutorial via zoom and chatting via zoom technology. This finding agreed with Serhan (2020) who investigated the perceived extents of use of Zoom for dissertation chairs to coach and mentor doctoral students. The participants of this study were dissertation chairs and students in the College of Doctoral Studies at a university in the southwestern United States. A researcher-developed survey was created to collect demographic data on the dissertation chairs in the university as well as data on their use of zoom with their doctoral students. Data were collected using a 19-item Linkert style survey. The survey consisted of five sections; demographic information, monthly usage of Zoom and how dissertation chairs used zoom with their doctoral students. In addition, the researchers interviewed four dissertation chairs and four doctoral students. The researchers found that both the faculty and the students valued the use of Zoom.

Result findings revealed that respondents agreed that they use Zoom Technology for several purposes in Ambrose Alli University Ekpoma Edo State, these include use zoom cloud meetings to facilitate communication with many people, use zoom to join online academic programmes through my cell-phones, use zoom to obtain information on exams and test, use zoom to watch simulated tutorials without a physical teacher, use zoom to attend online classes through my cell-phones. This finding agreed with Febrianto, *et al.,* (2020), they stated that research in the informed use of technology for educational purposes highlights the need to go beyond replication of traditional, didactic practices to an appropriation of digital communication.

Result shows that respondents agreed that there are several benefits for using Zoom Technology by undergraduates in Ambrose Alli University Ekpoma Edo State which include to facilitate discussions between lecturers and students and among students with direct communication, fosters students understanding of the interrelationships of students worldwide, it provides students with access to online lecture notes, it allows students to learn at their own pace within and out of

school, it provides access to open learning environment, It is very easy to use, zoom technologies make interaction very beneficial, It makes communication with large population of students very easy, It helps to enhance teaching and learning in times of pandemic, Use of zoom facilitate distance learning and With zoom students can join classes in other reputable schools. This finding agreed with Andriyani and Sari (2020) who stated that zoom is a very useful platform and effective for both teachers and learners because learners work together and improve the language skills appropriately. They are more motivated and eager to learn the target language through technology, in this case the Zoom platform. Comparing zoom with other tools such as Viber or WhatsApp, teachers had more difficulties during online teaching because these tools did not offer the opportunities for teaching as zoom platform did. Teachers had more challenges in using these tools because they could not teach learners properly until they began using Zoom.

Result revealed that there are several challenges faced in using Zoom Technology by undergraduates in Ambrose Alli University Ekpoma Edo State. These include it enables high cost of internet facilities, high cost of internet access (subscription), lack of knowledge of how to use mobile zoom app. effectively, poor internet services by network providers (available but slow), limited memory of mobile devices, dearth of technological expertise among students and bandwidth problem. This finding agreed with Alchamdani *et al.*, (2020), he stated that lack of resources in academic institutions, the social marginalization of students, insufficient access and availability of the internet and the lack of latest technology affected organizational responsiveness and students' capacity to participate in digital learning. Lack of proper interaction with instructors is another major concern associated with zoom technology. Additionally, concerns regarding any content of the online course are usually discussed with the relevant course instructor by e-mail, which requires response time (Alchamdani, *et al.*, 2020). Also there are disadvantages of using ZOOM because teachers have difficulties to assess and evaluate learners in an appropriate manner. Some of the learners are not interested in working with ZOOM or using technology in general because they are shy, and they are not able to perform their knowledge through online teaching and learning.

Conclusion

The study concluded that the level of awareness of zoom technology among undergraduates was relatively high, zoom technology was used by undergraduates to a high extent and they used Zoom Technology for several purposes. The study also concluded that there were several benefits of using Zoom Technology by undergraduates. However, several challenges were by undergraduates faced of using zoom technology by undergraduates in Ambrose Alli University Ekpoma Edo State.

Recommendations

Based on the aforementioned findings, the following recommendations are made:

1. To make the students become increasingly aware of zoom technology for learning, lecturers should endeavour to incorporate zoom technology activities in curriculum delivery, task design processes and outcomes, teaching pedagogies, and measurements of actual learning.
2. Government agencies, University management, and Students' Union Government should endeavour to organize seminars and conference annually or periodically to intimate students more on the constituents and benefits of zoom technology to their course curriculum.

3. Universities should endeavour to intensify ICT training for students. They should expose students to a range of co-curricular practical tasks on zoom technologies to help students become more aware and motivated for virtual learning.
4. The Universities should endeavour to provide adequate, reliable zoom technology learning platform or software and tools to interconnect all students' and lecturers' for zoom technology learning.
5. There should be established in every University, a virtual learning support centre to assist students' needs.

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