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Challenges and Prospects of Migrating to e-Learning in Nigeria Higher Education Sector: SDG4 in Focus.

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ABSTRACT

This study examined the challenges and prospects of migrating to e-learning in Nigeria higher education sector: SDG4.0 in focus. The objectives of the study centered on finding out effect of online learning in the implementation of higher education curriculum in Enugu State, South-east Nigeria. The methodology adopted by the study comprised the quantitative method and sample survey design. In the sample survey, a well validated and pre-tested questionnaire was used in collecting data. A sample of 336 used for the study was drawn from the population of students and lecturers of five higher institutions of learning in Enugu State, South-east Nigeria. This study was anchored on two theories: the Diffusion of Information Theory. Multiple Regression Analysis model was used for analysis of data. Results of the study showed that the online learning platforms did not enhance the performance of lecturers in the delivery of the curriculum of courses; that the e-learning platform had no significant effect on the performance of students in the learning of courses.. Finally, the study recommended increase in the funding of higher education institutions, reduction in the cost of ICTs through tax incentives to importers of ICTs accessories and establishment of local ICTs industries, training and capacity building of staff of HEIs in Nigeria among others.

Keywords: e-learning, online, learning, platform, lecturers, students, facilitators, mobile learning, COVID-19, m-learning, SDG4, curriculum, ICTs, HEIs, education.

INTRODUCTION

From the earliest times to the present day, the world or individual countries are never new to occurrence of global emergencies or crises. Global crisis usually takes the form of natural disasters, like earthquakes, famine, wars, flooding, fire-outbreaks, and disease pandemic (NCDC, 2020; UNESCO, 2018). In fact, a typical example of a global crisis or emergency was the recent COVID-19 pandemic that broke out in February 2020 across the world. Findings from 200 countries in the mid-April 2020 showed that 94 percent of learners were affected by the pandemic around the world, which represents 1.58 billion learners (United Nations, 2020). Additionally, UNESCO (2020) reported that the closure of higher institutions has affected over 91 percent of the students' population in the world and that 23.8 million students had dropped out or was not able to secure admission to schools in the 2021 academic calendar. From the global perspective, global emergencies or crisis leave the largest devastating impact on the education sector and affect learners and teachers from pre-primary to the tertiary education level (Andreas, 2020). Universities close their premises and countries shut down their borders in response.

Electronic learning processes involve some digital technologies that permit teachers and students not to necessarily be present in the same room. It is the only mode of teaching that can be of help in passing instructions to students in a situation of global emergency whereby social distancing is of utmost importance (Karp & McGowan, 2020). Before any global crisis like COVID-19 pandemic, digital technologies allow us to move much of our lives such as health, education, social and economic life online (Miks & Mcilwaine, 2020). Online education has played a vital role in the past as it has helped some institutions to overcome the barrier of educational continuity in the time of global crisis (Ayebi-Arthur, 2017). For instance, it was online teaching that University of Camerino resorted to when earthquake destroyed almost all their infrastructure and face-to-face interactions were not possible (Ayebi-Arthur, 2017). Online education also helped University of Canterbury to operate when it was faced with a great earthquake in 2001 (Todorova, & Bjom-Andersen, 2011).

In fact, remote learning becomes a lifeline for education during a global crisis like a pandemic but, the opportunities that digital technologies offer go well beyond a stopgap solution during a crisis (Andreas, 2020). According to Eze et al., (2018), e-learning education is the all-inclusive blending of ICT gadgets and modern telecommunication equipment into the education system. Andreas (2020) and Eze et al. (2018) maintained that e-learning is a hallmark of distance learning. Digital technology offers entirely new answers to the questions of what people learn, how they learn, and where and when they learn. Meanwhile, Eduard and Lucian (2020) hinted that e-learning is an innovative platform for transmitting knowledge and skills to the learners; it is cheap, saves time, and has a wider coverage, and as well promoting team learning and collaboration. Andreas (2020) reiterated that technology promotes deep learning, and allows schools to respond better to the varying needs of the students.

In advanced countries, the changes are eminent in the educational sector as traditional teaching methods have been transformed into modern methods (Kacerauskas & Kusaityte, 2020). Students in the College routinely learn and study with technology in advanced countries. For instance, the Chinese Ministry of Education introduced a *Suspending Classes Without Stopping Learning* policy to ensure that learning was not compromised at any time during the recent COVID-19 pandemic lockdown (Zhang et al., 2020), and provide flexible online learning to hundreds of millions of students from their homes (Huang et al., 2020). Online platforms were the most popular tool used during the recent COVID-19 pandemic in the OECD countries (Schleicher and Reimers, 2020). The instructional tools are designed in such a way that students could explore educational content at will, while teachers delivered the lessons using virtual meeting platforms (Andreas, 2020). In Sweden, post-secondary schools have switched to mainly distance learning from the onset of that pandemic (UNESCO, 2020). In the online review conducted by Chaka (2020) in South Africa and the United States of America, it was found that during the recent COVID-19 lockdown, 17 of the 21 South African universities and 63 of the 64 U.S. universities migrated to e-learning and utilized Zoom, Canvas, and Blackboard as the topmost online tools and resources. In March 2020, the Italian government equipped schools with digital platforms, trained school instructors on techniques for e-learning, and gave digital devices to poor students to cushion the effects of the COVID-19 pandemic (The Republic of Italy, 2020). In the same March 2020, Pakistan's Higher Education Commission (HEC) compelled higher institutions to

commence e-learning. Also, teachers in Greece conducted virtual real-time classes in conjunction with other online learning tools (Ministry of Education and Religious Affairs, 2020; Schleicher and Reimers, 2020). Australia rapidly switched to online learning in the wake of the pandemic (Ali, 2020). This would prevent compromising education in a pandemic situation (The News, 2020)

As part of measures to contain the spread of COVID-19 in Nigeria, the Federal Ministry of Education, through the Permanent Secretary in the Ministry, on March 19th ordered the immediate closure of tertiary institutions, secondary and primary schools across the nation over the outbreak of the disease in the country. Report of Education in Emergency Working Group has also shown that about 46 million Nigerian students are affected by the schools' closure (EiEWG, 2020); this is very significant as it represents 25 percent of Nigeria's total population. Worthy of note also is the fact that virtually all the high education institutions (HEIs) or tertiary institutions of learning (TILs) in Nigeria operate the traditional or conventional mode of learning known as the face-to-face (F2F) mode. This mode by its very nature requires high contact and interactions on the part of the student, his lecturers, and fellow students for the purpose of participating in the key activities of his academic programme, such as lectures, assignments, tests, examinations, practicals, projects, library research, seminars, workshops, and conferences, among others. This means, therefore, that throughout the period of the global emergency like COVID-19 lockdown, all the aforementioned academic activities were disrupted or suspended in higher educational institutions of learning (HEIs) in Nigeria like in other countries of the world. In the efforts to mitigate the effects of the global emergence on the education system, many countries in both the developed and developing world resort to the distance learning model that is based on the electronic learning (e-learning) format (Schleider & Reimers, 2020; Oyediran et al., 2020). In addition, some schools, especially private schools make use of some online applications to engage their students while the school doors were physically closed. There are several of such online tools available which are important for an effective and efficient learning environment. Educators can use a combination of audio, videos, and text to reach out to their students in order to maintain a human touch to their lectures (Zhang et al., 2006). This also helps in creating a collaborative and interactive learning environment where students can give their immediate feedback, ask questions, and learn interestingly.

E-learning is a technology-driven model and makes teaching take place without physical contact with the learners. The practical avenue to avoid drawback in the Nigerian education system during global or national crisis like the COVID-19 is e-learning. E-learning supports knowledge and performance management (Mahmood, 2020; The World Bank, 2020a). According to Edward and Lucian (2020), educational technology as a field of education or new terminology has been like teaching aids or apparatus. E-learning has offered tremendous opportunities for teaching by electronic means (Kacerauskas & Kusaityte, 2020; The World Bank, 2020a). Students that undertake electronic studies generally performed better than those in the face-to-face courses (Andreas, 2020). To him, the academic performance of learners that use the electronic approach supersedes those who used the traditional approach. E-learning is a new learning model in Nigeria, with all its potentialities. The mission of this paper, therefore, is to examine the effect of migrating to the e-learning platforms on the performance of lecturers

and students in the delivery of tertiary education curriculum in Nigeria in the era of a global emergency like the COVID-19 pandemic that recently ravaged Nigeria and the entire world. The focus of this study was five tertiary institutions of learning in Enugu State, South-east Nigeria, and implementation of the curricula of higher education courses using the e-learning platforms vis-à-vis 1` achievement of the Sustainable Development Goal fourth industrial revolution (4IR or4.0) on education.

Statement of the Problem

Global emergencies like war or pandemic make all schools, colleges, and universities to shut down. Many academic institutions, proprietors, State and Federal Governments, therefore, seek the help of online education so that teaching and learning processes are not hampered. In a bid to avoid brain-drain and prevent the total collapse of the education sector in the country, Nigeria joined other leagues of developed countries and incorporated e-learning to deliver lectures and give assignments to the students. For instance, during the recent COVID-19 pandemic some state governments such as Lagos, Abia, Enugu, Ondo, Akwa Ibom, Nasarawa, Imo as well as Ekiti States in Nigeria proffered online-virtual education as the possible way out (Oluwatuyi et al., 2020). In general, a complete online education requires an elaborate lesson plan design, teaching materials such as audio and video contents, as well as technological support teams (Lucey, 2015). This digitization has not been sufficiently harnessed in many tertiary institutions where ICT is applied. It is limited to students' registration and examination. Much effort has not been geared towards effective teaching and learning process and students' academic performance through e-learning. It is expected that Nigeria on its own part should follow suit, with the government compelling all public and private HEIs to migrate to the e-learning model as part of the efforts to mitigate the effects of any global crisis like the COVID-19 pandemic lockdown on the nation's higher education system (The News, 2020; Oyediran et al., 2020; PTF on COVID-19, 2020).

As investigations show, private universities are at the forefront of e-learning adoption in Nigeria as a result of their innovative and flexible operations. Regrettably, it appears that most public HEIs have not been able to embrace the e-learning platform to the detriment of their students and the society at large. Various factors might be responsible for these, such as student population, training of lecturers and students, and lack of internet facilities, amongst others. The aforementioned factors coupled with the university unions' incessant strikes play a key role for the setback of public HEIs' academic activities during any global emergency like the COVID-19 pandemic in Nigeria. For instance, while the recent COVID-19 pandemic has forced Nigeria to embrace e-learning to keep pace with rapid development in the area of technology, the implementation usually is at a very low pace (Oyediran et al., 2020).

At the heat of rapid rising cases of COVID-19 in Nigeria, the Federal Government locked down two states (Lagos and Ogun) where the index visited, and FCT Abuja, while other affected states later joined as the corona virus increased in intensity. The Federal Ministry of Education enforced electronic learning in the tertiary institutions as a way to ensure that the schools system is not collapsed. Beyond the government pronouncement and swift shift to e-learning across the world, researchers have not empirically examined the influence of socio-economic variables of instructors and constraints on e-learning compliance during a global emergency like the COVID-19 pandemic. More so, the World Bank

(2020b) is of the view that few pieces of research have been conducted on the scale of e-learning provision, compliance and limitations in the higher institutions. Many studies focused on the necessity of e-learning during lockdown (Ali, 2020), instructional strategies for online (Mahmood, 2020), level of preparedness for e-learning (Eduard and Lucian, 2020; EiEWG, 2020), e-learning and tertiary education experience (Adeoye et al., 2020), and use of online instruction, tools and resources during global emergencies (Chaka, 2020). Thus, in view of the above predicaments the researcher is poised to find out: the effect of online platform on the performance of lecturers in the delivery of courses in tertiary institutions of learning under period of global emergency. The effect of e-learning platforms on the performance of students in the learning of courses in tertiary institutions of learning under period of global emergency. The effect of e-learning on the performance of non-academic facilitators on the teaching/learning of courses in tertiary institutions of learning under period of global emergency.

Objectives of the Study

1. To find out the effect of online platforms on the performance of lecturers in the delivery of courses in tertiary institutions of learning under period of global emergency or crisis.
2. To investigate the effect of m-learning platforms on the performance of students in the learning of courses in tertiary institutions of learning under period of global emergency or crisis.
3. To assess the effect of e-learning on the performance of non-academic facilitators on the teaching/learning of courses in tertiary institutions of learning under period of global emergency or crisis.

Research Questions

i. What is the effect of online platform on the performance of lecturers in the delivery of courses in tertiary institutions of learning under period of global emergency or crisis?

ii. What is the effect of m-learning platforms on the performance of students in the learning of courses in tertiary institutions of learning under period of global emergency or crisis?

iii. What is the effect of e-learning on the performance of non-academic facilitators on the teaching/learning of courses in tertiary institutions of learning under period of global emergency or crisis?

Research Hypotheses

i. There is no significance difference in the performance of lecturers and students in online delivery of courses in tertiary institutions of learning under the period of global emergency or crisis.

ii. There is no significance difference between lecturers and students in the mobile learning platforms in the learning of courses in tertiary institutions of learning under period of global emergency or crisis.

iii. There is no significance difference in between lectures and students in e-leaning platforms in tertiary institutions of learning under period of global emergency or crisis.

Methodology

The methodology adopted by this study comprised the quantitative method and sample survey design. The research method adopted by this study was the quantitative method, while the research design of the study was sample survey research. In the said surrey, data were collected through

structured questionnaire regarding such characteristic like age, gender, education, income level, farm size and marital status. Others were issues on the three research constructs of the study: online learning, mobile learning, and e-learning platforms. The population of lecturers, non-academic facilitators, and students of the departments of the five institutions sampled was 2,653. The institutions were University of Nigeria, Nsukka, Institute of Management & Technology, Enugu, Godfrey Okoye University, Enugu, College of Education Technical, Enugu, and ESUT, Enugu.

From this population, a sample size for the study was determined using Kothari's Finite Population Correction Factor statistics, whose formula is given by:

$$n = \frac{z^2pq}{e^2}$$

(Kothari, 2004).

At the significance level of 5% (0.05) and confidence level of 95% or 1.96, 50% (0.5) proportion of an attribute of the population (p), and 50% 0.5) proportion of an attribute of the population not present (q) i.e. I-P, and 5% desired level of precision (e), the estimated sample size was 336. Sample Size for the study was, therefore, 336.

Data primary data and secondary data were collected by the study. The primary data were collected using well structured questionnaire that consisted of close-ended items. The said questionnaire was piloted at three (3) sample units for purpose of test-retest measurement. Results of the reliability test carried out on the questionnaire showed a Cronbach's Alpha Index of 0.823, which is well above 0.7 universal benchmark and, therefore, considered good enough for the field survey. The questionnaire was administered to 336 and respondents in the five institutions studied.

Results and Discussion

Results

Results of the analysis showed that out of the 336 copies of questionnaire distributed 305, (90.8%) were returned well completed. 22 (6.6%) were not returned at all, while 9 (2.7%) were returned but rejected owing to inappropriate completion. It was the responses borne by the 305 well completed questionnaires that were extracted and coded into data that were used for both the subsequent analysis and test.

What is the effect of online platform on the performance of lecturers in the delivery of courses in tertiary institutions of learning under period of global emergency?

Relationship between e-Learning Platforms and Performance of Lecturers, Students, and Non-Academic Facilitators/Staff.

Hypothesis No. 1

i. Online platforms did not enhance the performance of lecturers in the delivery of courses in tertiary institutions of learning under the period of global emergency.

Table 1: Model summary
Model Summary (Goodness of Fit)

Model	R	R Square (R^2)	Adjusted R	Std. Error of the Estimate
1	.403	.162	.157	9.07299

a. Predictors (constant): Online learning platform

Table 2: ANOVA[b]

Model		Sum of squares	df	Mean Square	F	Sig.
1	Regression	6,125	2	6.125	74.402	.083[a]
	Residual	2,470	303	8232		
	Total	8,595	305			

a. Predictors (constant): Online learning platform
b. Dependent variable: performance of lecturers

Table 3: Coefficients[a]

Model	Unstandardized Coefficient		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1	Constant	1.697	9.663	17.566	.000
	Online learning platform	-37.28	4.316	-.403	-.157 .083

a. Dependent variable: performance of lecturers

2. What is the effect of e-learning platforms on the performance of students in the learning of courses in tertiary institutions of learning under period of global emergency?

Hypothesis No. 2

ii. Mobile learning platforms did not increase the performance of students in the learning of courses in tertiary institutions of learning under period of global emergency.

Table4. Model Summary

Model	R	R Square (R^2)	Adjusted R	Std. Error of the Estimate
1	.309	.095	.089	3,91023

a. Predictors (constant): Mobile learning platform

Table 5: ANOVA[b]

Model		Sum of squares	df	Mean Square	F	Sig.
1	Regression	4,841	2	4,841	.317	.613[a]
	Residual	4,587	303	1.529		
Total		9,428	305			

a. Predictors (constant): Mobile learning platform

b. Dependent variable: Performance of students

Table 6: Coefficients[a]

Model	Unstandardized Coefficient		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1	Constant	4.720	7.648	.617	.581
	Mobile learning platform	-10745.897	19097.045	-.309	-.563 .613

a. Dependent variable: Performance of students

3. What is the effect of e-learning on the performance of non-academic facilitators on the teaching/learning of courses in tertiary institutions of learning under period of global emergency or crisis?

Hypothesis No. 3

iii. e-leaning platforms never caused any increase in the performance of non-academic facilitators in the teaching/learning of courses in

tertiary institutions of learning under period of global emergency or crisis.

Table 7. Model Summary

Model	R	R Square (R^2)	Adjusted R	Std. Error of the Estimate
1	.462	.214	.209	2.29686

a. Predictors (constant): Learning platforms

Table 8: ANOVA[b]

Model	Sum of squares	df	Mean Square	F	Sig.
1	Regression	4,3041	2	4.304	.816	.433[a]
	Residual	1,5833	303	5.276		
	Total	5,8874	305			

a. Predictors (constant): e-learning platforms

b. Dependent variable: Performance of non-academic facilitators/staff

Table 9: Coefficients[a]

Model	Unstandardized Coefficient		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1	Constant	1.651	2.601	6.346	.008
	e-learning platforms	-19.395	21.471	-462	-.903	.433

b. Dependent variable: Performance of non-academic facilitators/staff

Source: Field survey, 2021

Discussion

Results of the analysis presented in Table 1 with regard to the first hypothesis showed that online learning platform as the independent variable was able to explain about 15.7% of the behavior of performance of lecturers, since the adjusted coefficient of determination (R^2) was 0.157. This suggests that the remaining 84.3% of the behaviour of performance of lecturers could be

attributed to some other deleterious factors that operated outside the regression model.

Table 2 showed that the explanatory variable (predictor) contributed significantly to the model with an F-ratio measure of 74.402 and a p-value of 0.083, which is greater than 0.05 (p=0.83>0.05). This clearly falls within the acceptance region of the hypothesis; which means that the research hypothesis should be accepted. Table 3 on its own showed that when performance of lecturers increased by 1, online learning platform decreased by 37.228 coefficients.

With regard to Hypothesis No. 2, table 4 showed that mobile learning platform was able to explain 8.9% of the behaviour of performance of students, since the adjusted coefficient of determination (R^2) was 0.089. The foregoing means that the remaining 91.1% of the said behavior of performance of students could be attributed to certain factors operating outside the regression model. Table 5 showed that the independent (predictor) variable contributed as little as 0.317 to the model and a probability value (p-value) of 0.613, which is greater than the significance level of 0.05 (i.e. p=0.613 >0.05). The foregoing results clearly fall within the acceptance region of the research hypothesis, which means that we should accept the hypothesis of this research. Table 6 also showed that as the performance of students increased by 1 coefficient, mobile learning platform decreased by 10745.897 coefficients.

Furthermore, the results of the analysis performed on the data collected with respect to hypothesis No. 3 as presented in Table 7 showed that e-learning platforms as the explanatory (predictor) variable was able to explain about 20.9% of the behavior of performance of non-academic facilitators/staff, since the adjusted coefficient of determination (R^2) was 0.209. This suggests that the remaining 71.9% of the behavior of performance of non-academic facilitators/staff, since the adjusted coefficient of determination (R^2) was 0.209. This suggests that the remaining 71.9% of the behavior of performance of non-academic facilitators/staff could be attributed to factors that operated outside the regression model for the research. Table 8 also showed that the predictor (explanatory) variable contributed as little as 6.346 and a p-value of 0.433, which is greater than 0.05 stipulated significance level of 0.05 (i.e. p=0.43 > 0.05). The foregoing result clearly falls within the acceptance level of the research hypothesis, which means that we should, therefore, accept the hypothesis of the research as earlier put forward. Table 9 also showed that when performance of non-academic facilitators/staff increased by 1 coefficient, e-learning platform decreased by -19.395 coefficients.

Conclusion

This study concludes that e-learning model has not been effectively incorporated into the tertiary education system in Enugu State. This might be as a consequence of the various obstacles or challenges associated with the e-learning education in a developing country like Nigeria such as the issue of poor funding, unstable power supply, high cost of ICTs, inadequate trained staff, and poor internet connectivity among others. This study also found out that generally the e-learning platforms such as online learning and mobile learning platforms had no significant influence on the teaching and learning of courses in most tertiary institutions in Nigeria, especially in Enugu State in the period of global crisis like the recent COVID-19 pandemic era. This was exemplified in the fact that none of the e-learning platforms, especially online learning and mobile learning platforms increased the performance of lecturers or students in the era of global crisis in the various tertiary institutions in Enugu State.

Recommendations

1. It is hereby recommended that compliance to e-learning in the tertiary institutions should go beyond the global crisis period such as the COVID-19 lockdown.
2. Staff training and capacity building on e-learning should be put in place by the institutions' authorities.
3. The government should address challenges limiting e-learning in the tertiary institutions through provision of stable power supply, increased funding of HEIs, and training.
4. Local industries should also be encouraged to manufacture some ICT prototypes and accessories to lessen the cost of acquisition of such gadgets arising from high tariffs. These recommendations become very important going by the rapidly changing world of basic education through digitization.

REFERENCES

Abdullahi, (2011). Interrelationship between Personal Factor and Academic Achievement in Mathematics of Ebira Secondary School Students in Kogi.

Adebayo, A. (2004). *Principles and Practice of Public Administration.* New York: John Wiley & Sons in Assoc. with Spectrum Books.

Adeoye, I.A. Adaniki, A.F. & Adaniki, A. (2020). COVID-19 and e-Learning: Nigeria tertiary education system experience. *International Journal of Research and Innovation in Applied Science. (IJRIA5), 5 (5), 28-31*.

Adesoji, F.A. (2008). Managing students' attitude towards science through problem-solving instructional strategy. *Journal of Anthropology, 10(1), 21-24.*

Agbele, A.T. & Oyelade, E.A. (2020). Impact of COVID-19 on the Nigerian educational system: Strengths and challenges of online/virtual education. Asian Journal of Education and Social Studies, 13 (1), 26-35.

Ali, W. (2020). Online and remote learning in higher education institutions: a necessity in light of COVID-19 pandemic. High Educ. Stud. 10 (3), 16-25.

Andreas, S., (2020). The Impact of COVID-19 on Education Insights from Education at a Glance 2020. OECD, p. 31.

Anthony, S.J. (2017). Global patterns in corona virus diversity. Virus Evolution, 3 (1).

Aremu, E., (2013) Poor Academic Performance of Students in Secondary Schools, Retrieved June 10.

Ayebi-Arthur, K. (2017). E-learning, resilience and change in higher education: Helping a university cope after a natural disaster. *E-learning and Digital Media, 14 (5), 259- 274.*

Chaka, C., (2020). Higher education institutions and the use of online instruction and online tools and resources during the COVID-19 outbreak – *An online review of selected U.S. and SA's universities. Res. Squ. 1, 46.*

Christopher, J. and Steven, R. (2011). Class size Reduction and Student Achievement: The Potential Tradeoff between Teacher Quality and Class size. *Journal of Human Resources, 44(1223-250.*

Oyediran, W.O., Omoare, A.M, Owoyeemi, M.A, Adejobi, A.O. & Fasasi, R.B. (2020). Prospects and limitations of e-learning application in private tertiary institutions amidst COVID-

19 lockdown in Nigeria. Heliyon, 6, 1-8.

Cucinotta, D. & Vanelli, M. (2020). WHO declares COVID-19 a pandemic. Acta biomedia: Atenel Parmensis, 91 (1) 157-160.

Eduard, E., Lucian, L. (2020). Is Romanian Prepared for e-learning during the COVID-19 pandemic? Sustainability 12, 1-29.

EiEWG, (2020). Nigeria Education Sector COVID-19 Response Strategy in North East, p. 18

Eze, S.C., Chinedu-Eze, V.C., Bello, A.O., (2018). The utilization of e-learning facilities in the educational delivery systems of Nigeria: a study of M-University. *Int. J. Edu. Technol. Higher Educ. 15 (34). 1-20.*

Fesler, J.W. (2000). *The state and its study: The whole and the parts in public administration.* New York: Aaron Catham House Publishers Inc.

Goodier, S. (2017). Tracking the Money for Open Educational Resources in South African Basic Education: What We Don't Know. *The International Review of Research in Open and Distributed Learning, 18(4), 232-245.*

Henry, N. (2006). *Public Administration and Public Affairs. (6th ed).* Englewood Cliffs, N.J.Prentice Hall.

Huang, H., Liu D.J. Tlili, A., Yang, J.F., Wang, H. (2020). Handbook on Facilitating Flexible Learning during Educational Disruption: the Chinese Experience in Maintaining Undisrupted Learning in COVID-19 Outbreak. https://lite.unesco..org/Retrieved on October 07, 2020.

Iifijeh, G. & Yusuf, F. (2020). COVID-19 pandemic and the future of Nigeria's University System: The quest for libraries' relevance. European Journal of Education Management, 6 (10), 31-49.

Kacerauskas, M., Kusaityte, J. (2020). Japanese University Found a Genius Solution for Their Graduation Ceremony during the Coronavirus Pandemic.https://www.bor.edpanda. com. Retrieved on October 10, 2020.

Karp, P. & McGowan, M. (2020). Clear as mud: Schools ask for online learning help as coronavirus policy confusion persists. The Guardian, 261-307.

Kothari, C.R. (2004). *Research methodology: methods and techniques.* New age international publishing limited, New Delhi, p. 414.

Madsen, K.D. (2013). Unfolding Education for Sustainable Development as Didactic *Thinking and Practice Sustainability 2(5), 3771-378.*

Maclean, R. & Dahir, A.L. (2020). Nigeria responds to first corona virus case in sub-saharan Africa. New York Times. Retrieved, 10.

Mahmood, S. (2020). Instructional strategies for online teaching in COVID-19 pandemic. Hum. Behav. Emerg. Tech. 1-5.

Ministry of Education and Religious Affairs, 2020. Mathainoumesto Spiti (We learn at home), Ministry of Education and Religious Affairs, Greece. https://mathainoumesto spiti.gov.gr/. Retrieved on October 06, 2020.

Negro, F.A. & Negro, L.G. (2000). *Modern Public Administration, 5th edition*, New York: Harper & Row.

Oluwatuyi, V.S. et al., (2020). COVID-19 in Ekiti State, Nigeria: why should we worry? *International Journal of Research and Scientific Innovation, 7 (6), 146-149.*

Onuoha, C.B. (2001*). Fundamentals of Public Administration.* Aba: Unique Press.

Oyediran, W.O., Dick, T.T., 2018. Use of information communication technology (ICT) in teaching

profession in Ogun State, Nigeria. Int. J. e-learn. Sec. (IJeLS) 7 (1), 550-555.

Parry, J. (2020). China corona virus: Cases surge as official admits human-to-human transmission. British Medical Journal Publishing Group.

Republic of Italy, (2020). Measures to Strengthen the National Health Service and Economic Support for Families, Workers and Companies Related to the Epidemiological Emergency from COVID-19 (Law Decree 17th March, 2020 Number 18), 161/70. Official Gazette of the Italian Republic. https://www.gazzettaufficiale.i.2020.

Sarchs, G. (2015). The Challenge of Implementing the Sustainable Development Goals in Africa: The Way Forward. *African Journal of Reproductive Health,* 20(3), 13-18.

Schleicher, A., Reimers, F. (2020). Schooling Disrupted, Schooling Rethought: How the COVID-19 Pandemic is Changing Education. OECD. https://read.oecd-ilibrary.org/ view/?ref=133

The News. (2020). Punjab University to Continue Online Classes. https://www.thenews.com. Retrieved on 11 October, 2020.

The World Bank, (2020a). how Countries Are Using Edtech (Including Online Learning, Radio, Television, Texting) to Support Access to Remote Learning during the COVID-19 Pandemic https://www.worldbank.org/ Retrieved on October 14, 2020.

Thisday, (2016). Transmission Company of Nigeria (TCN): Nationwide Power Supply Drops to 1,400MW. Thisday newspaper, May 18, 2016.

Todorova, N. & Bjon-Anderson, N. (2011). University learning in times of crisis: The role of IT. *Accounting Education, 20 (6), 597-599.*

UNESCO, 2020. COVID-19 Educational Disruption and Response. https://en.unesco.org/covid-19/educationresponse. retrieved on October 10, 2020.

United Nations, 2020. Policy Brief: Education during COVID-19 and beyond, p. 26. August, 2020.

Wilson, F.R. Pan, W., Schumsky, D.A., 2012. Recalculation of the critical values for Lawshe's content validity ratio. Meas. Eval. Counsel. Dev. 45 (3), 197-210.

Wilson, W. (1887). The study of administration, *political science quarterly*, (2) *June 1887: reprinted in the Quarterly vol. 56, December 1941.*

World Bank, 2020b. Remote Learning and COVID-19: the Use of Education System as a Result of Massive School Closings.

UNESCO, (2016). *Sustainable Development Goal Four, Education 2030 Framework for Action.* Paris: UNESCO.

United Nations, (2012). *The Future We Want, Outcome Document of the UN Conference on Sustainable Development.* New York: United Nations.

Zenelaj, E. (2013). Education for Sustainable Development. *European Journal of Sustainable Development,* 2(4), 227-232.

Zhang, D. et al., (2006). Instructional video in e-learning: Assessing the impact of interactive video on learning effectiveness. Information Management, 43(1), 15-27.http://www.englishclub.com/teachinglargeclasseshtml.2010.