

E-Learning as an Alternative Approach to Primary Education in the Era of Covid-19 Pandemic-The Edobest Experience

ALOHAN, O. Ernest

Department of Estate Management,
Faculty of Environmental Sciences
University of Benin, Benin City, Nigeria

&

ALOHAN, Osasumwen & EGBON, I. Edith

Edo State Universal Basic Education Board,
Benin City, Edo State, Nigeria

Abstract

The study sought to assess the perceptions of teachers, parents and pupils of public schools on information technology as a medium of teaching/learning in the era of covid-19 pandemic. The study employed the empirical survey method using structured questionnaire which were administered to a total of 180 respondents out of which 176 were retrieved and analysed. Findings show that; all the participants were actively involved in the e-learning program through the WhatsApp platform. The study also revealed that there were challenges encountered by the participants such as illiteracy of some parents, lack of smart phones by many parent and poor electricity to charge phones amongst others. The study concludes that e-learning of EdoBest was successful and it was a good alternative for teaching pupils in public schools. The study recommends that the state government through the state Ministry of Education create awareness of the importance and benefit of e-learning to the public, liaise with internet network providers to provide a special package for students and teachers for learning purpose at a reduced cost and provide smart phones to students and teachers at a discounted rates.

Keywords: Information and Communication Technology, Primary Education, E-Learning, Impact, Covid-19 Pandemic

Introduction

The outbreak of corona virus (Covid-19) is today a scare in the world. This has adversely affected economic and social life of people all over the world. As a result, schools, market places, businesses and other socio-economic activities has been paralysed. In order to militate against the effect of the covid-19 pandemic on student education in Edo state, the government embarked on the use of Information and Communication technology (ICT) as a medium for teaching its student with particular interest on basic (Primary) education through the Edo Basic Education Structural Transformation (EdoBEST) platform.

Information and Communication technology, was meanly used as a medium of information exchange through text and voice messages, storage and retrieval of information and so on, it is now a veritable instrument in transmitting knowledge in our schools. It is believed that ICT and computer education in a changing world is of importance for everyone to access and use information (Damkor, Irinyang & Haruna, 2015) as it is a necessity for

development. Aworanti (2016) asserted that ICT has had positive effect on education with Nigeria having a transformation in this regard.

The importance of primary school cannot be overemphasized been the foundation of every child's academic pursuit, hence most countries have made it compulsory for every child. Asodike and Ikpitibo (n.d) asserted that primary education is were all other levels of educational achievement are built as it prepares a child's mind and train the child for higher academic pursuits. It is at this level a child's skill of reading and writing, development of standard attitude and behaviour, and acquisition of some other skills that enables the child adjust into the society are developed (Asodike & Ikpitibo, n.d; Olaniyan & Obadara, 2008). However, Olaniyan and Obadara, (2008) opined that primary education should be properly controlled and managed for effective higher education.

Several literature on the application of online teaching and learning exist in literature. Such as Basri, Alandejani and Almadani, 2018; Ratheeswari, 2018; Arkorful and Abaidoo, 2014 and Fu, 2013. Arkorful and Abaidoo (2014) stated that E-learning has made strong impact in teaching and learning as it involves the training, knowledge delivery, interaction of students, ease of communication and improves relationships and called for its implementation to enjoy the full benefit.

Gilbert (2015) asserted that online learning requires and promotes the use of online research and resources, permits student to do their work at their own speed within the set deadlines for their course work and allows student to be independent, responsible and motivated on their own. The study identified lack of reliable internet in the houses of most students and lack of direct assistance from their teachers when they don't know what to do as challenges associated with online teaching/learning. The study further stated that Good work ethics, proper time management, self-motivation, independent, responsibility and the ability to see the overall objective of school were factors considered to be essential for the success of online learning. Furthermore, the study asserted that the classroom system allows teachers guide and assist the students physically while the online system does not provide students with the opportunity of meeting their teachers physically and concluded that online learning is more beneficial to students then its challenges.

Yususf and Yusuf (2009), in their study, reiterate the claim in literature that information and communication technology has the potentials to improve the quality of instruction, improve school management, improve in teacher education, increase access to education and transform school. With this understanding, Yususf and Yusuf (2009) opined that information and communication technologies would assist in achieving the goals of the educational reforms act of 2007 which were listed as; improving the quality of instruction in schools, providing improved learning environment, the need to provide more access to education, and providing the students with knowledge and skills amongst others through adequate planning and proper integration. They further buttress that ICT provides access to basic and quality education for children with special needs.

This paper is therefore aimed at assessing the perception of teachers, parents and pupils on information technology as a medium of teaching/learning in the era of covid-19 pandemic with a view to providing relevant information to assist stakeholders in policy formulation for all levels of education in Nigerian schools. The performance of the on line teaching/learning approach of EdoBest, challenges encountered and the experiences of teachers, parent and pupils were assessed.

An Overview of Primary Education in Nigeria

Primary education is generally accepted as the foundation for all levels of education, the development of literacy and numeracy, sound moulding of character and morals and the development of skills. At this level of education, pupils are taught the rudiments of reading, writing and giving information for good moral development (Asodike & Ikpitibo, n.d). It provides a platform on which the quality of other levels of education and educational achievement are secured (Etor, Mbon & Ekanem, 2013; Asodike & Ikpitibo, n.d).

The National policy on education (2004), defines primary education as; “Primary education as referred to in this document is the education given in institutions for children aged 6 to 11 plus. Since the rest of the education system is built upon it; the primary level is the key to the success or failure of the whole system. The duration shall be six years”. The definition indicates that primary education is the key. It is the key upon which the success and the failure of a system is anchored and the foundation on which other educational levels are founded, hence, its relevance cannot be over-emphasized. To the child, Anero (2014) asserted that primary education inculcates permanent literacy, numeracy and the ability of the child to communicate effectively with others in the society, prepares the child for further advancement in education, trades and crafts of their immediate society, shapes the child’s character and develop sound morals in the child; It educates a child for effective participation in and contribution to his/her society, prepares a child for scientific and reflective thinking, and to adapt to its changing environment and develops the child’s manipulative skills function. Anero (2014) classified its relevance to the Nigerian society as Economic, political, intellectual, social and philosophical values.

The relevance of this level of education and the concern of the then Federal military government, lead to the introduction of Universal Primary Education (UPE) for the whole country in 1976 to give equal opportunity to education (Amadioha, 2011). The formulation of the National Policy on Education was to guide educational practices in Nigeria (Amadioha, 2011). It was also asserted that during this period, primary education concentrated more on the issuance of certificate rather than paying attention to skills acquisition, knowledge and experience. As a remedy to these challenges and to keep up with the objectives of the National Policy on Education, Amadioha, 2011 recommended that the appropriate authorities assesses students properly and identify their stated objectives. Opoh, Okou and Ubung (2014) identified poor infrastructural facilities, lack of political commitment, poor funding, lack of entrepreneurship education, shortage of competent teachers, poor responses to the challenges of primary education and value education as challenges which are militating against the development of primary education in Nigeria and advocated for an increased annual budgetary allocation to the sector, renovation of infrastructure, monitoring of leadership and teachers, and the use of resources by multi-stakeholder’s forum as a panacea, thus promoting national transformation and development. Asodike and Ikpitibo (n.d) also asserted that the funding of primary education was inadequate considering the level of pupil’s enrolment, and further identified other teething problems associated with primary education delivery in the country.

In September, 1999, a new scheme for primary education called the Universal Basic Education (UBE) was launched. The scheme was designed to equipped pupils with literacy, communication skill and vocational education (Asodike & Ikpitibo, n.d). The scheme was met for children under the ages of 3-5 years for Early Children Care and Development Education (ECCDE), 6-11+ years for primary school education and children aged 12-14+

years for junior secondary school education (Alonge & Enowoghomwenma, 2019) thereby providing a nine years free and compulsory education to children in primary and junior secondary schools, broken down into six years of primary (pry 1-6) and three years of junior secondary (JSS 1-3). According to Amadioha (2008), the UBE was created to realize the ideals as spelt out in the National policy on Education (1997 and 1981) and with the desire to eradicate illiteracy in Nigeria. The scheme is supervised by Universal Basic Education Commission (UBEC), a federal agency that is responsible for distributing federal intervention funds for primary and junior secondary schools and the monitoring of standards (Humphreys & Crawford 2015). At the state level, the State Universal Basic Education Board (SUBEB) manages the primary and junior secondary education.

Basic Concept of online Learning

Online learning is a wide spread phenomenon in the 21st century. It encompasses the use of internet and other related gadgets such as smart phone and computer. Through the internet, students are able to access research materials, text books, journals and other materials relevant to their study. This approach does not require the physical presence in classroom as in the case of the conventional method of leaning were all the students are physically present in the classroom. From available evidence, Bakia et al (2012) opined that most schools adopt online learning over the conventional method with the intention of improving educational outcomes, reducing costs and expanding access.

Several studies on online learning have identified benefits that are associated with it adoption. For example Arkorful and Abaidoo (2014) in reviewing literature, enumerated some advantages of this approach to learning. They include; flexibility in terms of time and place, enhanced efficacy of knowledge and qualifications, creation of opportunities for learners by the use of discussion forums, cost effectiveness, consideration of the individual's learners differences, compensating for scarcity of teachers, and allowing student to study at their own pace and speed. The study also identified lack of interaction/relation, making students to be well skilled in time management and self-willed, impairment of communication skills of learners, difficulty in controlling or regulating cheating during continuous assessments test, no physical guide in terms of explanations, interpretations and clarifications and the inadequacy of applying online learning in some discipline such as medical sciences and pharmacy amongst others as major disadvantages of e-learning.

Edo Basic Education Sector Transformation (EdoBEST)

The Edo Basic Education Sector Transformation (EdoBEST) is a brain child of Dr Joan Oviawe under the Edo State Universal Basic Education Board (SUBEB) with the support of the Edo state Governor, Mr. Godwin Nogheghase Obaseki. The program was launched in April, 2018 with the aim of developing highly skilled teaching workforce and with improved infrastructure and integrated school management systems (Oviawe et al., 2019). To achieve this, SUBEB collaborated with Bridge International Academies (Bridge) to implement teachers' development programming, build local capacity and provide teaching and learning resources to transform the state of primary education in the state from its conventional system to a technological system. According to Oviawe et al., 2019, the transformation process suffered some challenges like shortage of teachers, poor network coverage and internet connectivity, adoption of technology and problems of few classrooms. However, the initiative is believed to be successful in the areas of teachers' delivery of

lessons and motivation of pupils to learning, and the positive changes in pupils towards their academic work (Oviawe et al., 2019).

The outbreak of the coronal virus in Nigeria on the 27th of February, 2020, distorted the smooth completion of the 2nd term of 2019/2020 academic session. This led to the inclusion of E-learning in the EdoBEST transformation program. This was met to help the pupils continue their academic work without feeling the effect of the covid-19 pandemic. This enabled the teachers to teach the pupils from home without having physical contact with the pupils in compliance with the Nigeria Centre for Disease Control (NCDC) guidelines on covid-19 prevention and the stay at home policy.

EdoBEST Internet

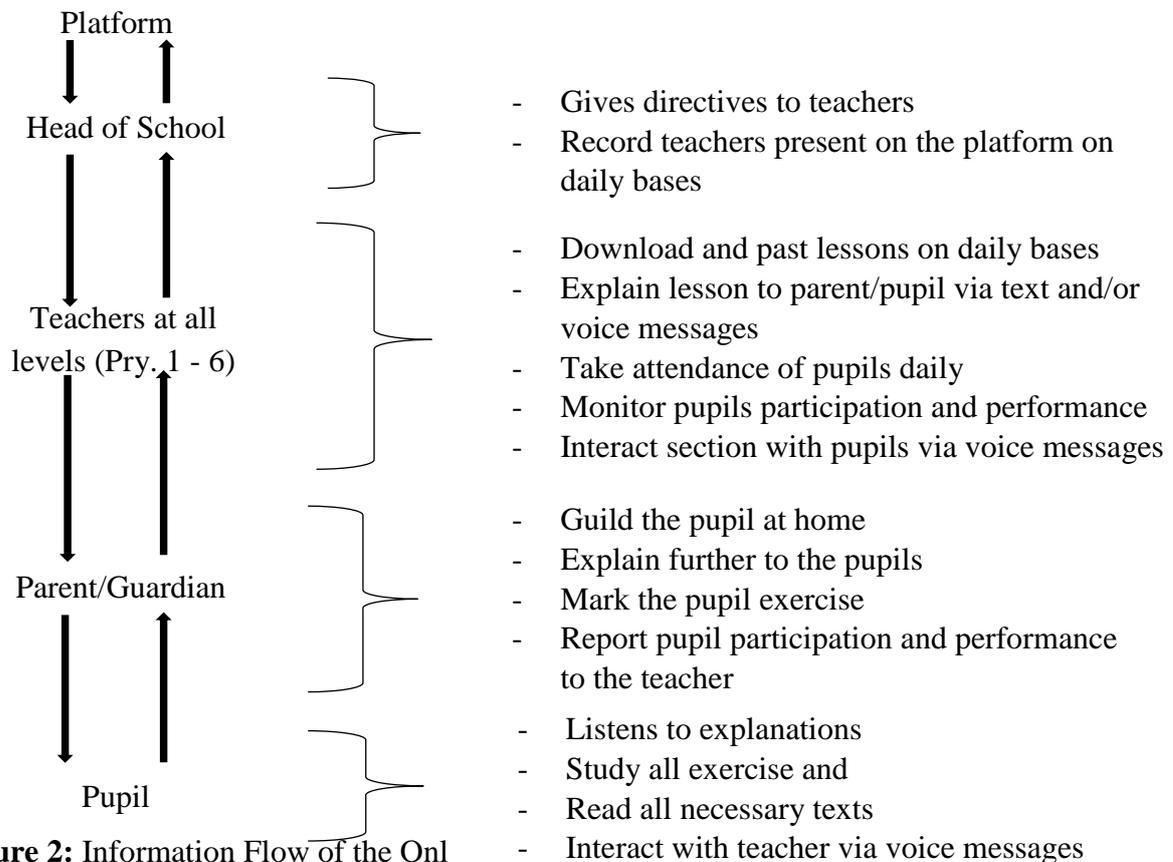


Figure 2: Information Flow of the Onl

Research Method

The study focused on teachers, parents and pupils in government public schools in Edo State as the study population. The study adopted empirical survey method using self-administered questionnaire. The population of the pupils was chosen from the higher primary classes which are primary 5 and 6 because they are more mature, able to read and understand questions presented before them, thus increasing the level of reliability on the results. Questionnaire were randomly distributed to six (6) primary schools; two primary schools from three local government areas which are Oredo, Egor and Ikpoba-Okha, out of which 60 teachers, 60 pupils and 60 parents were randomly selected. A total of 180 questionnaire were distributed out of which 176 were retrieved, representing a response rate of 97.78%.

Table 1: Breakdown of the Questionnaire Administered

Respondents	Questionnaire		
	Distribution	Retrieval	% retrieved
Teachers	60	58	96.67%
Parents	60	58	96.67%
Pupils	60	60	100.00%
Total	180	176	97.78%

The results were analysed using the descriptive statistical techniques. A five-point Likert scale ranging from 5 to 1 in descending order was adopted for questions on the benefit and challenges with the use of e-learning in primary schools in Nigeria. Responses from the Likert scale were computed for mean ratings of each factor in accordance with their level of importance as perceived by the respondents. In each computation of the Mean Rating (MR), the total number of respondents rating (TR), each attribute was used to calculate the percentage of the number of respondents associating a particular rating point to each attribute. The decision point of the 5-point Likert scale used in the study is 3.00 such that an attribute is considered as important if $MR \geq 3.00$ but rated less important if $MR < 3.00$. The TMR is the average of the mean of the teachers, parents and pupils per attribute.

Results and Discussion

Table 2: Respondents Opinion on Online Teaching/Learning

	Responses	Teachers		Parents		Pupils	
		F	P (%)	F	P (%)	F	P (%)
Did you participate in the online teaching	Yes	58	100	34	58.62	34	56.67
	No	0	0	24	41.38	26	43.33
	No response	0	0.00	0	0.00	0	0.00
	Total	58	100%	58	100%	60	100%
Where you able to follow up with your pupils/teacher?	Yes	50	86.21	32	55.17	40	66.67
	No	8	13.79	22	37.93	20	33.33
	No response	0	0.00	4	6.90	0	0.00
	Total	58	100%	58	100%	60	100%
Who explained the various subject lessons to the pupils?	Teacher	58	100	36	62.07	37	61.67
	Their parent	0	0	4	6.91	12	20.00
	Elder siblings	0	0	2	3.45	2	3.33
	No response	0	0.00	16	27.57	9	15.00
	Total	58	100%	58	100%	60	100%
If the teacher, how did you achieve that?	Through WhatsApp video call	10	17.24			3	5.00
	Through WhatsApp voice call	10	17.24			8	13.33
	Both WhatsApp video and voice call	14	24.14		Nil	13	21.67
	Through WhatsApp texts messages	2	3.45			6	10.00

	Both WhatsApp text and voice messages	22	37.93			16	26.67
	No response	0	0.00			14	23.33
	Total	58	100%	58	100%	60	100%
Did you enjoy the online teaching method?	I did	42	72.42	30	51.72	30	50.00
	I did not	8	13.79	14	24.14	4	6.67
	No response	8	13.79	14	24.14	26	43.33
	Total	58	100%	58	100%	60	100%
Do you think the online teaching/learning was effective?	Yes	28	48.28	34	58.63	31	51.67
	No	24	41.38	18	31.03	22	36.67
	No response	6	10.34	6	10.34	7	11.66
	Total	58	100%	58	100%	60	100%
How would you rate the online teaching/learning program?	Very good	18	31.03	19	32.76		
	Good	26	44.84	21	36.21		
	Poor	8	13.79	12	20.69		Nil
	Very poor	6	10.34	6	10.34		
	Total	58	100%	58	100%		
Would you advocate for the sustenance of the online teaching/learning?	Yes	24	41.38	24	41.38	23	38.33
	No	20	34.48	28	48.28	11	18.33
	No response	14	24.14	6	10.34	26	43.34
	Total	58	100%	58	100%		100%
Was there any challenge(s)?	Yes	54	93.10	38	65.52	20	33.33
	No	2	3.45	14	24.14	14	23.33
	No response	2	3.45	6	10.34	26	43.34
	Total	58	100%	58	100%		100%

Note: F = Frequency; P = Percentage, Source: Field Survey, 2020

Table 2 depicts the results of respondents on the Online Teaching/Learning approach adopted by the state government in public primary schools during the COVID-19 Era. The result revealed that 100, 58.62 and 56.67% of the teachers, parents and students participated in the online teaching and learning program. In response to whether the teachers were able to follow up with their pupils, 86.21% responded in the positive while 13.79% responded in the negative. It also revealed that 55.17% of the parents followed up with the lessons while 37.93% were not able to do so. 66.67% of the pupils were able to follow up with the lessons while 33.33% were not. This implies that the teachers, parents and pupils were able to follow up with the lessons. This may be born out of their interest for the new approach to teaching and learning.

Findings on who explained the various subject lessons to the pupils, 100% of the teachers indicated that they explained the lessons to the pupils. 62.07% of the parent

indicated that their children's teacher explained the lessons, 6.91% indicated that they explained the lessons to their children while 3.45% opined that it was their children's older siblings. The response of the pupils shows that 61.67% of them agreed that their teachers explained the lessons, 20.00% said their parents while 3.33% asserted that it was their older siblings. This implied that all the participants were actively involved in the e-learning program.

The response on how the teachers achieve the explanation process revealed that, 17.24, 17.24, 24.14, 3.45 and 37.93% of teachers asserted that they achieved it through WhatsApp video call, WhatsApp voice call, both WhatsApp video and voice call, WhatsApp texts messages and both WhatsApp text and voice messages respectively. The response of the pupils revealed that 5.00, 13.33, 21.67, 10.00 and 26.67% learnt through WhatsApp video call, WhatsApp voice call, both WhatsApp video and voice call, WhatsApp texts messages and both WhatsApp text and voice messages respectively. This implies that WhatsApp platform was very handy for the e-learning program. The teachers were able to effectively explain the lessons of all the subjects to the pupils while the pupils were able to learn effectively via the platform.

Response to whether they enjoyed the online teaching method shows that 72.42, 51.72 and 50.00% of the teachers, parents and pupils respectively indicated that they enjoyed the e-learning while 13.79, 24.14 and 6.67% of teachers, parents and pupils respectively indicated that they did not enjoy the e-learning program. The response on the effectiveness of the e-learning shows that, 48.28% of the teachers said yes while 41.38% said no. 58.63% of parent indicated yes while 31.03% indicated no. 51.67% of the pupils opined that the e-learning should continue while 36.67% opined that it should not. Their response infer that all the parties enjoyed the e-learning program and that it should continue.

The Table further showed the ranking of the e-learning program. 31.03% of the teachers opined that the program was very good, 44.84% rate it as good, 13.79% as poor while 10.34% as very poor. The parent perception indicates that 32.76% sees it as very good, 36.21% as good, 20.69% as poor and 10.34% as very poor. The overall result shows that both teachers and parents rate e-learning program as good. Response on whether there was challenges revealed that 93.10% of teachers, 65.52% of parents and 33.33% of the pupils indicated that they were faced with challenges while 3.45% of teachers, 24.14% of parents and 23.33% of pupils indicated that they were not faced with any challenges. This infers that most of the teachers, parents and pupils had challenges.

Furthermore, findings revealed that, 41.38, 31.03 and 36.67% of the teachers, parents and pupils who opined that the e-learning was not effective, attributed it to poor understanding of the teaching/learning system by the pupils, lack of interest by some parents, illiteracy of some parents, poor participation of pupils, lack of smart phones by many parent, lack of time by parents, no electricity for charging phones and lack of money by parents to buy internet data. Responses of the 41.38 and 43.33% of parents and pupils who did not participate in the e-learning attributed their reasons to lack of smart phone, no access to the WhatsApp platform, poor electricity to charge phones, non-availability of parents due to work schedule, lack of interest by some parents and because some children attends private lesson at home.

Table 3: Benefits of online teaching/learning: Teachers, Parents and Pupils perspectives

S/N	Benefit	Teachers	Parents	Pupils	TMR	OR
		MR	MR	MR		
1	Teaching and learning requires no specific meeting point	4.120	4.375	4.500	4.332	1 st
2	Teachers teach from home	4.308	4.364	4.000	4.224	2 nd
3	Strengthen the bond between parents and their children	3.846	4.120	4.400	4.122	3 rd
4	Strengthen the bond between teachers and pupils' parents	4.000	4.000	4.172	4.057	4 th
5	Strengthen the bond between teachers and pupils	3.769	3.958	4.259	3.995	5 th
6	No physical contact between teachers and students	3.762	4.208	3.800	3.923	6 th
Total Mean		3.968	4.171	4.1885	4.109	

Mean Rating (MR); Total Mean Rating (TMR); Overall Ranking (OR)

Source: Field Survey, 2020

The results presented in Table 3 shows that all the factors presented in the table are all important benefit of online teaching/Learning. The perception of the Teachers and parents shows that “Teachers teach from home, Teaching and learning requires no specific meeting point and strengthen the bond between teachers and pupils’ parents” as the three most important benefit of online teaching/Learning.

The result also shows that, pupils has their own perception to online teaching/Learning. They considered “Teaching and learning requires no specific meeting point, Strengthen the bond between parents and their children and Strengthen the bond between teachers and pupils” with mean values 4.500, 4.400 and 4.259 as the three most important benefit of online teaching/Learning. This study has shown that e-learning would make strong impact in teaching and learning as posited by Arkorful and Abaidoo (2014).

Table 4: Challenges to online teaching/learning: Teachers, Parents and Pupils perspectives

S/N	Challenges	Teachers	Parents	Pupils	TMR	OR
		MR	MR	MR		
1	Parent not available to supervise their children	4.320	4.364	4.364	4.349	1 st
2	Lack of smart phones	4.143	3.963	3.586	3.897	2 nd
3	Poor internet connectivity	4.080	3.565	3.692	3.779	3 rd
4	High cost of internet data	4.231	3.640	3.107	3.659	4 th
5	No electricity to charge phone	4.111	3.333	3.391	3.612	5 th
6	Illiterate parents	4.074	3.667	3.034	3.592	6 th
7	Lack of knowledge of internet usage	4.000	3.560	2.897	3.486	7 th
8	I don't care attitude of some parents	4.259	3.500	2.630	3.463	8 th
9	Poor power infrastructure	4.115	3.458	2.800	3.458	9 th
Total Mean		4.148	3.672	3.278	3.699	

Mean Rating (MR); Total Mean Rating (TMR); Overall Ranking (OR)

Source: Field Survey, 2020

The results in Table 4 shows that teachers and parents considered all the factors as important with mean values ranging from 4.320 to 4.000 and 4.364 to 3.333 respectively. The pupils also considered all the challenges as important with the exception of number 7 and 8 with mean values 2.630 and 2.800 respectively. The study corroborate the findings of Gilbert (2015) where it was noted that lack of reliable internet in the houses of most students is a challenge that is associated with online teaching/learning.

Conclusion

This study has presented the results of the data collected using a questionnaire. The purpose of the study was to assess the performance of the e-learning approach of EdoBest, challenges encountered by teachers, parent and pupils and their experiences in the era of Covid-19 pandemic. The results highlighted that all the participants were actively involved in the e-learning program and were able to follow up with the lessons despite the use of new teaching method and electronic gadgets. However, the study also revealed that there were challenges encountered by the participants such as illiteracy of some parents, lack of smart phones by many parent, lack of money by parents to buy internet data and poor electricity to charge phones amongst others. The study concludes that e-learning of EdoBest was successful and it was a good alternative for teaching and learning in the era of COVID-19.

Recommendations

The study recommends that

1. The State Government through the state Ministry of Education Edo state should create awareness of the importance and benefit of e-learning to the public, liaise with internet network providers to provide a special package for students and teachers for the purpose of learning at a reduced cost,
2. Provide smart phones to students and teachers at discounted rates.
3. The state government should eliminate the problem of illiteracy of parents by massive advocacy and the provision of data and smart phones to those that need them.
4. Teachers should be provided with free internet services by the government for effective monitoring and follow up on their students.

References

- Alonge, H. O. & Enowoghomonwema, D. E., (2019). Quality of Primary Education Programme Implementation in the International Christian Centre (ICC) Internally Displaced Persons Camp, Edo State. *BSUJEM*, 1(1), 195-202
- Amadioha, S. W., (2011). Primary Education in Nigeria: An instrument for Quality Control. *African Journal of Educational Research and Development*, 4(2a), 334-344. Retrieved from <https://www.researchgate.net/publication/322368815>
- Amadioha, S. W., (2008). Appraising The 9 - Year Universal Basic Education (Ube) Curriculum In Nigeria; Challenges And Prospects. *Issues on Development*. 4(4), 98-108. Retrieved from <https://www.researchgate.net/publication/322383975>

- Anero, N. (2014). Relevance and challenges of primary education to the overall development of the child and the Nigerian society. *Global Journal of Educational Research*, 13, 55-62. DOI: <http://dx.doi.org/10.4314/gjer.v13i2.1>
- Arkorful, V. & Abaidoo, N. (2014). The role of e-learning, the advantages and disadvantages of its adoption in Higher Education. *International Journal of Education and Research* 2(12)
- Asodike, J. D. & Ikpitibo, C. L., (n.d). Basic issues in primary education delivery in Nigeria. *European Scientific Journal*. 8(1), 150-164
- Aworanti, O. A., (2016). Information and Communications Technology (ICT) in Nigeria Educational Assessment System - Emerging Challenges. *Universal Journal of Educational Research*. 4(6), 1351-1356. DOI: 10.13189/ujer.2016.040612
- *Bakia, M., Shear, L., Toyama, Y. & Lasseter, A., (2012). *Understanding the implications of online learning for educational productivity*. Center for Technology in Learning. SRI International
- Basri, S. W., Alandejani, A. J. & Almadani, M. F. (2018). *ICT adoption impact on students' academic performance: Evidence from Saudi Universities*. *Education Research International*. 1-9 <https://doi.org/10.1155/2018/1240197>
- Damkor, M., Irinyang, D. J. & Haruna, M., (2015). The role of information communication technology in nigeria educational system. *International Journal of Research in Humanities and Social Studies*. 2(2), PP 64-68
- Etor, R. C., Mbon, F. U. & Ekanem, E. E., (2013). Primary education as a foundation for qualitative higher education in Nigeria. *Journal of Education and Learning*. 2(2), 115-164 doi:10.5539/jel.v2n2p155. URL: <http://dx.doi.org/10.5539/jel.v2n2p155>
- Federal Republic of Niger (2004). National Policy on Education. 4th edition (2004). Lagos: NERDC Press
- Fu, S. J. (2013). ICT in education: a critical literature review and its implications. *International Journal of Education and Development using Information and Communication Technology (IJEDICT)*, 9(1), pp. 112-125
- Gilbert, B. (2015). *Online learning revealing the benefits and challenges* Education Masters. Paper 303.
- Humphreys, S. & Crawford, L., (2015). Issues of educational access, quality, equity and impact in Nigeria: The EDOREN review of the literature on basic education. Abuja: Education Data, Research and Evaluation, Nigeria (EDOREN) initiative. Retrieved on 11/05/2020

- Olaniyan, A. D. & Obadara, E. O., (2008). A Critical Review of Management of Primary Education in Nigeria. *International Journal of African & African American Studies*. VII(1) 9-20
- Opoh, F. A., Okou, F. T. & Ubung, J. A., (2014). Improving the standard and quality of primary education in Nigeria for national development. *International Journal of Research and Reviews in Education*. 1, 1-6. www.bluepenjournals.org/ijre
- Oviawe, J., Cantrell, S., Chen, L., Buttweiler, M., Nash, S. & Nwokeyi, S., (2019). The EdoBEST Effect. Retrieved on May 11th, 2020
- Ratheeswari, k. (2018). Information Communication Technology in Education. *Journal of Applied and Advanced Research*. 3(1), Pp 45-47. <https://dx.doi.org/10.21839/jaar.2018.v3S1.169>
- Yusuf, O. M. & Yusuf, T. H., (2009). Educational reforms in Nigeria: The potentials of information and communication technology (ICT). *Educational Research and Review* 4(5), 225-230