E- Learning and the Covid-19: Issues, Challenges and Observations

[1] Akeem Adekunle ADEBESIN, [2] Olayinka Oluwaseun OLAIYA

[1]Department of Mechanical Engineering, The Federal Polytechnic, Ilaro Ogun State. [2]Department of Computer Engineering, The Federal Polytechnic Ilaro, Ogun State.

akeem.adebesin@federalpolyilaro.edu.ng; olayinka.olaiya@federalpolyilaro.edu.ng)

ABSTRACT

The outbreak of a virus induced epidemic called Covid - 19 is known to have thrown the entire globe into panic and untold hardship as it portends serious health challenge to the continuous existence of human race throughout the world. This disease which was later declared by the World Health Organization as a pandemic because it has defiled all known treatments. It emanated from a village called Yuwan in China, its scourge spreads across the globe like a wild fire as it kills within some days. Schools were forced to closed down, businesses suffered a major setback at initial stage before each countries begins to lockdown their citizens to forestall further spread of the disease. This paper tends to x-ray the global impact of COVID 19 Pandemic on the education system in Ogun State vis-à-vis all attending issues, challenges and opportunities on the delivery of curriculum, teaching and learning methods, student -teacher ratio, contact hours and internet friendliness.

KEYWORDS: Covid 19 pandemic, classroom education, technology; virtual class.

1. INTRODUCTION

A healthy nation is a productive nation but when the health of a country's citizen is under threat, all sectors of that nation's economy are affected. Education is the main sector in Nigeria that drives and sustains the industrial and socio- economic lives of people. Education is a process or art of impacting knowledge, skill either formally or informally. It involves teaching and learning in a structured manner but the outbreak of Covid 19 pandemic truncated the world teaching and learning processes as many schools were shut down to forestall the spread of the killer disease known as Corona Virus Pandemic 2019 which ravages across the continents. According to UNESCO, every nation is expected to allocate 25% of her resources to education sector but this policy have not been met by most African countries. According to Barbara Jordan (2000) Education remains the key to both economic and political empowerment, there is no substitute for education. Education is the process of facilitating learning, or the acquisition of knowledge, skills, values, beliefs and habits. Educational methods include teaching, training, storytelling, discussion and directed research. Education frequently takes place under the guidance of educators, however learners can also educate themselves. The essence of online digital teaching is to provide the students with necessary contents and skills needed not just for today.

Teaching and learning is expected to continue shortly after the new year festivities breaks but the whole world was cut unaware by the outbreak of Covid 19 epidemic as no one prepared for this dreaded infectious disease. The first index case in Nigeria occurred in February in Lagos state and since then things began to get out of hands when prominent people got infected and died mysteriously. The upsurge in fatality rate compelled the world leaders to declare a total lockdown on their various nations hence Covid 19 epidemic became a global threat. Contact tracing of those who have Covid 19 began in order to curtail the spread, they were quarantined and isolated for two weeks under intensive care, schools, churches, mosques and other religious worship centres were closed down, markets, malls and other social/ public gathering were banned. Worse-still, the disease reaches community spread stage and regular hand washing, sanitizing, and face cover, social distancing measures were adopted. The rise in the number of covid 19 related disease in Nigeria has significantly increased the decentralization of the treatment centres in the country especially in major towns and cities. Some studies in the area of treatment revealed that more deaths were being recorded on daily basis just as the health workers were being infected by this deadly virus as this lead to abruptly closure of schools at levels of learning thus disrupting the academic calendar of various primary, secondary and tertiary

institutions thus prompting the adoption of E- learning through various platforms such as Google Classroom, Telegram, OGUNDIGI class, WhatsApp etc. Classroom on television is the immediate prospect of E- learning adopted in secondary and tertiary institutions as it was considered as the next roadmap to covid- 19 pandemic. This method of learning poses a lot of challenges and raised dust among the students, their parents and the school authority vis- a- vis the following issues. The pilot test of the online teaching program by the Ogun State Ministry of Education revealed the following problems and prospects:

1.1 Internet Connectivity

This is the most challenging among the issues as it relates to fluctuation in service delivery by the internet providers. The teeming students could not get the lectures right at their end due to signal error, poor phone visibility, and network failure or outright network time out. All these could be adduced to network provider's receivers/ antenna proximity in each student's place of abode hence internet connection may be unfriendly to its user.

1.2 Internet Subscription Cost

This refers to the cost of subscribing to gigabytes or megabytes of data for internet access bearing in mind that it increases the marginal propensity to consume of each family, it raises the cost of living as parents are subjected to constant recharge of their children's phone on regular basis so as to attend classes amid Covid 19 pandemic lockdown.

1.3 Virtual Class

This covid-19 pandemic equally eliminated physical student- teacher classroom contact, thus making it difficult for some students to comprehend the concept because they are not conversant with the use of the online mode of receiving lectures.

1.4 Students Attendance

The adoption of E- learning poses a problem in terms of students' attendance and commitment to serious learning, most students are not serious with the online teaching, some will come online to mark attendance and leave the platform. This act discourages the teacher and spell doom for the assessment of the student level of comprehension and assimilation.

1.5 Unavailability of Android phone

Online class is internet based, it requires the acquisition of android based phone so as download any of the application. A large number of students do not have access to internet phones and as a result, they are unable to partake in the scheduled online teaching.

1.6 Electricity Supply

The erratic power supply is a major constraint as most students are cut off from the online class due to flat battery while those students in the rural areas are not privileged to join because of the remoteness of their location and absence of basic infrastructural amenities like electricity, good road network, poor internet facility and lack of technical knowhow on the use of computer.

1.7 Practical Coverage

Education requires a blend of formal, informal, technical and theoretical knowledge which must be effectively harmonized and harnessed to solve societal problems but online teaching could not provide hands on practical for the students and as such the practical content of the syllabus were lacking hence absence of practical exposure and real-life experience poses a big problem.

1.8 Discipline

Discipline is an important aspect of teaching as it depicts molding student to be academically sound, upright, dedicated to studies and morally groomed but online or virtual teaching erodes the culture of character building and tutoring of secondary school students participating in the program and as such students are prone to watching pornographic videos while teaching is on- going because of distance and lack of discipline.

1.9 Inadequate Online Teachers

The outbreak of Covid 19 pandemic was sudden and it caught everybody unaware in all facets of human endeavor hence inadequacy in the number of teachers with digital teaching skills was a problem at initial stage of classroom on television program

1.9.1 Cost of Providing SmartUp App

The adoption of E learning requires the development of an android based Application by the Ogun State Ministry of Education for this special purpose so that secondary school students will be able to download the App and get linked up. This development is an additional cost to both government and the student in the wake of the harsh economic crisis posed by the pandemic.

2. Methodology

The study employed an analytical and demographic assessment of the classroom on television as organized by Ogun State Government. A structured questionnaire was administered to collect data based on sex demography, department, and student's location in government and private secondary schools in Ogun State. .A total number of 8,010 public schools and 9,365 private schools were considered with students in arts, commercial and science vis-à-vis student's sex demography. The study revealed that 54% are female and 46% are male. The downloaded raw data from the google drive were analyzed accordingly.

Table 1: Students' Participation in the 20 Local Government Area.

S/N	Local Government Area	Students' Participation	Participation by Percentage
1	Abeokuta North	1,507	9.09
2	Abeokuta South	1,926	11.63
3	Ado- Odo Ota	2,423	14.62
4	Ewekoro	242	1.46
5	Ifo	1,409	8.50
6	Ijebu East	354	2.13
7	Ijebu North	583	3.51
8	Ijebu North East	254	1.53
9	Ijebu Ode	1,580	9.53
10	Ikenne	708	4.27
11	Imeko- Afon	320	1.93
12	Ipokia	516	3.11
13	Obafemi Owode	1,455	8.78
14	Ogun Water Side	531	3.20
15	Odeda	571	3.44
16	Odogbolu	475	2.86
17	Remo North	108	0.65
18	Sagamu	817	4.93
19	Yewa North	458	2.76
20	Yewa South	329	1.98

Respondent	1	2	3	4	5	6	7	8
Strongly Agree	✓	✓	✓	_	✓	✓	✓	✓
Fairly Agree	_	_	_	✓	_	_		_
Disagree	_	_	_	_	_	_	_	_

3. Results and Discussion

Figure 1 shows the demographic participation of students in the twenty (20) local governments in Ogun state. It can be deduced that 2,423 students from secondary schools within Ado- Odo Ota axis participated fully in the Ogun Digital Class during the pandemic period while only 108 students from secondary schools within Remo local government axis listened and watched the program.

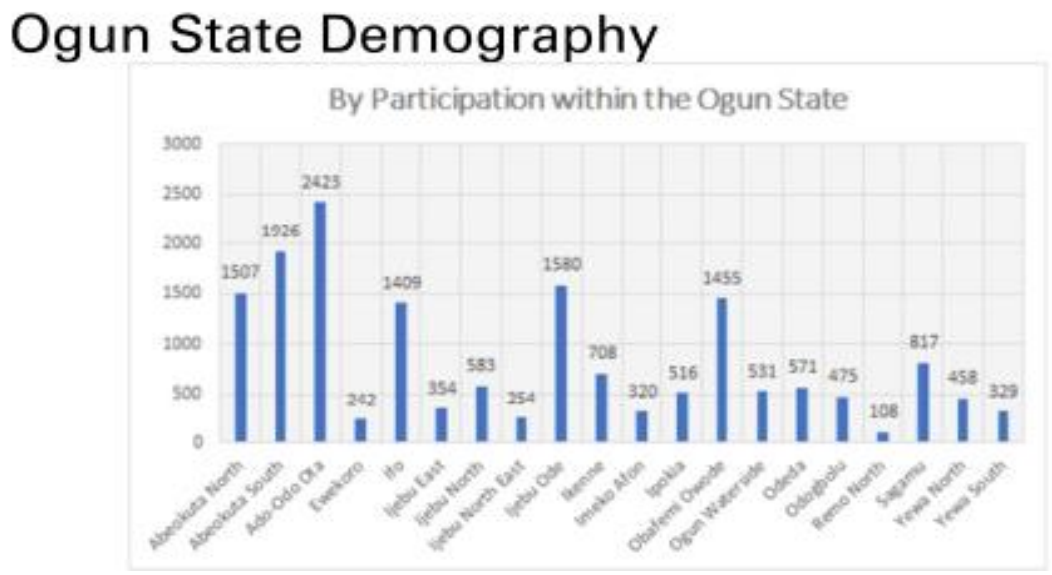

Figure 1: Demographic Participation of Students in the 20 Local Governments

Figure2 shows the various media of teaching students during Covid-19 pandemic. The chart depicted that 11,571 secondary students watched the program via You-tube channel, 13,097 students listened to the program via radio, and 6,810 students watched the program on television while 16,707 students logged in via Ogun State Government website.

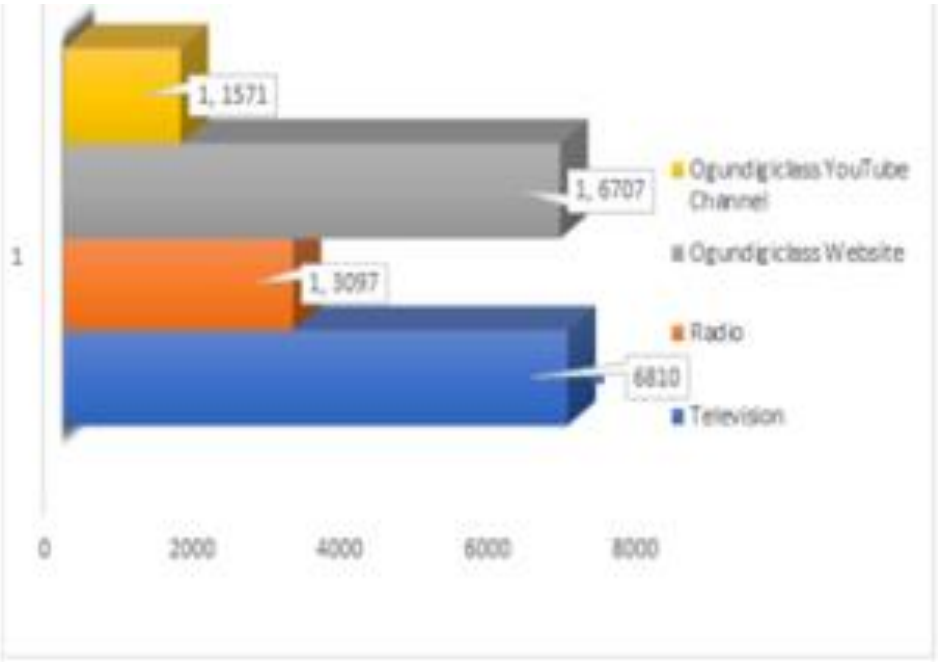

Figure 2: Media of Teaching Students during Covid-19 Pandemic

Figure 3 revealed the number of lessons watched or listened to by students in the four zones. It is evident that 10,000 students attended between 1 to 5 subjects, 2,300 students listened and watched about 6 to 10 subjects, 2,000 students joined about 11 to 20 subject classes while 800 students listened and watched 20 subjects and above.

Figure 3: Number of Lessons Watched / Listened to by students

Figure 4 depicts the category of students that watched/ listened to Online Class; the concerned students are either categorized as commercial, science or arts based on their subject combination.

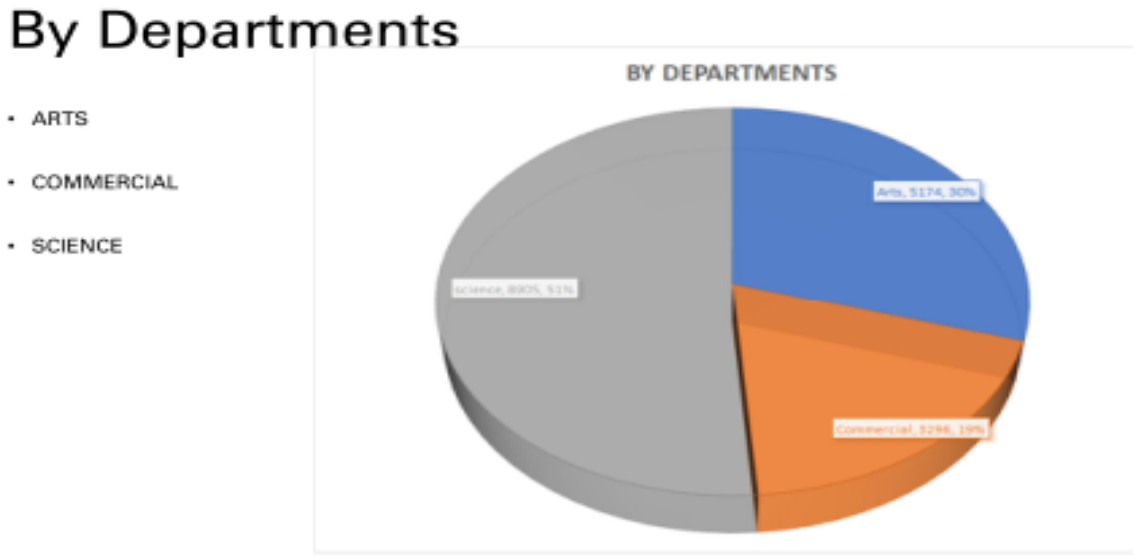

Figure 4: Category of Students that Watched/ Listened to Online Class

Figure 5 shows the marks distribution by percentage. The performance analysis chart revealed that about 1,818 students scored 100% while 5,922 students scored marks ranging from 0-39%, an indication of mass failure in the

overall student performance.

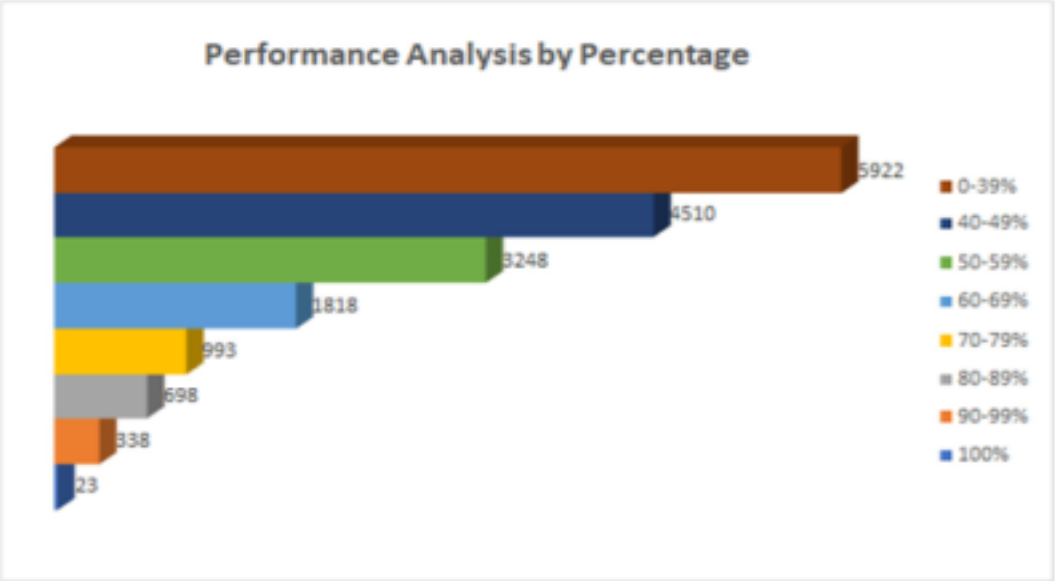

Figure 5: Assessment/ Performance Analysis by Percentage

Figure 6 summarizes the general rating of Ogun Digital Class; it is observed that commercial students tops the 5.0 rating scale with 4.17 followed by Arts student with a grade point of 4.14 while science students emerged with a grade point of 4.04. This could be attributed to lack of practical or hands on practice to support the theoretical

content of the curriculum.

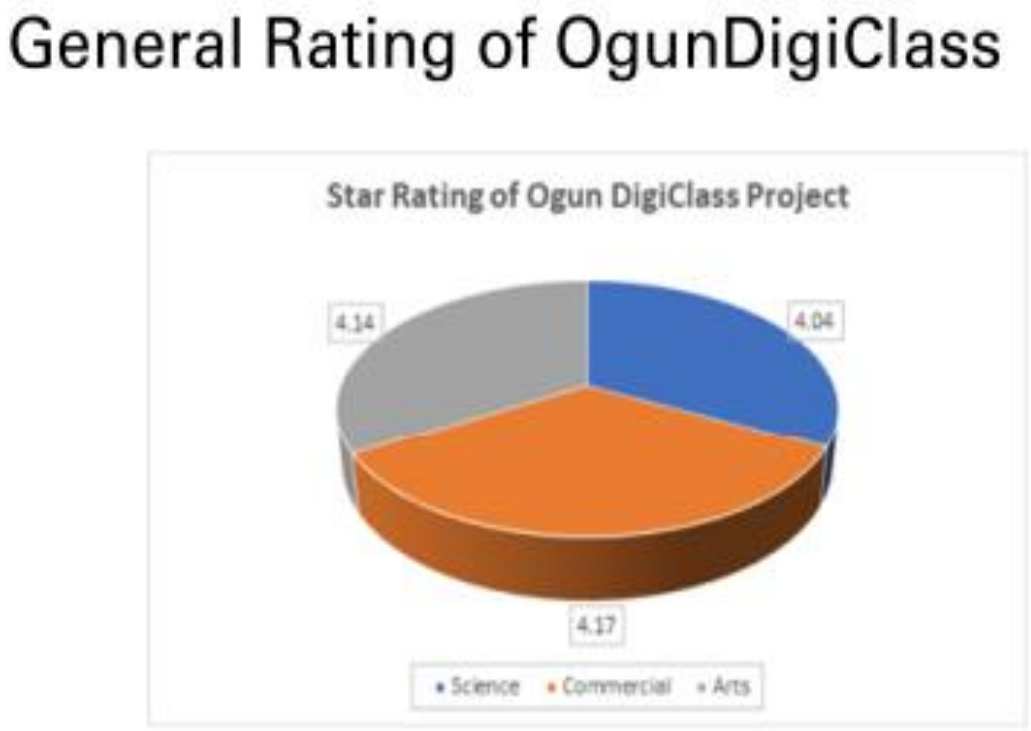

Figure 6: General Rating of Ogun Digital Class

4. Conclusion

It is concluded that the outcomes of the performance evaluation or assessment test carried out at the end of the classroom on television, radio, You- tube, WhatsApp, and other social media platforms, science students emerged with a grade point of 4.04. This could be attributed to lack of practical or hands on practice to support the theoretical content of the curriculum.

References

Barbara Jordan (2000)

UNESCO

It is expected that authors will submit carefully written and proofread material. Careful checking for spelling and grammatical errors should be performed. The number of pages of the paper should be between 6 and 10. Papers should clearly describe the background of the subject, the authors work, including the methods used, results and concluding discussion on the importance of the work. The full paper should be written in British English and SI units must be used throughout. Technical terms should be explained unless they may be considered to be known to the conference community.

Conclusion/Recommendations should state concisely the most important propositions of the paper as well as the author's view of the practical implications of the results.

5. PAPER FORMAT

The uniform appearance will assist the reader to read paper of the proceedings. It is therefore suggested to authors to use the example of this file to construct their papers. Use a format with 25 mm margins left, right, top and bottom. All text paragraphs should be single spaced, with first line intended by 10 mm. Double spacing should only be used before and after headings and subheadings as shown in this example. Position and style of headings and subheadings should follow this example. Spaces should be used to separate paragraphs. Ensure that the template header is retained.

Conclusions/Recommendations should state concisely the most important propositions of the paper as well as the author's views of the practical implications of the results.

5.1 Affiliation

Author affiliations should be provided without repetition each time for multiple authors of the same affiliation. Please keep your affiliations as succinct as possible.

5.2 Fonts

Papers should use 10-point Times New Roman font. The styles available are bold, italic and underlined. It is recommended that text in figures should not smaller than 10-point font size.

5.3 Tables and Figures

Figure Labels: Use 8 point Times New Roman for Figure labels. Use words rather than symbols or abbreviations when writing Figure axis labels to avoid confusing the reader. As an example, write the quantity "Magnetization", or "Magnetization, M", not just "M". If including units in the label, present them within parentheses. Do not label axes only with units. In the example, write "Magnetization (A/m)" or "Magnetization {A[m(1)]}", not just "A/m". Do not label axes with a ratio of quantities and units. For example, write "Temperature (K)", not "Temperature/K".

Figures and tables should be numbered consecutively. Use Arabic numerals for figures and Roman numerals for tables. Figure captions and table headings should be sufficient to explain the figure or table without needing to refer to the text. Figures and tables not cited in the text should not be presented. The following is an example for Table 1.

Table 1: Title of the Table

Table Heading	**Table Column Heading**		
	Table column subheading	***Subheading***	***Subheading***
copy	More table copy		

Tables and figures should be placed close after their first reference in the text. Figures and tables should be numbered consecutively using Arabic numerals. Table headings should be centred above the tables. Figure captions should be centred below the figures as shown in Figure 1. The source of all tables and figures must be properly stated below the tables and figures. For figures only, use Figure 1 in the text but Fig. 1 as the figure label.

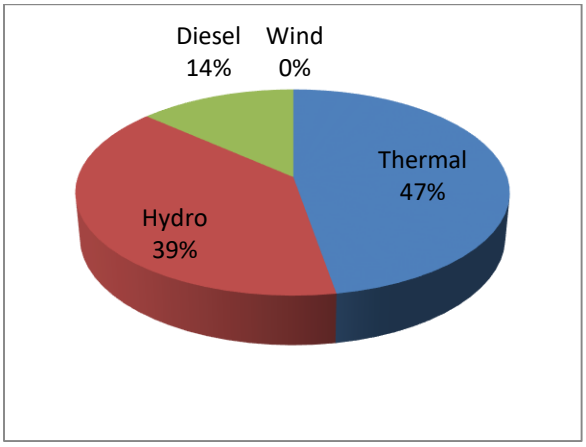

Fig. 1: Proportions of Energy Sources in Nigeria

5.4 Equations

Each equation should be presented on a separate line from the text with a blank space above and below. Equations should be clear, develop using Equation Editor and expressions used should be explained in the text. Number equations consecutively. Equation numbers, within parentheses, are to position flush right, as in (1), using a right tab stop, as shown in Eqs. (1) - (3) below. Here is one example.

In this case, the governing system of equations can be written as follows:

$$C_i(p_i) = \alpha_i + \beta_i p_i + \gamma_i p_i^2. \quad (1)$$

$$\underline{p_{gi}} \leq p_{gi} \leq \overline{p_{gi}} \quad i = 1, \ldots . n_g \quad (2)$$

$$\sum_i p_{gi} = p_D - P_L \quad (3)$$

3. ACKNOWLEDGEMENTS (OPTIONAL)

Provide a short acknowledgement on sponsorship and financial support. The contributions of other colleagues who are not included in the authorship of the paper can also be acknowledged. If no acknowledgement is necessary, this section should not appear in the paper.

This is an example of acknowledgement:

The authors gratefully acknowledge the contributions of T. Edison, G. Westinghouse, N. Tesla, A. Volta and A. Ampere to the electric power industry.

4. REFERENCING

In-text references must be properly carried out and the list of references provided according to 7th Edition of APA Style of Referencing. All references cited must be listed and vise versa.

5. FULL PAPER SUBMISSION

The full paper in MS Word format should be submitted electronically to the conference email: nsevirtualconference@gmail.com (email for the conference to be used). The presentation is mainly through PowerPoint presentation.

6. CONFERENCE PROGRAMME AND PROCEEDINGS

The full manuscripts are compiled into the conference Proceedings using DVD-ROM.

REFERENCES

Journals

Risholt, B., & Berker, T. (2013). Success for energy efficient renovation of dwellings – Learning from private homeowners. Energy Policy, 61, 1022–1030.

Kastner, I., & Stern, P. (2015). Examining the decision-making processes behind household energy investments: A review. Energy Research & Social Science, 10(3), 72–89.

Books

Clarke E.(1998). *Circuit Analysis of AC Power Systems*, vol. I. New York: Wiley, 1950, p. 81.

Young G. O. & Anton, B. G. (2001)., "Synthetic structure of industrial plastics," in *Plastics*, 2nd ed., vol. 3, J. Peters, Ed. New York: McGraw-Hill, 1964, pp. 15-64.

Chapter Contribution in a Book

Hoskins, S. P., Shyr, D., & Shyr, Y. (2017). Sample Size Calculation for Differential Expression Analysis of RNA-Seq Data. In *Frontiers of Biostatistical Methods and Applications in Clinical Oncology* (pp. 359-379), Springer, Singapore.

Papers from Conference Proceedings (Published):

Alqueres, J. L. & Praca, J. C.(2006) "The Brazilian power system and the challenge of the Amazon transmission," in *Proceedings of IEEE Power Engineering Society Transmission and Distribution Conf.*, pp. 315-320.

Web Reference

MNL. (2012, December 10). Microsoft Nigerian Limited. Retrieved 22 August 2020 from: http://www.mnl.com/subdeansrate.

Papers from Conference Proceedings (Published)

Alqueres, J. L. & Praca, J. C. (2006) "The Brazilian power system and the challenge of the Amazon transmission," in *Proc IEEE Power Engineering Society Transmission and Distribution Conf.*, pp. 315-320.

Standards

IEEE Guide for Application of Shunt Power Capacitors, IEEE Std. 1036-2010, Sep. 2010.

Patents

Brandli, G. and Dick, M. "Alternating current fed power supply," U.S. Patent 4 084 217, Nov. 4, 1978.

Unpublished Papers

Ebehard, D. and Voges, E. (1984) "Digital single sideband detection for interferometric sensors," unpublished, presented at the 2nd Int. Conf. Optical Fiber Sensors, Stuttgart, Germany.

Process Corp., Framingham, MA. "Intranets: Internet technologies deployed behind the firewall for corporate productivity," unpublished. Presented at INET96 Annu. Meeting. [Online]. Available: http://home.process.com/Intranets/wp2.htp

Technical Reports:

Reber, E. E., Mitchell, R. L. & Carter, C. J. (2003) "Oxygen absorption in the Earth's atmosphere," Aerospace Corp., Los Angeles, CA, Tech. Rep. TR-0200 (4230-46)-3, Nov. 2003.