

## The Influence of Power Irregularities on Academic Activities in Nigerian Universities: the Pre-Service Teachers Opinion

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### Abstract

The study investigated the influence of power irregularities on academic activities in Universities. The study is a survey type of descriptive research. The population consists of all undergraduate pre-service teachers in both state and Federal Universities in Lagos State Nigeria. A sample of 436 pre-service teachers was selected from six Departments in the Faculty of Education, University of Lagos using a stratified random sampling technique. A validated 30 items structured questionnaire (r value=0.91) was used in collecting data. Nine research questions guided the study. Data collected were analysed descriptively and inferentially. Results showed that pre – service teachers general opinion on the influence of power irregularities on academic activities in Nigeria Universities is high. All the independent variables made a total contribution of 99.8% to the dependent variables. Students' welfare made the highest contribution while the environmental conduciveness made the lowest contributions. Based on the results obtained some recommendations are provided.

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## **Background to the Study**

Energy is the capacity of a physical system to do work. Mbalisi and Offof (2015), Cunningham and Saigo (2001), Sodhi (2005), Owate, Nte and Nna (2005) see energy as ability to do work. Power is the rate of transferring of energy and so power and energy are used interchangeably in daily conversation. In the practical sense of it, the amount of power obtained from any mechanical system depends on the amount of energy possessed by such system. Hence, a system with high energy will generate a high power; therefore, energy is related to power. The European Commission's Research on Energy has also shown that energy is very essential to the quality of man's everyday life. It is evident across the centuries that man is totally dependent and reliant on energy for work and personal life. In fact, the use of energy cuts across all sectors. The dependence on energy is even more visible in the 21<sup>st</sup> century with the heavy use of electrical energy which is virtually applicable to all spheres of life ranging from home use, to entertainment, education, recreation and industrial use. The availability of energy is usually linked to prosperity and efficiency and a higher standard of living in every sector of the economy.

The education sector also makes use of energy in most activities. The presence of light is needed for visibility in classrooms, libraries and laboratories. With the heavy influx of the use of ICT in the educational sphere, it is imperative that there is the need for adequate power supply to meet the needs of the growing electrical infrastructure used in the educational system. In the classroom, laboratories and even for educational field activities, electrical energy is used to power various appliances that are used for instruction, learning and research. Examples of electronic instruments used in the educational sphere include microscopes, oscilloscopes, projectors, computers, microphones, public address systems, printers, scanners, fans, air conditioners, soldering irons, lathe machines and the likes used in electronics and mechanical workshops. Energy is also necessary for communication in education and to access a wide source of information through the use of the internet. The use of energy for private use has a transferred effect on education. Energy to run household appliances for the well-being and disposition of everyone and for higher level of productivity is not in abundance.

Inadequate supply of energy in Nigeria is a problem that has seemed to evade solutions by successive administrations in the past 50 years. The availability of energy leads to constant power supply. However, in the case of Nigeria, the power supply is not constant and it is barely enough to cater for the energy needs of the country (Amadi, 2015; Mbalisi & Offof, 2015; Awosope, 2014; Ologundudu, 2014; Ubi Peter Samuel & Effiom Lionel (2013); George, & Oseni 2012). As an evidence to this, Nigerians have resorted to the use of fuel powered electricity generators to cater for their energy needs (Cerny, 2013) in order to compete favourably in terms of productivity (Ekpo, 2009; Obadote, 2009; Ajanaku, 2007). These generators vary in sizes depending on the scale of the use from home and personal use to industrial use. Even with the widespread use of generators, it has been found that power supply is still epileptic and affects many sectors negatively (Guardian, 2014; Omoleke, 2011; Okafor, 2008; Kennedy-Darling, Hoyt, Murao & Ross, 2008; Okpong, 1976).

Claudius (2014) reported that electricity is the bedrock of both economic and technological development. The researcher reported the relationship between the electricity generated and the energy consumption per capital and found that what is generated is very low to what is needed for consumption.

The available review showed that power outage is a major problem in Nigeria and its effects are felt in every sector which further constitutes a major threat to the Nigerian economy. Few of such reviews are the findings of Amadi (2015) who investigated the consequences of power outages on the social – economic and educational life of rural household in the Niger Delta region. He reported that a total of 700 i.e. 76.09% of the respondents are of the opinion that power outages to a large extent pose a major challenge in the education of rural households in the Niger Delta. Only 220 i.e. 23.91% of the respondents believed that power outages do not pose a major challenge to the well-being of the people. The researcher therefore concluded that power outage constitutes a major challenge to the education of rural households in the Niger Delta as it discourages reading by students at night thereby increasing poor performances in examinations and promoting illiteracy among the populace. This is buttressed by Foley (1990), Venkataraman (1990), Barnes(1988) and Brodman (1982) all of which held that electricity promotes literacy because students can read and study when there is no natural light.

Also, Abdallah, Genevieve, Emmanuel, Duah and Justice (2016) conducted an exploratory study with the use of the generalized anxiety Disorder 7 – item scale (GAD – 7) using University students. The study showed that nearly 20% of student interviewed felt nervous, anxious or on edge almost every day due to the erratic power supply. The proportion of students determined to be classified having minimal, mild, moderate and severe anxiety due to the erratic power supply were 24.20 %, 30.70%, 22.10% and 23.10% respectively. Students were significantly more likely to be anxious if the frequency of power outage increased. This study failed to put into consideration the effects of irregularity of power on school environment, learning experience, study habits of the student and every other student and lecturer activity. It is against this background that this study investigated the effects of this poor supply of electricity on the academic activities in Nigerian Universities.

### **Statement of the Problem**

Every sector in Nigeria has experienced epileptic supply of power since time immemorial. This problem has resulted to low output in all the sectors specifically the sector of education which is the bedrock of all development. Individuals have made diverse efforts in alleviating this menace; one of such is the use of generator/ which led to the increase in price of such equipment because of the high demand as well as to the high demand for fuel to power the generator. The resultant effects of these are on Nigerians specifically the students who are faced with the challenges of academic activities in Nigerian Universities.

### **Research Questions**

The study provided answers to the following nine research questions:

1. Is there any significance influence of power irregularities on students' academic activities?
2. Is there any significant effect of power irregularities on lecturers' academic activities?
3. Is there any significant influence of power irregularities on environmental factors?
4. Is there any significant influence of power irregularities on result processing?
5. Is there any significant influence of power irregularities on students' study habits?
6. Is there any significant influence of power irregularities on students' learning experiences?

7. What are the joint effects of power outage on the variables of academic activities?
8. What is the general opinion of the respondents on the influence of power irregularities on academic activities in Universities?
9. Is there any significant difference in the opinion of male and female respondents on the influence of power irregularities on University activities?

### Methodology

The study was a survey type of descriptive research design. A questionnaire of 30 items structured around six sub headings namely: Students' activities, lecturers' activities, production and release of results, environmental influences, study habit and students' learning experiences was used in collecting data. Each of the areas contains five items respectively given a total of 30 items . The instrument was validated and its empirical validity was ensured through a pilot test of the instrument in a neutral school and its reliability coefficient was calculated to be 0.94 using Chronbach alpha. The instrument adopted a four point scoring of strongly agree(SA) , Agree(A) ,Disagree(D) and Strongly Disagree(SD) as 4,3,2,and 1 respectively for positive items while negative items were scored vice versa. The instrument was administered to undergraduate education students (pre service teachers) in the six Departments of the Faculty of Education, University of Lagos. This constituted the sample of the study drawn from the population of all pre-service teachers from the two Universities in Lagos state.

### Presentation of Result

The result of the study is presented in line with the stated research questions.

1. Is there any significant influence of power irregularities on students' academic activities?

Table 1 provides answer to this research question

**Table 1: Paired Sample Statistics of Influence of power irregularities on students' academic activities.**

#### Paired Samples Statistics

	Mean	N	Std. Deviation	Std. Error Mean	t	df	Sig. (2-tailed)
Students' Activities	15.84	1396	2.72	0.07			
Power Irregularities	87.70	1396	13.53	0.36	227.10	1395	0.000

Table 1 shows that power irregularities affects students' academic activities since mean difference is significant.

2. Is there any significant effect of power irregularities on lecturers' academic activities?

**Table 2: Paired Sample Statistics of Influence of power irregularities on lecturers' activities.**

Paired Samples Statistics							
	Mean	N	Std. Deviation	Std. Error Mean	t	df	Sig. (2-tailed)
Lecturers' Factors Power Irregularities	14.21	1396	3.61	0.10	254.19	1395	0.000
	87.70	1396	13.53	0.36			

Table 2 shows that power irregularities affects lecturers' academic activities since mean difference is significant.

3. Is there any significant influence of power irregularities on environmental factors?

**Table 3: Paired Sample Statistics of Influence of power irregularities on environmental factors.**

Paired Samples Statistics							
	Mean	N	Std. Deviation	Std. Error Mean	t	df	Sig. (2-tailed)
Environment Power Irregularities	15.55	1396	2.60	0.07	228.89	1395	0.000
	87.70	1396	13.53	0.36			

Table 3 shows that power irregularities affects environmental factor since mean difference is significant

4. Is there any significant influence of power irregularities on result processing and release?

**Table 4: Paired Sample Statistics of influence of power irregularities on result processing and release.**

Paired Samples Statistics							
	Mean	N	Std. Deviation	Std. Error Mean	t	df	Sig. (2-tailed)
Result Issues Power Irregularities	11.51	1396	2.80	0.07	244.66	1395	0.000
	87.7	1396	13.53	0.36			

Table 4 shows that power irregularities affects processing of results since mean difference is significant

5. Is there any significant influence of power irregularities on students' study habits?

**Table 5: Paired Sample Statistics of influence of power irregularities on study habit.**

**Paired Samples Statistics**

	Mean	N	Std. Deviation	Std. Error Mean	t	df	Sig. (2-tailed)
<b>Study Habits</b>	13.44	1396	2.90	0.08			
<b>Power Irregularities</b>	87.7	1396	13.53	0.36	240.46	1395	0.000

Table 5 shows that power irregularities affects students study habits since mean difference is significant

6. Is there any significant influence of power irregularities on students' learning experiences?

**Table 6: Paired Sample Statistics of Influence of power irregularities on students' learning experiences.**

**Paired Samples Statistics**

	Mean	N	Std. Deviation	Std. Error Mean	t	df	Sig. (2-tailed)
<b>Learning Experiences</b>	17.17	1396	4.12	0.11			
<b>Power Irregularities</b>	87.7	1396	13.53	0.36	231.56	1395	0.000

Table 6 shows that power irregularities affects students' learning experiences since mean difference is significant

7. What are the joint effects of power outage on the variables of academic activities?

**Table 7. Summary of Regression Analysis of Power Outage on variables of academic activities.**

**Model Summary**

Model	R	R Square	Adjusted Square	R	Std. Error of the Estimate
1	.999 <sup>a</sup>	.998	.998		.56

Predictors: Learning Experience, Students activities, Environment, Study habits, Results issues, Lecture factors.

Table 7 shows that power irregularities made a total contribution of 99.8% on all the academic activities this implies that power irregularities affects all the variables of academic activities.

8. What is the general opinion of the respondents on the influence of power irregularities on academic activities in Universities?

**Table 8: Descriptive Statistics of respondents' opinions on influence of power irregularities on academic activities in Universities.**

Descriptive Statistics								
	N	Range	Minimum	Maximum	Mean	Std.	Std. Deviation	Variance
	Statistic	Statistic	Statistic	Statistic	Statistic	Error	Statistic	Statistic
Power Irregularities	1396	85.00	47.00	132.00	87.70	.36	13.53	183.03
Valid N	1396							

Decision: Bench mark mean=60, estimated mean=87.70 hence the general opinions is high since estimated mean > than bench mark mean otherwise it is low

9. Is there any significant difference in the opinion of male and female respondents on the influence of power irregularities on University activities?

**Table 9: Group Statistics of male and female responses on the influence of power irregularities on academic activities in Universities.**

GENDER	N	Mean	Std. Deviation	t	Df	Sig. (2-tailed)	
Power Irregularities	MALE	662	87.65	13.55	0.06	1263.00	0.95
	FEMALE	603	87.70	13.65	0.06	1250.29	0.95

Table 9 shows there is no significant difference in the opinions of male and female respondents on the influence of power irregularities on academic activities in Universities

### Summary of Findings

1. Power irregularities affect students' and lecturers' academic activities
2. Power irregularities affect processing and release of examination results.
3. Power irregularities affects students study habits and learning experiences.(Noble (2006)
4. Power irregularities made a total contribution of 99.8% of the variables of academic activities.
5. The pre-service teachers are of high opinion that power irregularities have influence on academic activities in Universities. Amandi (2015 ) education sector, Omoleke ( 2011)
6. There is no significant difference in the opinions of male and female pre-service teachers

### **Discussion of Findings**

The result of the study showed that pre-service teachers are of the opinion that power irregularities affect students' and lecturers' academic activities negatively; they cannot search the web for information, cannot do and submit assignment as at when due, cannot carry out laboratory investigation in the dark and have challenges of writing reports of experiments. The lecture rooms and lecturers' offices are extremely hot and not conducive, some students and lecturers boycott lecture hours which are seldom rescheduled for a convenient day and time. These findings are in line with the findings of Karemera (2003) who found that students' academic performance highly corresponds with learning facilities such as library and computer laboratory. The library and computer laboratory cannot be accessible and function in situation of power irregularities. Some lecturers come late to the lecture room and they don't also teach well leading to poor output. The findings of this study support the findings of Kirmani and Siddiquah (2008) who found that learning environment affects academic performance of students, implying that academic activities will be truncated by irregular power supply.

The result also showed that power outage affects students study habits and learning experiences negatively as students cannot study well, group discussions and tutorial classes are cancelled or rescheduled due to power outbreak. Most students study in the evening after normal classroom lectures when the sun had set and most often these classes do not hold because of power outage. This result is in line with the findings of Noble (2006) who reported that students' performance is highly correlated with study habit and learning experiences. The moment power outage prevents students from studying well, their learning experiences will be poor and the resultant effect is poor performance.

Power irregularities made a total contribution of 99.8% of the variables of academic activities. The pre-service teachers are of high opinion that power irregularities have influence on academic activities in Universities. This mean that power outage paralyses academic activities in the University; as the library staff perform skeletal work, internet facilities are totally down; assignments and project reports cannot be written and submitted, laboratories, classrooms, departmental and lecturers' offices are not conducive for academic activities. These findings are corroborated by the findings of Amadi (2015) and Omoleke (2011) who found that power outage affects educational sector negatively and retards national development of a nation.

### **Recommendations**

The following recommendations are suggested

1. The Federal government of Nigeria should wake up from slumber to find a practical solution to the power outage in Nigeria with the adoption of the provision of financial support to the PHCN to establish a domestic electrical engineering industry to combat obsolete equipment rather than relying absolutely on external technology. Probably, this will bring improvement in the generation, transmission and distribution of electricity to consumers. This aligns with the recommendation of Iweribor (1994).

- Iweriebor O (1994). *Tell Magazine*, June Edition, 18.
- Kirmani, N. S. & Siddiquah, A. (2008). *Identification and analysis of factors affecting students achievement in higher education*. 2nd International Conference on assessing quality in higher education.
- Kennedy-Darling, J.; Hoyt, H.; Murao, K. & Ross, A. (2008). *The energy crisis of Nigeria: An overview and implications for the future*. Unpublished Manuscript.
- Mbalisi, .O.F & Offor, B.O. (2015). Energy crisis and its effects on national development: The need for environmental education in Nigeria. 3(1). 22 – 37. *British Journal of Education, European Centre for Research Training and Development UK*.
- Noble, J. P., Roberts, W. L. & Sawyer, R. L. (2006). *Student achievement, behavior, perceptions, and other factors affecting act scores*'. ACT Research Report Series 2006 - 1.
- Obadote, D.J. (2009) *Energy crisis in Nigeria: Technical issues and solutions*. A paper presented at the Power Sector prayer Conference from June 25-27, 2009.
- Okafor, E.E. (2008). Development crisis of power supply and implications for industrial sector in Nigeria, *Stud Tribes Tribals*, 6(2), 83-92
- Ologundudu, .M.M. (2014). The epileptic nature of electricity supply and its consequences of industrial and economic performance in Nigeria. *Global journal of researches in engineering: General engineering*, 14(4). *Global Journals Inc. (USA)*.
- Omoleke I, .I (2011). Management of electricity generation and supply in Africa: The Nigerian experience. *Journal of Public Administration and Policy Research*. 3 (10), pp.266-277, December 2011
- Owate, I. S Nte, F. U & Nna, J. (2005). *Energy resources and environmental crisis*. Port Harcourt: Nigeria: Pearl Publishers.
- Sodhi, G.S. (2005). *Fundamental concepts of environmental chemistry (second edition)*. India: New Delhi, Narosa Publishing House.
- Ukpong, I. I. (1976). An Analysis of the causes of power shortage in Nigeria. *Nigerian Journal of Economic and Social Studies*, 18, 34-49.
- Ubi, A. & Effiong, O. (2013). The dynamic analysis of electricity supply and economic development: Lessons from Nigeria. *Journal of Sustainable Society*. 2,(1), 2013, 1-11
- Venkataraman, K. (1990). *Rural electrification in the Asian and Pacific Region*. In Power system in Asia and the Pacific, with Emphasis on Rural Electrification, ed. Economic and social commission for Asia and the Pacific, 310-32. New York: United Nations.

2. University Management should device alternating sources of generating energy so as to ensure constant supply of power in the University community for academic and other activities.
3. There should be constant supply of power in the computing rooms, laboratories, library, lecture rooms, Lecturers' offices and students' hostels in addition to wireless internet services so that information can easily be accessed, assignment can be submitted, project and experimental reports can be written. This can be ensured with standby generator in every Faculty and hostel.

### References

- Abdullah, .I, Genevieve, .C.A., Emmanuel, .A., Duah, D. & Justice, .N. (2016). Erratic electricity supply (Dumsor) and anxiety disorder among university students in Ghana: a cross sectional study. *International Journal of Mental Health System*.10 (17).
- Ajanaku, L. (2007). *Battling with Darkness*, Tell, May, 28-31
- Amandi, H.N. (2015). Impact of power outages on developing countries: Evidence from rural households in Niger Delta, Nigeria. *Journal of Energy Technologies and Policy*.5(3).
- Awosope, C.A (2014). Nigeria electricity industry: Issues, challenges & solution. Covenant University 38<sup>th</sup> public lecture. 3(2). Covenant University Press. Ota.Ogun state. Nigeria.
- Barnes, D. F. (1988). *Electric Power for Rural Growth: How Electricity Affects Rural Life in Developing Countries*. Boulder: Westview Press.
- Brodman, J. (1982). *Rural electrification and the commercial sector in Indonesia*. Discussion Paper D-73L, Resources for the Future, Washington, DC.
- Cerny, M. (2013). *Economic and Social Costs of Power Outages: The Case of Pakistan*. Charles University in Prague.
- Cunningham, W.P. & Saigo, B.W (2001). *Environmental science: A global concern (6<sup>th</sup> edition)*. New York, USA: McGraw Hill.
- Ekpo, A. H. (2009). *The global economic crisis and the crises in the Nigerian economy*. Presidential Address to the 50th Conference of the Nigerian Economic Society, September. Abuja: Nigeria.
- Foley, G. (1990). *Electricity for rural people*. London: Panos Institute.
- George, E.O & Oseni, J.E(2012). The relationship between electricity power and unemployment rates in Nigeria. *Journal of sustainable society* 2(1), 10-19.
- Guardian Newspaper (2014). See Nigeria as non-oil country, Okonjo-Iwela urges Nigerians. *The Guardian* 31 (13,129),6