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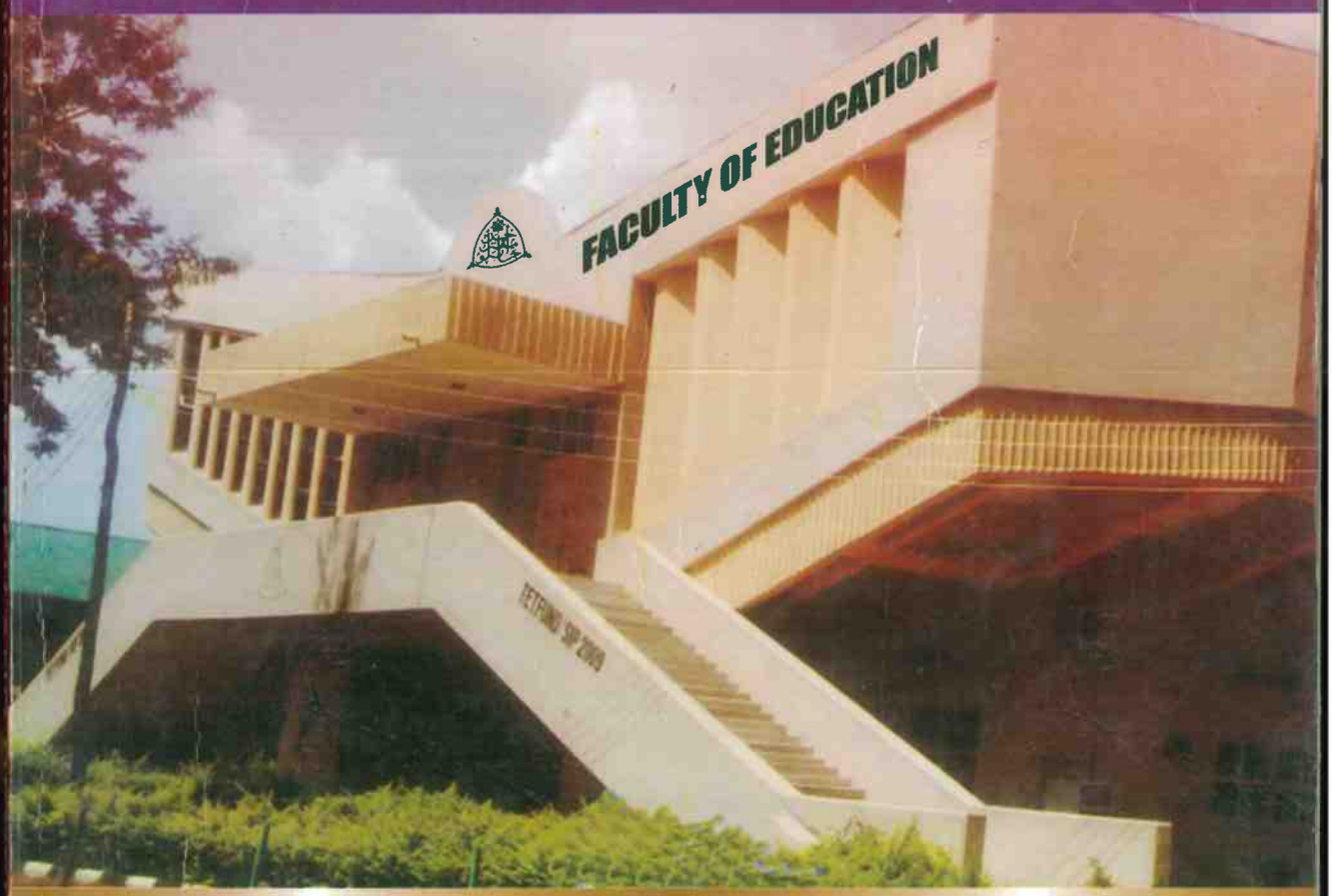

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EFFECTIVE UTILISATION OF POLYTECHNICS LECTURERS IN NORTH-CENTRAL GEO-P0LITICAL ZONE, NIGERIA

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Abstract

The paper examined the relationship between lecturer utilisation and effectiveness of polytechnics in North-central Zone, Nigeria. The study was a descriptive survey of correlation type. The population for the study comprised 2,617 lecturers in the 12 polytechnics in North-central Nigeria. A stratified sampling technique was used to select 1,680 lecturers; representing 64.10% of the 2,617 lecturers in the studied area. The research instruments used were researcher designed questionnaire and proforma.Three research questions were raised and a working hypothesis were formulated to guide the study. Data collected were analysed using descriptive statistics of percentages, mean and standard deviation and Pearson Product Moment Statistics were used to test the hypothesis at 0.05 level of significance. The findings of the study revealed that lecturers of the polytechnic in North-central Nigeria were grossly over utilised under the prevailing academic programmes and students' enrolment (55.7% of lecturer respondents handled above the maximum 18 and 16 students for Science and technology-based diploma and management / arts-based diploma, respectively). Based on the findings, the recommendations included: the NBTE should provide strict monitoring and supervision of institutions to ensure that enrolment are based on lecturer availability to avoid over utilisation of the available lecturers and learning resources to produce, and the school management through their respective owners (federal and state government, private proprietors) should employ more lecturers in the polytechnics of North-central Nigeria.

Keywords: Lecturer utilisation, lecturer demand, supply, effectiveness

Introduction

The importance of technical education and technology for sustainable development cannot be overemphasised. This is because, no nation can dream of development without first assessing its technological potentials; hence, the need to produce well qualified technical manpower who will fit into the different areas that require the skills of highly qualified specialist in sciences and technology. It was believed that technical education would provide the technical knowledge and vocational skills necessary for agricultural, industrial, commercial and economic development through the provision of well trained specialist and flexible generalist in science and technology (FME, 2004).

The Nigerian government on realisation of the importance of technical education to national development established the National Board for Technical Education (NBTE) in 1977 to oversee and control the establishment of technical colleges and indeed, the polytechnics. Ever since the establishment of the NBTE, there has been a phenomenal expansion in technical institutions in Nigeria, from historically one technical college in 1948 (Yaba College of

Technology) to 74 polytechnics, with various programmes for both the National Diploma and Higher National Diploma students. In addition, there are 27 monotechnics, 36 colleges of agriculture, 50 colleges of health technology and 132 technical colleges (NBTE, 2012). Enrollment into the polytechnics has also witnessed a significant growth. For example, polytechnic enrollment has risen from 362,408 in 2008/2009 to 399,545 in 2010/2011 and to 462,644 in 2012/2013 (NBTE, 2013). There is no gain saying, therefore, that enrollment expansion without adequate and sustainable human and material resources would definitely fail to produce the desired results. In line with the discussions on enrollment growth in the Nigerian polytechnics of which different studies and researches have identified that, though there are increases in students' enrollment in the polytechnics, there is shortage of lecturers who will teach these students population (Adebile, 2000; Adeyemi and Uko-Aviomoh, 2004). As at 2010/2011 the actual teaching staff in the polytechnics in North-central, Nigeria was 2,504; student enrolment was 41,891 with an average teacher: student ratio 1:17, given a short fall of 987 teachers on the ideal average of 1:12 teacher: student ratio (NBTE, 2013). This situation could definitely affect the quality of teaching delivery and in the end affect the quality of middle level manpower produced in the polytechnics and consequently the nation's technological development.

Utilisation of Lecturers

Lecturers' utilisation has been viewed over time by different writers and researcher to be central to school effectiveness. Ali (2004) is of the notion that, the nature of teacher utilisation can be discussed along three basic perspectives. The first being the determination of what teachers are expected to do as indicated by their employers versus what they actually find themselves doing in the school/classroom. The second is the determination of teachers' actual workload vis-a-vis whether it is too heavy or too light. The third is the willingness or desire of the teachers to utilise their skills for teaching effectively and efficiently.

NBTE (1981) teacher:student ratios recommended for the monotechnics and polytechnics are:

- 1:18 for technological-based disciplines and
- 1:16 for management and art disciplines: This gives a 1:12 average ratio.

Today, there is a phenomenal rise in student enrollment at all levels of education, which from observation could not be matched by the growth in the number of lecturers (Fabiyi and Uzoka, 2012; Adeyemi and Uko-Aviomoh, 2004; UNESCO, 2000; and Omoregie and Hartnett, 1995).

Table 1: Imbalance between Demand for, and Supply of Lecturers in Polytechnics of the North-Central Nigeria between 2006 and 2011

Year	Student enrolment (N.D &HND)	demand for teaching staff based on average teacher/student ratio of 1:12	supply of teaching staff	Ideal / actual difference (Short fall)
2005/06	35933	2995	1305	1690
2006/07	33579	3491	1427	2064
2007/08	34336	2861	1719	1142
2008/09	28565	2380	1892	488
2009/10	31736	2645	2103	542
2010/11	41891	3491	2504	987
Total	206,040	17,863	10,950	6,913

Source: calculated from available data collected from NBTE, 2005 - 2011
Note: All figures in column 3 are approximated to the nearest whole number

Table 1 reveals the level of imbalance between the demand for, and supply of lecturers in the polytechnics in North-central Nigeria.

Organisational Effectiveness

Effective institution or organisation is synonymous with "good" institution.The staff of the school, especially the teaching staff determines to a great extent the level of effectiveness in the school system. Different authors and researchers identified goal achievement as a direct measure of school effectiveness. For instance, Ayoku (2005) described effectiveness as the degree to which organisations attain both short and long-term goals. In relating this to school situation, Ayoku maintained that effectiveness refers to task accomplishment and the degree to which a teacher carries out the assigned duties of teaching and learning. Ibitoye (2008) described school effectiveness as the function of bringing about the achievement of a measurable goal of the school system.

Different empirical research relating to effectiveness, revealed a significant relationship among different variables of school mapping, physical resources, school plant utilisation, maintenance, etc. and academic performance /school effectiveness (Oke, 1997; Ayoku, 2005; Oparah, 2007; Ibitoye, 2008; Ogundele, 2007; Tijani, 2004; Olawoyin, 2000; Tijani, 2010 etc).

Purpose of the Study

The following are the purposes of this study:

(i) Identify the availability of lecturers in the polytechnics in North- central Nigeria.

(ii) Examine the level of lecturer utilisation under the prevailing academic programmes and student enrolment in the polytechnics in North-central Nigeria.

(iii) Investigate the trend of student academic performance in the polytechnics in North-central Nigeria (2007-2011).
(iv) Determine the relationship between prescribed lecturer/student ratio and organisational effectiveness in polytechnics in North-central Nigeria.

Research Questions

In line with the variables of this paper, the following research questions were raised to guide the study:

(i) What is the trend of lecturer availability in the polytechnics in the North-central Nigeria?
(ii) What is the level of lecturer utilisation under the prevailing academic programmes and student enrolment in the areas of teaching in the polytechnics in North-central Nigeria?
(iii) What is the trend of student academic performance in the polytechnics in the North-central Nigeria from 2007 to 2011?
(iv) What is the relationship between prescribed lecturer/student ratio and organisational effectiveness of polytechnics in North-central Nigeria?

Working Hypothesis

H_oThere is no significant relationship between the prescribed lecturer/student ratio and organisational effectiveness of polytechnics in North-central Nigeria.

Methodology

This paper is a descriptive survey of the correlation type. The population for the study comprises the 2,617 teaching staff in the 12 polytechnics in North-central Zone, Nigeria (i.e. 4 federal polytechnics, 6 state polytechnics, and 2 private polytechnics) as at December 2013. Random sampling technique was used to select 1,680 teachers from the 2,617 teaching staff in the polytechnics in North-central Nigeria; representing 64.10% of the entire teacher population in the area of study.

The research instruments used in this study consist of a researcher-designed questionnaire and two sets of proforma. The questionnaire was tagged: "Teacher Utilisation and Organisational Effectiveness Questionnaire" (TUOEQ) and the Proformas were tagged: "Students' Enrolment Determination Proforma" (SEDP) and Student Academic Performance Proforma (SAPP) were used to collect data on student enrollment into the polytechnics between 2007 and 2011, and also student graduating results between 2007 and 2012. Both the validity and reliability of the instrument used were appropriately ascertained.

The data collected from the respondents were analysed using descriptive statistics. The research questions raised were answered using percentages, mean and standard deviation. Hence, mean ranges from 1.00-2.54 (low); 2.55-3.54 (average); 3.55-4.54 (high); 4.55-5.00 (very high).

Results

RQ1 What is the trend of teacher supply in the polytechnics in North-central Nigeria?

The result of the trend of teacher supply in the polytechnics in North-central Nigeria in shown in Table 2.

Table 2: Trend of Lecturer Availability to Polytechnics of North-Central Nigeria between 2006 and 2011

Year	Student enrolment N.D &HND)	Actual teaching staff	Ideal/Expected supply based onRatio 1:12	Shortfall
2005/06	35,933	1,305	2,995	1,690
2006/07	33,579	1,427	3,491	2,064
2007/08	34,336	1,719	2.861	1,142
2008/09	28,565	1,892	2,380	488
2009/10	31,736	2,103	2,645	542
2010/11	41.891	2,504	3,491	987
Total	206,040	17,863	10,950	6,913

Source: NBTE (2012) and Fieldwork

LQ2 What is the level of lecturer utilisation under the prevailing academic programmes and student enrolment in the areas of teaching in the polytechnics in North-central Nigeria?

The result of the level of lecturer utilisation in the polytechnics of North-central Nigeria is shown in Tables 3, 4 and 5.

Table 3: The Level of Lecturer Utilisation based on the Lecture Hours per Week in the Polytechnic in North–Central State, Nigeria

S/N	Items	Responses	Percentages	Comment
1	Less than 4hours	-	-	
2	4-8hours	80	5	Ideal
3	Above 8hours	1522	95	Over utilisation
	Total Respondent	1602	100	

NBTE Benchmark for lecture hour per week is 6 to 8hrs per week

Table 4: The Level of Lecturer Utilisation-based on the Number of Students Handled in a Class at a Time in the Polytechnics in North-Central State, Nigeria

S/N	Items	Responses	Percentages	Comment
1	Less than 10 students	-	-	
2	11-20 students	128	8	Ideal
3	21-50 student	581	36.8	Over utilisation
4	Above 51 Students	893	55.7	Over utilisation
5	Total respondents	1602	100	

Source: Fieldwork

NBTE Benchmark for number of students per class 1:18 for science and technology-based diploma programme and 1:16 for management and art-based diploma programme

Table 5: Level of Lecturer Utilisation based on Students' Projects Supervised per Session in the Polytechnics in Nigeria

S/N	Item (Average overtime)	Responses	Percentages	Comment
1	5-10 students	126	7.90%	Ideal
2	11-15 students	583	36.40%	Over utilisasion
3	Above 15 students	893	55.70%	Over utilisation
	Total respondents	1602	100%	

Source: Fieldwork

NBTE Benchmark for project supervision 1:5 for science and technology based diploma programme and 1:8 students for management and art-based diploma programme

LQ3 What is the trend of student academic performance in the polytechnics in North-central Nigeria from 2007 to 2011?

The result of the trend of academic performance in the polytechnics of North-central Nigeria from 2007 to 2011 is shown in Table 6.

Table 6: Summary of Passes of the Student Out-turn in the Polytechnics in North-central Nigeria from 2007 to 2011

Level of pass	07/08 (%)	08/09(%)	09/10(%)	10/11(%)
Distinction	63 (0.12)	71(0.22)	108(0.36)	96(0.34)
Upper credit	941(3.19)	1013(3.16)	2252(7.43)	2302(8.07)
Lower credit	28,102(95.2)	29,002(90.38)	25,295(83.51)	23,013(80.7)
Pass	416(1.41)	2011(6.26)	2630(8.7)	3105(10.89)
Total out-turn	29,522(100)	32,097(100)	30,285(100)	28,516(100)

Source: NBTE (2012) and Fieldwork

Table 6 shows the trends of students' out-turn (graduation) from the polytechnics in North-central Nigeria. Lower credit level passes constitute the largest group among four levels of passes (80.7% - 95.2%) for the years under review.

Hypothesis Testing

H_o: There is no significant relationship between prescribed lecturer/student ratio and organisation effectiveness of polytechnics in North-central Nigeria.

The results of data analysis to test the hypothesis are shown in Table 7.

Table 7: Prescribed Teacher/Student Ratio(PTSR) and Organisational Effectiveness(OE)

Variable	N	X	SD	df	Cal r-value	p-value	Decision
PTSR	1602	2.43	1.60				
				1600	0.765	0.000	H_o
Rejected	1602	2.86	1.47				
OE							

Note: P<0.05 H_o Rejected

Table 7 shows that the p-value (0.000) is less than the significance level (0.05) at 1600 degrees of freedom. Therefore, the null hypothesis, which states that there is no significant relationship between prescribed teacher/student ratio and organisationaleffectiveness is rejected.

Conclusion

Based on the findings of this study, which is a product of data collected and analysed with the results obtained, the following conclusions were drawn:

i. Lecturer availability in the polytechnics in North-central Nigeria is not enough considering the prevailing academic programmes and students' enrolment.
ii. Lecturers in the polytechnics in North-central Nigeria are being grossly over utilised under the prevailing academic programmes and students' enrolment.
iii. The greater percentage of graduates of polytechnics in North-central Nigeria come out with lower credit pass (Average pass level)
iv. Utilisation of lecturers as prescribed by NBTE in the polytechnics in North-central Nigeria has high positive relationship on organisational effectiveness.

Recommendations

Based on the findings of this study, the following recommendations are made that:

(i) Adequate availability of lecturers to the polytechnics to teach in the different departments should be ensured by the proprietors to guarantee institutional effectiveness and in the long run contribute to national development.
(ii) The NBTE should design a control measure through strict accreditation policy to ensure that there is a match between demand for and supply of teachers to the polytechnics in North-central Nigeria.
(iii) The federal and state governments, private proprietors, and school management should ensure an all-inclusive technique in addressing the problems of lecturers over utilisation and provide enabling environment for teaching and learning to improve on the quality of graduates of polytechnics in North-central Nigeria, where lower credit level passes constitute the larger group among the four levels of passes (80.7% - 95.2%) in the period under review.

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