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PHYSICAL FACILITIES AND INTERNAL EFFICIENCY OF PUBLIC UNIVERSITIES IN EDO AND DELTA STATES

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Abstract

The purpose of the study was to investigate physical facilities and internal efficiency of public universities in Edo and Delta States. Four research questions were raised that guided the study, descriptive survey research design of the ex-post-facto type was adopted, the population comprised all the four public universities in Edo and Delta States. Two universities were sampled, purposive random sampling was used to select the programmes from faculties of humanities and sciences. The instrument was two checklist titled Physical Facilities Checklist (PFC) and Student Enrolment and Flow Checklist (SEFC). Data were analysed with the use of descriptive statistics and reconstructed cohort method was used to compute the internal efficiency. Findings revealed that physical facilities were available but not adequate therefore not in tandem with NUC's benchmark. Edo and Delta States Public Universities were internally inefficient with wastage ratio of 1:32. The study recommended that physical facilities should be made available and should be in tandem with NUC's benchmark. Also, internal efficiency of these universities should be improved and maintained because wastage ratio of 1:32 was not technically good.

Keywords: Physical facilities, Benchmark, Internal efficiency, Universities, Edo and Delta States

Introduction

University education is seen as an instrument for economic growth and development. It is an important tool for personal, economic, social, scientific and technological development of any nation. Investment in university education is often regarded by some people as a

development because it is expected to produce the required quantity and quality of human capital for economic growth and development by utilizing the available resources optimally. Physical facilities are educational input that are needed in the process of teaching and learning which serves as tools that make the educational processes more conducive and meaningful. These facilities such as modern instructional technology, provision of information communication technology that require well equipped functional computer laboratory with trained computer personnel. Lecture theatres with good medium of communication, adequate ventilation and other teaching accessories, well-furnished office, decent residential accommodation for staff and students, functional libraries, direct teaching consumables are required to attain efficiency in the university system. The availability, adequacy and effective utilization of these facilities will result in goals attainment, high internal efficiency and reduction in educational wastage. Indeed, inadequate provision of physical facilities may increase educational wastage and low internal efficiency of the universities system.

Physical facilities are needed in the process of teaching and learning which serves as tools that make the educational processes more conducive and meaningful. Qualitative and quantitative educational facilities will encourage and motivate students to learn and teachers to teach which should be proportional to student enrolment. Student enrolment is fundamental to educational system because it is used to determine the number of teaching staff required in a programme, level of funding, size of physical and instructional facilities (Owolabi, 2000). Adeyemi (2015) described student enrolment as the actual number of students that registered in a school during a session or an academic year.

Middlehurst (2008) in a study titled quality assurance implications of new forms of higher education, viewed educational facilities as all the basic materials and structures a school needs in order to function effectively and to achieve the objectives to which it was established. Zelvys (2004) observed that educational facilities include all things and services that can help to facilitate teaching and learning process in a school system. Almeida (2012) opined that educational facilities are what school managers, administrators, teachers and students harness, allocate and utilize for the smooth and efficient

management of any educational institution that will raise internal efficiency in university. In the same opinion, Babatope (2010) affirmed that the achievement of an effective, efficient teaching and learning is associated with the location of the institution, the organization and arrangement of the physical structures as well as other facilities in the school.

In addition, Owoeye and Yara (2011) in their study, school facilities and academic achievement of secondary schools, revealed that educational facilities can either be effective tools or barriers to attainment of goals and academic performance. If they are properly planned and well utilized, it will enhance academic achievement and high internal efficiency. Whereas poorly and inadequate facilities may hinder goals attainment and internal efficiency. These facilities are special and significant to students. This is very important because students need them for proper learning of their academic activities. Nwangu (2005) supported this view and stated that the quality of education that a student receives is directly related with the availability and adequacy of educational facilities and the overall atmosphere in which teaching and learning takes place.

In a related study, Nwadiani (2012) posited that educational facilities especially school building generate its own ethos to the students by its appearance, design and general environment in which it is set. It is therefore very important and can influence students attending school and indeed towards the development of education generally. Adeyemi and Adu (2012) in their study reported that the physical facilities were not adequate in correspondence to the students' enrolment. This will eventually affect the students' performance and internal efficiency of the educational system. Also, Souck and Nji (2017) in their study titled the effects of school facilities on internal efficiency, stated that educational facilities seems to play an important role in curriculum implementation within the school system and therefore, their importance should not be undervalued.

Further, Osagie (2003) reported in her study that academic production function does not take place in a vacuum as there is the need for educational facilities such as laboratories, lecture theatre halls, office and residential buildings, equipment, workshop and others, are needed in order to facilitate academic progress of the students. Also, Lyons (2012) viewed the process of learning and teaching as

complex activities that require interconnection of physical facilities, teaching resources, students' motivation and pedagogy of teaching. Indeed, if the process of teaching and learning is to be successful, educational facilities must be provided adequately and well utilized.

According to National Universities Commission (NUC) (2007), the facilities should be adequate and space for large laboratories, lecture rooms, conference and staff common rooms built according to NUC specification of 7.5m per full time equivalent and preparatory rooms with specification of 7m. In addition, in sciences all the teaching staff should be provided with adequate offices with laboratory equipment and a cubicle not less than 20 square meters. There should be a functional library equipped with current books, journals, other resource materials and subscribe to e-books and e-journals.

In the same vein, Ogunu (2002) observed that educational facilities are those physical production materials that a skilful and experienced teacher needed to achieve a high level of instructional effectiveness and efficiency that far exceeds what is possible when they are not available. These facilities could improve teaching and learning by making the teaching environment more conducive, meaningful and enhances the efficiency of the university system because they are the life line of the school. Nikky (2010) corroborated with this and stated that educational facilities are those equipment and other facilities available in the school that can help the students to be active, retain and understand all the concepts and taught in the school.

Many studies have shown that there is inadequacy of educational facilities in the school system. Kivev and Mayo (2009) in their study revealed that most schools lack adequate facilities and equipment and the available ones are overstretched thereby putting a lot of pressure on them. Akinsolu (2012) discovered that there are inadequate facilities in Nigerian schools at different levels and suggested that adequate facilities should be provided for proper learning and teaching in the school system. Hallak (1990) concluded that provision of educational facilities is a major factor that can contribute to academic achievement and internal efficiency in universities.

In a similar study, Aghenta (1993), reported that when physical facilities are not available and inadequate, it could lead to overcrowding, stress, distractions, unruly behaviour and gradual decay

of academic performance and internal efficiency. The importance of educational facilities cannot be overemphasized because they assist in the promotion of teaching, learning and research in the universities. The availability of these facilities both in quality and quantity will enhance the internal efficiency of the system. Ojerinde (2016) in his study reported that a positive relationship existed between academic performance of students in any educational system and the availability of quality and quantity of educational facilities. A university that have a well-equipped laboratories, workshop, libraries, lecture theatres and classrooms tends to have a high internal efficiency than when they are not available. Lecture theatres with good medium of communication, adequate ventilation and other teaching accessories, well-furnished office, good residential accommodation for staff and students, functional libraries, direct teaching consumables are required to attain high efficiency in the university system. The availability, adequacy and effective utilization of these facilities will result in goals attainment, high internal efficiency and reduction in educational wastage.

FRN (2016) viewed internal efficiency as low attrition, high promotion, regular attendance as well as good quality and quantity of teachers as needed in different level of the educational system. In addition, students should be able to progress from one level to another with less repetition, dropout and withdrawal.

Internal efficiency is also regarded as the relationship between input (unprocessed students) and output (graduates) of the educational system. Internal efficiency is also regarded as the relationship between input (unprocessed students) and output (graduates) of the educational system. Thus, the internal efficiency of the university system is high when all students that were admitted in an academic session are able to complete their programmes within the minimum number of years without additional years arising from carryover, repetition, dropout and withdrawal.

Longe and Durosaro (1988) opined that internal efficiency is the extent of the educational system's ability to minimize cost and reduce wastage resulting from carryover, repetition, dropout and failures. The process and procedure of how these students flow from one level to another determine the internal efficiency of the school system. It appears that physical facilities impede on the internal efficiency of the university system. It therefore, becomes necessary to examine physical

facilities and the internal efficiency of public universities in Edo and Delta States.

Statement of the problem

For universities to achieve its goals and objectives as stated in the National Policy on Education (2016), a lot of physical facilities are required. This will enhance internal efficiency of the university system. Despite the huge investment in university education by all stakeholders, the problem of some students spending extra years as a result of carry over courses, probation/repetition, dropout and withdrawals persist among the undergraduate students. What could be responsible for this scenario? Could it be the inability to provide the necessary physical facilities in relation to student enrolment? The question therefore, was what is the student enrolment between 2012/2013 to 2016/2017? What are the available facilities in Edo and Delta States public universities? Are these facilities in tandem with the benchmark minimum academic standard? To what extent are Edo and Delta States public universities internally efficient? The study therefore investigated the physical facilities and internal efficiency in Edo and Delta States public universities.

Research questions

To guide the study four (4) research questions were raised:

1. What is the student enrolment between 2012/2013 to 2016/2017 in Edo and Delta States public universities?
2. What are the physical facilities available in Edo and Delta States public universities?
3. Are these facilities in tandem with benchmark minimum academic standard of National Universities Commission?
4. To what extent are Edo and Delta States public universities internally efficient?

Purpose of the study

The main purpose of the study was an investigation of physical facilities and internal efficiency in Edo and Delta States public universities. Specifically, the study found out:

- The student enrolment between 2012/2013 to 2016/2017.

- Physical facilities available in Edo and Delta States public universities
- Whether or not the facilities available in these universities are in tandem with National Universities Commission's benchmark?
- The extent to which these universities are internally efficient

Methodology

The study is a descriptive survey research design of the ex-post-facto type was adopted. The population comprised all the four public universities in Edo and Delta States and two universities were selected as the sample. Purposive random sampling procedure was used to select the programmes from humanities and science. These programmes are Law, Medical Biochemistry, Chemical Engineering and Health, Environmental Education and Human Kinetics. The instruments used for data collection were two checklist titled Physical Facilities Checklist (PFC) and Student Enrolment Checklist (SEC).

The content validity was done by showing the instrument to two experts in Educational Planning. Reliability of the instrument was not carried out because the instrument was a checklist. The instrument was administered by the researcher and the data collected were analysed using descriptive statistics, reconstructed cohort method was used to compute the internal efficiency of the universities. Efficiency range between 1.00 -1.20 is efficient and 1.21-1.31 is inefficient was used to determine the extent of internal efficiency, while the benchmark minimum academic standard by National Universities Commission was used to determine the physical facilities available.

Data analysis

Research Question 1: What is the students' enrolment in sampled programmes between 2012/2013 to 2016/2017 academic session in Edo and Delta States Public Universities?

Table 1: Student Enrolment in Edo and Delta States Public Universities between 2012/2013-2016/2017

	2012/2013			2013/2014			2014/2015			2015/2016			2016/2017		
	M	F	Total	M	F	Total	M	F	Total	M	F	Total	M	F	Total
Chemical Engineering	162	29	191	117	20	137	115	20	135	105	18	123	100	18	118
Law	134	151	285	129	146	275	128	144	272	125	141	266	122	137	259
Medical Biochemistry	65	80	145	63	72	135	60	75	135	60	75	135			
Health, Env. Edu. and Human Kinetics	105	101	206	100	96	196	92	89	181	91	87	178			

The result from table 1 indicated that as students move to the next level, the student enrolment declined as a result of carryover, probation and withdrawals. It was observed that, in Chemical Engineering, the enrolment was one hundred and ninety-one (191), Law the enrolment was two hundred and eighty five (285). Also, enrolment in Medical Biochemistry was one hundred and forty five (145) and Health, Environmental Education and Human Kinetics the enrolment was two hundred and six (206) in 2012/2013 -2016/2017 in these universities. The total enrolment was eight hundred and twenty seven (827) during the period of study.

The data in table 1 was used further to illustrate the total student enrolment in Edo and Delta States Public Universities between 2012/2013 to 2016/2017 in a bar chart as shown in figure 1.

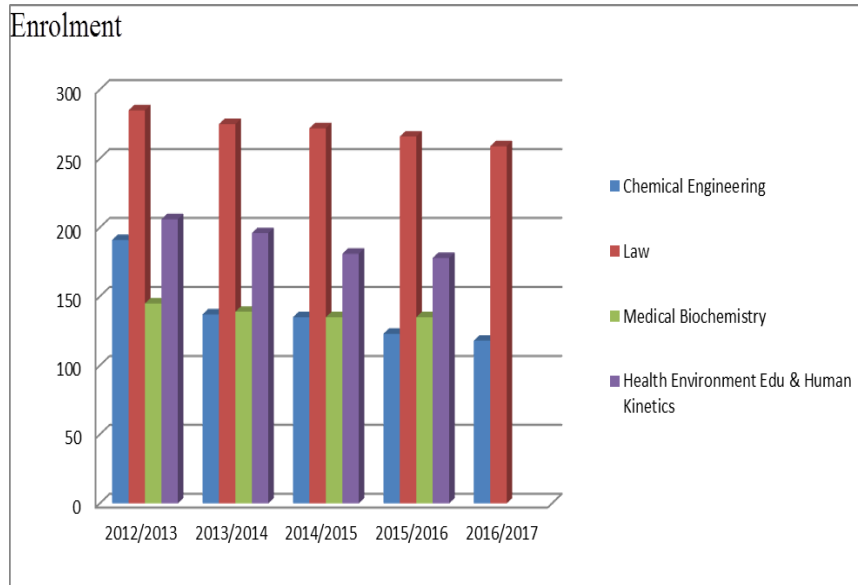


Figure:1 Students' Enrolment between 2012/2013 to 2016/2017

Research Question 2: To what extent are Edo and Delta States public universities internally efficient?

To determine the extent of internal efficiency of any university system, the actual input-output ratio and wastage ratio must be computed using the promotion, repetition, drop out and completion rates using the student's enrolment for each of the programmes in these universities. These rates were used in reconstructing a cohort flow chart for each programme to derive the actual input and output as shown in tables 2 and 3.

Table 2: Computation of Actual Input – Output Ratio for the two Universities

Programmes	Input	Output	Actual input-output ratio
Institution 1			
Health, Env. Educ. & Human Kinetics	4488	898	4.998
Medical Biochemistry	4233	997	4.245
Chemical Engineering	4929	676	7.291
Law	5166	1002	5.155
Institution 2			
Health, Env. Educ. & Human Kinetics	4196	700	5.9942
Medical Biochemistry	4905	821	5.974
Chemical Engineering	5143	930	5.530
Law	4992	875	5.713

The actual input – output ratio and ideal output – output ratio were used further to compute the wastage ratio for each programme in these universities as shown in table 3.

Table 3: Computed Wastage Ratio in Public Universities in Edo and Delta States

Programmes	Actual Input - Output ratio	Ideal Output- Output Ratio	Wastage Ratio
Institution 1			
Health, Env. Educ. & Human Kinetics	4.998	4	1.25
Medical Biochemistry	4.245	4	1.06
Chemical Engineering	7.291	5	1.45
Law	5.155	5	1.03
Institution 2			
Health, Env. Educ. & Human	5.9942	4	1.49

Kinetics

Medical	5.974	4	1.49
Biochemistry			
Chemical	5.530	5	1.11
Engineering			
Law	5.713	5	1.71
Mean			1.32

The data in table 4 revealed that the mean wastage ratio in these universities was 1:32 which implied that the wastage ratio was above the perfect value of unity (1). This signified further that in these universities the wastage ratio was above perfect value with 0.32 or 32% meaning that these universities spent 32% of additional resources to produce a graduate. Thus Edo and Delta States Public Universities were internally inefficient with a wastage ratio of 1:32.

Research Question 3: What are the physical facilities available in Edo and Delta states public universities?

The academic disciplines in this study are Law, Chemical Engineering, Medical Biochemistry and Health, Environmental Education and Human Kinetics. Mean percentage of facilities available was used to answer this question.

Table 4: Mean Percentage of Facilities Available in the Various Programmes

Programme	(%) Available
Law	98
Chemical Engineering	52
Medical Biochemistry	73
Health, Env. Edu. &	76
Human Kinetics	

The means percentage of facilities available in these academic disciplines as shown in table 4 revealed that the minimum facilities were available only in Law programme in Edo and Delta States Public Universities. However, in Chemical Engineering, Medical Biochemistry, Health, Environmental Education and Human Kinetics the minimum

facilities were not available. This indicated that physical facilities were not available as stipulated in National Universities Commission's minimum benchmark.

Research Question 4: Are these facilities in tandem with benchmark minimum academic standard of National Universities Commission?

Table 5: Mean Percentage of Facilities in the Various Programmes

Programme	(%)	Conformity
Law	98	Conformed
Chemical Engineering	52	Not conform
Medical Biochemistry	73	Not conform
Health, Eniv. Edu. & Human Kinetics	76	Not conform

The data in table 5 revealed that the facilities available in these programmes were not in tandem with the National Universities Commission's benchmark expect Law programme that had ninety eight percent (98%).

Discussion of Findings

Findings in research question one indicated that physical facilities were not available as stipulated by National Universities Commission's benchmark. The finding of this study was similar to the findings of Akinsolu (2012) who discovered that there are inadequate facilities in Nigerian schools at different levels and suggested that adequate facilities should be provided for proper learning and teaching in the school system.

Findings in research question two established that the facilities available in these programmes were not in tandem with the National Universities Commission's benchmark. This finding was not in consonance with the finding of Ebong and Efue (2005) who in their study reported that efficiency can be achieved if the available facilities are qualitative and quantitative and met the National Universities Commission benchmark.

Findings in research question three revealed that the wastage ratio in Edo and Delta States Public Universities was 1:32 for the cohort 2012/2013 to 2016/2017. This implied that there was a degree of

inefficiency in the universities as the ratio 1:32 was above the perfect value of 1.0(one) meaning that about 0.32 or 32% of additional resources was used to see a student graduate from the university during the period of study. The finding of this study was similar to the findings of Yusuf and Sofoluwe (2014) who reported a wastage ratio of 1:31.

Conclusion

Based on the findings of this study, it was concluded that physical facilities are not available and not in tandem with the National Universities Commission's bench mark minimum academic standard. Also, Edo and Delta States Public Universities were internally inefficient with a wastage ratio of 1:32.

Recommendations

From the findings of this study, the researcher recommended that physical facilities should be made available in these universities and should be in tandem with the National Universities Commission's benchmark. In addition, the level of internal efficiency should be maintained as wastage ratio of 1:32 was not technically good. The researcher further recommended that study should be conducted on any other factors that can improve the internal efficiency of the universities.

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