

UNIT COST OF EDUCATION AS A DETERMINANT OF STUDENTS' LEARNING ACHIEVEMENT IN UNIVERSITIES IN CROSS RIVER STATE OF NIGERIA.

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ABSTRACT

Unit variable cost of education vary with changes in the number of student enrolments and it is a good measure of effective cost of education. Therefore, this study explored unit cost of education as a determinant of students' learning achievement in universities in Cross River State of Nigeria. It was designed to provide a baseline information for policy-planning on education in order to enhance internal efficiency in the university system. An ex-post facto research design was adopted for the study with two research hypotheses to guide the investigation. The stratified random sampling technique was used to select ten out of seventeen faculties and all the four institutes of the two universities studied. Data was collected using researcher designed checklist titled "Unit Cost and University Students' Learning Achievement Checklist (UCUSLAC)". Multiple regression analysis was applied to statistically analyze data collected. Results obtained revealed that unit cost of both academic and non-academic staff could not determine the magnitude of students' academic achievement in the universities studied. The conclusion was that qualified staff though necessary, was not a sufficient condition to guarantee better learning outcome. It was therefore recommended that qualified university staff should be effectively engaged and utilized for greater efficiency in the university system.

Keywords: Unit cost, education, learning, achievement, universities.

Introduction

Investment in education (either private or social) depends on the proportion of resources allocated to education and the method of financing cost of education. Education investment project involves money spent as well as the alternative forgone in order to produce education, be it explicit cost (in the form of cash payment) or implicit cost (use of resources without corresponding cash payment). The importance attach to the central role that education plays in the development, results in concepts such as effectiveness and optimization in its operational development programmes (Okeke 2008 and Ekanem, 2011). Both financial analysis (maximization of returns on investment) and economic analysis (achieving the best results) are the concern for all stakeholders in education (Ndebbio, 2000). It is on this basis, that unit cost of education (cost per unit) as a unifying framework for investment decision making can provide direction to the university management performance in students' learning achievement.

Globally, formal educational system is result-evaluation oriented. As such, every learner need to achieve goals in life because of the social approval of success or punishment of failure. This means that a student that seek very high standard of performance for himself has probably internalized achievement as a personal goal. Academic achievement is the level of performance that is exhibited by individual. It has to do with mental effort and skill acquisition. According to Nnadozie (2011), it is the extent to which one is able to accomplished a task, trade, profession, training or learning. In other words, it can be conceived as the level of proficiency or knowledge demonstrated by an individual after learning has occurred (Iwundu, 2005). Ubulom (2009) identifies several variables affecting students' academic achievement in school programme or subjects to include: intelligence, creativity, attitude, emotion, social background, family background, leaning environment, learners age, sex among others. Indeed, the cornerstone of managerial decision by the university administration is and should be the ability to minimize cost and maximize educational efficiency.

Over the years, the share of public spending on university education is so large that it becomes a burden on both the government and the society. The intersectional competition for public funds and indeed the continuous increase in cost of university education is a serious concern to the university management. This calls for cost analysis in determining the level of efficiency of the educational system. Cost which is either monetary or non-monetary; include the actual amount spent and what would have been spent on the alternative forgone (Adeyemi, 1998). Therefore, it becomes critical to know the amount of resources employed and the total product (classified as production function) in order to justify the amount spent. Unit cost may be a good measure of effective cost or average cost of university students' outcome in this study.

Educational resources utilized in actual performance (expressed as cost per unit) can serve as a guide to effectively achieve educational development opportunities. Longe (2009) notes that unit cost of education is cost per unit and helps management in realizing targets. Unit cost of education identification include cost per students, per graduates, per course material, per programmes, per course, cost of education per capita among others. It is selected based on the particular purpose needed but cost per students enrolled has the widest application in university education practice. According to Akangbou (1987), the relevant facts in unit cost calculation is to know the total expenditure and the number of items on which the expenditure was incurred. It is often measured per year and is useful for diagnosing, comparing, evaluating, solving the prevailing education problems for logical and systematic decision making (Benson, 2011). Therefore, managing university education involve effective utilization of available human and material resources in education for optimization of students learning outcomes to meet the objectives of the university system.

Unit cost of education as an investment summative evaluation suppose to be systematic, objective and guidance-oriented. These qualities make unit cost arising from education investment highly predictive of future learning achievement of students (Ndebbio 2000). In this study, unit cost of staff is applicable because

staff cost carries more than 70 percent of total recurrent cost in any school system (Adeyemi, 1998; Ekanem, 2011). Therefore, existence of qualified staff with average salary can guarantee improvement in learning achievement of students. FRN (2004) confirms this assertion in the National Policy on Education that no education system can rise above the quality of its teaching staff. Research studies such as Thomas (2011), Omisade (2010) and Bajah (1979) report a significant relationship between teachers qualification and students learning achievement. Also, Oguntoye (1983) observes a positive correlation between recruitment expenditure and quality of secondary school input-output analysis on secondary education in Ogun State, Nigeria. Rational decision making by the university management can be based on unit cost of education being a continuous process which underlines good teaching and learning.

Other research findings are conflicting in this direction. Some researchers have opined that cost of education is not a valid prediction of students' learning achievement. This is because financial expenditure have failed to determine the final academic performance of students. Babalola (2001) reports that universities efforts at reducing cost per student had an insignificant effect on students' learning achievement. Alexander and Simons (2010) affirms that expenditure variables were not importance predictors of students' learning achievement. Bracey (2005) argues that United States spends more on education than any other nations, yet the money makes no difference in students' academic performance. Based on this administrative challenge, this study aims at investigating unit cost of universities in Cross River State of Nigeria by which students' evaluation can be determined on their learning achievement scores.

This study will be significant to government, educational administrators, students and parents as unit cost analysis makes the system responsive to the yearnings and aspirations of the society. The scope of the study is delimited to unit cost of university staff in the universities in Cross River State of Nigeria and the extent it can assess future students' learning achievement. Therefore, this investigation wishes to contribute to the filling of the gap and hence to bring added knowledge to literature.

Statement of the Problem

Ideally, improving quality in the university education involves increases in educational expenditure in order to enhance academic achievement (as measured by standard tests). The present situation is that massive increase in spending (private and social) should support policies that ensure decent learning conditions and opportunities for effective learning achievement of students. However, research findings are conflicting in this direction as number of studies have opined that no positive relationship exist between educational expenditure and students' academic performance. An observed issue is that continuous annual increase in expenditure especially on academic staff and non-academic staff seem not to improve the low students' learning achievement in university education. This study is therefore necessary to fill the gap by using unit cost of university education to predict the students' learning achievement. A perceived way out of this problem is the transformation in university education with internal efficiency in order to guarantee inter-related constituents of cognitive, emotional and imaginative intelligent as students' learning outcome. The question remains, can unit cost of education be an important predictor of students' learning achievement in university education? This study was designed to find the answer to this poser.

Hypotheses

The following hypotheses were tested:

1. There is no significant prediction of academic staff unit cost on students' learning achievement in the faculties/institutes in universities in Cross River State of Nigeria.
2. There is no significant prediction of non-academic staff cost on students' learning achievement in faculties/institutes in universities in Cross River State of Nigeria.

Methodology

The study adopted ex-post facto research design. This design was most appropriate because the variable being investigated cannot be controlled by the investigator as the event had accrued. It was carried out in Cross River State, one of the states in the south-south geo-political zone of Nigeria. It covered two universities located therein, one owned by the Federal Government, while the other is owned by the State Government, all in Calabar, the state capital. Ten out of seventeen faculties and all the four institutes of the universities were randomly selected using the stratified random sampling technique. All the departments in the sampled faculties and institutes were taken as samples. Further breakdown of the sample showed that six faculties and three institutes were from University of Calabar while four faculties and one institute were from Cross River State University of Technology in Calabar, Nigeria.

Data collection were carried out using checklist constructed by the researcher. This was used to collect data from the academic Planning Division of the universities, on students' enrolment, their final year performance, staff cost and service cost. The students' achievement coding was carried out by attaching weights to all classes of degree/diploma. First class/distinction had a weight of 5; second class upper/upper credit had a weight of 4; the second class lower/lower credit had a weight of 3; third class had a weight of 2 and the weight of 1 attached to a pass degree and a pass in diploma.

The instrument was face-validated by two experts in Educational Planning and Educational Measurement Evaluation. The test-retest reliability of the checklist after serving in the college of Health Technology in Calabar yielded a reliability co-efficient of 0.85, the figure indicated that the instrument was reliable for use in achieving the research objective.

The administration of the instrument was personally carried out with follow up visits to the universities' planning units to ensure accurate facts and prompt response. Inferential statistical tool using Multiple Regression Analysis was applied to analyze data generated for the study.

Data Analysis and Results

The data gathered from the checklist were subjected to Multiple Regression Analysis. The independent variables $X_1 X_2 \dots$ to the variation of dependent variable Y in a functional notation was given as $Y=f(X_1 X_2)$. The analyses were shown in the tables 1 and 2.

Hypothesis One

There is no significant prediction of academic staff unit cost on students' learning achievement in the faculties/institutes in universities in Cross River State of Nigeria.

TABLE 1

Regression analysis of the prediction of unit cost of the academic staff on students' leaning achievement.

Source of variation	Ms	df	Ss	Fc	Ft	Decision
Regression	1278.03	1	3828.62	3.64	81.07	Ho
Residual	1172.11	239	48.07			accepted
Total	2450.14	240				

* $p > 0.05$

The calculated F-ratio (Fc) of 3.64 at degree of freedom ($df=1$, $df_2 = 239$) was less than the table value (Ft) of 81.07. Hence, the null hypothesis was accepted. The finding indicated that there was no

significant prediction of academic staff unit cost on students' learning achievement. The implication of this was that effective application of unit cost of academic staff in the universities could not be used to determine the students' learning achievement in the universities.

Hypothesis Two

There is no significant prediction of non-academic staff unit cost on students' learning achievement in the faculties/institutes in universities in Cross River State of Nigeria.

TABLE 2

Regression analysis of the prediction of unit cost of non-academic staff on students' leaning achievement.

Source of variation	Ms	df	Ss	Fc	Ft	Decision
Regression	976.71	1	966.73	3.93	95.14	Ho
Residual	29561.83	239	8.39			accepted
Total	30538.54	240				

* $p > 0.05$

Result in table 2 showed that the calculated F-ratio (Fc) of 3.93 at degree of freedom ($df_1 = 1$, $df_2 = 239$) was less than the table value (Ft) of 95.14. Hence, the null hypothesis was accepted. The findings was that there was no significant prediction of the unit cost of non-academic on students' learning achievement. It was implied from the findings that the application of unit cost of non-academic staff invariably could not determine the magnitude of students' academic achievement in the universities studied.

Discussion of Results

The results of this study revealed that the unit cost of academic and non-academic staff could not be used to determine the students' learning achievement of in the universities studied. This was reflected in the non-significant predictions results of staff unit cost on student's learning achievement. These findings contradicted the concept of marginal productivity of labour which states that an additional input of labour can only be acceptable if the returns from the labour contribute to produce more than the cost. This means that the academic and non-academic staff must be worthwhile taking into account what the universities paid for the staff. To the contrary, this study showed that the earning differentials for members of staff did not base on the labour output. The outcome of this study was in consonance with studies such as Oguntoye (1983), Bajah (1979) and Thomas (2011). In these studies there were no significant positive relationship between expenditure and students' learning performance. There were possibilities that such staff cost could be influenced by the power of trade union, government policy on salary and wages, motivation among others. The higher the personnel cost, the more the unit cost. Also, staff salary structure determined staff salary and could be affected by variables such as qualification, years of experience, age, sex of staff among others.

Hypothesis one revealed that the unit cost of academic staff could not be used to determine the students' learning achievement. This means that a change in expenditure on academic staff could not lead to a proportionate change in students' learning achievement. The uniqueness of this finding was derived from the fact that ordinarily more spending in education ought to improve the quality of performance. This result was against this assumption since highly qualified staff could not enhance better learning achievement in the universities studied. This confirmed the study of Omisade (2010). This finding suggested that the quality teaching service delivery by the academic staff was poor. Explicit teaching was expected from the staff to ensure reflective thinking (probing, analyzing and discovery). Moreso, the staff were expected to adequately

cover the contents of the curriculum. Participatory method of teaching was lacking. Such effective method could have ensured that information were taught and learned, ideals were discussed and debated; and the messages were effectively shared. Utilization in terms of students enrolment, programme duplication and facilities were low as unit cost became high. Academic staff were not committed and honest in the utilization of educational resources to achieve objectives. The students therefore lacked creative attitude, ethics and values which could prepare them for sustainable livelihood. The average class size and student-teacher ratio were high as unit cost of education was low.

The analysis of hypothesis two showed that the unit cost of non-academic staff could not be used to determine the students' learning achievement. This was also in agreement with the findings of Bracey (1975) and Oguntoye (1983) that there was no relationship between non-academic staff unit cost and students' academic achievement. Expenditure on these staff notwithstanding, there was no proper management and utilization. The work assignment and allocation of responsibility was not properly carried out to ensure effective and efficient performance. Staff behaviour pattern was not effectively controlled by the university to arouse staff interest, ensure job enrichment and job enlargement in order to impact positively on the students' learning achievement. The system incurred high unit cost, while high incidence of educational wastage (dropout and repetition) was observed.

Surfice it to say that corruption has eaten deep into the fabric of workers in the university system (Ekanem, 2011). The non-academic staff failed to observe all the administrative internal control measures and apply systematic routine of the workplace as well as unsystematized, often tacit routines, to achieve ends within the universities. Therefore, they lack self-efficacy which enable them to maintain afloat the productive capacity to satisfy the students and the society.

Conclusion

On the strength of the findings of this study, it was concluded that there exist no significant prediction of the unit cost of university education on the students' learning achievement. Hence, a change in unit cost did not lead to a proportionate change in students' learning achievement. The earning potentials of the academic and non-academic staff did not base on the labour output. Qualified members of staff though essential in the system, was not a sufficient condition to guarantee better learning outcome. Lack of honesty and commitment on the part of staff in their workplace could result in low students' learning achievement despite the high staff cost incurred. Therefore, staff cost consideration without proper engagement and utilization in the teaching-learning situation, would not result in high students' learning achievement.

Recommendations

1. Highly qualified personnel should be effectively engaged and utilized to reduce educational wastage and unit cost in the university system.
2. The university work structure and the principle of unity of command should be strictly observed in the reporting chain of responsibilities. This will justify the personnel cost, high unit cost, improve professional standards and ensure students' learning achievement.
3. The university should device improved means of monitoring and supervising members of staff. This will promote the utilization of educational resources since utilization rate has an inverse relationship with unit cost of university education for learning achievement.
4. The university management should put in place programmes to fight corruption in the university system. This will improve student-teacher relations, maintain average class size, good student-teacher ratio in enlarged university size towards reduced cost per students and economics of scale.

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