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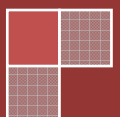
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Learning Adequacy of Nigerian Tertiary Educational System for Sustainable Built Environmental Course

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ABSTRACT

Learning is highly pivotal in every areas of life, it could be formal, informal or non-formal. Irrespective of the form of learning, it has turned out to be a veritable medium in human training. This study will concentrate on the adequacy of learning in a formal environment. The study examined some indicators that can limit learning of building course in some selected tertiary institutions which include the lecturer capacity, lecturing method and learning facilities indicators. The study adopt survey method with the aid of structured questionnaire to elicit information from the respondents on the adequacy of learning in their institutions. Findings revealed some gaps across the selected institutions learning adequacy and to address the gap, it is recommended that there should be collaboration among the institutions as to strengthen each other weakness and to encourage industries role in education funding.

Keywords: *learning, education, higher-institution, building program.*

1.0 INTRODUCTION

The concept of learning has attracted high attention from different stakeholders in the past and on till the present day. Learning as gather such momentum due to its numerous impact that is evidenced in the present world. Learning has proved to be a veritable tool that have advanced and sustained our world. Learning is not limited by human class, gender or race, it is an insatiable well from which all human drinks. Either formal, informal or non-formal learning, man has benefited immensely from learning potential. Learning has immensely contribute to advancing frontiers of knowledge. Learning effect on human mind are vivid in our world as great discoveries emerged from the learned mind. Egmond, Kuhnen and Li (2013) opines that learning is indispensable to man as it is part of life. Man's sustainability lies in his ability to learn. The concept of learning has been an issue of discourse among researchers as they tend to discover effective learning medium. In line with their findings, Nganga (2011) asserted that learning concept cannot be generalized due to its multidimensional views. Laal (2011) further affirmed that concept of learning cannot be generally defined due to differing perceptions of various cultural groups across the globe on this subject matter. Egmond, Kuhnen and Li (2013) however reveal the parallel view of learning across two different cultural background. To the western world learning is viewed as a mind-oriented tool while the East-Asia viewed it as a virtue-oriented. Mind oriented learning primarily focus on the cognitive center which as to do with mental development and alertness through knowledge acquisition. Virtue oriented learning however leap beyond the scope of the mind learning as it encompass the mental development to developing the wholeness of a man. It is evidenced from the forgoing that learning defines the uniqueness of different culture. Irrespective of the cultural view of learning, the form of learning is universal. Tissot (2004) further buttresses on the three forms of learning which

include formal, informal and non-formal learning. Formal learning is viewed as a form of learning which are obtainable within a structured and organized environment. Informal learning are form of learning which are synonymous with the acquisition of vocational skills while the non-formal learning is form of learning which evolve through daily life activities. This paper will strictly be limited to formal form of learning. In a formal environment, it is pertinent to address dependent indicators on which sound learning can be attained and they includes lecturer, learning facilities among others. The concept of learning cannot be certified without addressing the dependent variables. The various benefits of learning cannot be achieved without addressing the factors that can enhance learning effectiveness. The state of learning in our higher institution has been an issue of concern due to the gap in the expected to the observed performance in a learned individual. Such observation as generated questions as to the competency of our instructor, the state of our leaning facilities and other key factors of concern. To this end, this study will carry out an enquiry as to ascertain the state of learning in our higher institutions. It will look at the various indicators that can limit learning of building course in our institutions which include the lecturer attitude, lecturing method and lecturing facilities.

2.0 LEARNING CONCEPT

The sustainability of any education system across the globe is dependent on teaching and learning effectiveness. Teaching and learning are two inseparable twin which must flow together. Learning is what makes teaching interesting. The premium placed on learning is evidenced from researcher's efforts to making learning appealing to all. The concept of learning has evolved in different dimension from traditional learning to electronic learning (e-learning) to mobile learning (m-learning) and presently to blended learning. Nordin and Alias (2013) identify blended learning as a type which allow for integration of traditional learning (face to face learning) with online learning. Both m-learning and e-learning are both online learning mode. The changing phase of learning is aimed at arriving at the optimum learning mode to solving existing challenges in learning. However, effort towards making learning more effective cannot be ascertained without involving the learners. The best route toward solving the issues with learning in higher institutions can only be ascertained from the student's perceptions. Centra and Gaubatz (2005) opines that beyond the student's grade for the evaluation of learning in a course which is mostly limited to the course learning outcome, there are need to be holistic in the students learning indicators to be able to capture the realistic perception. Koon and Murray (1995) further reveal the general indicators that can best measure the student's perception of learning and they include; students' affinity in the subject, students reasoning ability, student's self-understanding and cooperative abilities. Measuring students learning perception by assessing their affinity for the subject matter is without doubt one of the veritable medium of measuring learning. The interest in a subject is not just a sudden occurrence as there must have been some level of interaction which are only obtainable under a friendly learning environment. Also, student's critical thinking skills are product of effective learning which has expand student's capacity to reason. Corporative abilities and understanding capacity are two values that are evidenced in a learned individual. Teaching effectiveness was also found to be a realistic indicator to measure student's perception of learning (Ryan and Harrinson, 1995; Cashin and Downey 1999). Without doubt teaching effectiveness is one of the key medium that ascertained learning capacity. Poor teaching skill can demoralize student's zeal to wanting to learn a subject of interest while a good or effective teaching can boost the morale of the individual and such a person will be highly informed. Aside the teaching effectiveness, teaching facilities and environment are also relevant factors that should be given high consideration in measuring students learning capacity. Considering a building technology course which entails a lot of practical training, student imaginative ability can be better appreciated when the necessary facilities are in place to assist in students learning. Arfwork and Asfaw (2014) affirmed that critical thinking learners will no doubt require learning facilities to aids their thinking capacity. Learning in higher field of learning is no more purely traditional as there are need to adopt modern technology as to aid students learning capacity. In the same vein learning environment also contribute to student's capacity to learn effectively as it defines the wellbeing of the mind which is the core center of learning.

2.1 HIGHER INSTITUTION OF LEARNING IN NIGERIA

Like other country around the globe, Nigeria is abound with several higher institutions and they are tasked with human training, learning and all-round development. These institutions are widely spread across the geographical zones of the country. The ownership of these various institution are categorized under three ownership structure which are State, Federal and Private. Both the federal and state are under the auspices of the government while the private ownership is controlled by an individual or group. This study will capture institutions across the identified group of institution. The three institutions that will be focused on for this study are Covenant University, Moshood

Abiola Polytechnic and Federal Polytechnic Ilaro. Covenant University is a private own university and it is located in Ogun state which is south-western region of the country. Also, Moshood Abiola Polytechnic and Federal Polytechnic Ilaro which are state and federal owned institutions respectively are both located in Ogun state south-western region of Nigeria as well. The three institution are offering technical and engineering related courses which include building program. This paper will be assessing the adequacy of building program in the identified three institution of learning in Nigeria.

3.0 RESEARCH METHODOLOGY

The study is aimed at assessing anti-sustainable indicator to the learning of building program in our higher institutions. The aim is achieved by considering the objectives which are to ascertain the adequacy of the building program from the human and facilities resources consideration and as well to compare the adequacy of the building program among selected institutions. Both primary and secondary data are sourced for to achieve the stated objectives. Primary data were collected with the aid of structured questionnaires administered to the students in the selected institutions which are Covenant University, Moshood Abiola Polytechnic and Federal Polytechnic Ilaro. Purpose sampling technique was used in selecting the sample in other to control the response. Higher institutions students were the targeted respondents due to their learning status in the various institutions. A total of 70 questionnaires were administered to the students studying building program in the three selected institutions and each two of the institutions received twenty five questionnaires each while the last received twenty questionnaires.

The questionnaire was divided into two sections, section one examined the characteristics of the respondents, the second section assessed the anti-sustainable indicators of building program and the assessment are placed on the likert scale of 1-5 to be scored accordingly. Respondents were to score in accordance to level of agreement where; 1 = do not agree, 2 = slightly agree, 3 = neutral, 4 = agree, 5 = strongly agree. The third section addresses the strategy to developing technical education and respondents are to attest to the agreement of the factors in the following order on the likert scale; 1 = do not agree, 2 = slightly agree, 3 = neutral, 4 = agree, 5 = strongly agree.

4.0 ANALYSIS AND RESULT

4.1 Characteristics of the Respondents

In this section, the personal information of the respondents used for the study was analyzed using percentage. The result obtained are presented in table 1

Table 1 shows the summary of the demographic characteristics of the respondents. The male gender represents 47.1% while female gender represents 52.9%. It is evidenced from the result that there is adequate representation of both genders in the study. The age bracket, 15-20 years represents 52.9% of the total respondents which is second-to-none in the age bracket group. 30% of the respondents fall within the age bracket 21-25 years of age while the age bracket with the least respondent was 25 years and above with respondents percentage rate of 8.6%. The result shows that the respondents are well represented age wise. The respondents rate of the selected three institutions which are Covenant University, Moshood Abiola Polytechnic and Federal Polytechnic Ilaro are 35.7%, 35.7% and 28.6% respectively.

Table 1: Characteristics of Respondents

Characteristics	Frequency	Percentage
Gender		
Male	33	47.1
Female	37	52.9
Total	70	100
Ages		
15-20 years	37	52.9
21-25 years	27	38.6
>25 years	6	8.6
Total	70	100
Institution		
Moshood Abiola Poly	25	28.6
Covenant University	25	35.7
Ilaro Polytechnic	20	35.7
Total	70	100

4.2 Assessment of tertiary institutions learning adequacy**Table 2: Assessment of higher institutions learning adequacy**

Lecturer Indicators	CU		MA POLY		Ilaro Poly		Overall
	Mean	Rank	Mean	Rank	Mean	Rank	Mean
The lecturers in my department teaching course attitude is very outstanding.	4.72	1 st	4.24	2 nd	4.65	2 nd	4.35
The lecturers in my department are academically and professionally qualified.	4.64	2 nd	4.48	1 st	4.60	3 rd	4.57
The lecturer in my department have a good understanding of the course they teach.	4.56	3 rd	4.16	3 rd	4.50	4 th	4.40
The lecturer in my department believes in our learning capacity.	4.12	4 th	3.96	4 th	4.70	1 st	4.23
Method of Lecturing							
The lecturer in my department are detailed in teaching.	4.60	1 st	4.12	1 st	4.50	1 st	4.40
The lecturers in my department use multimedia for teaching	4.56	2 nd	3.04	3 rd	1.75	4 th	3.21
The lecturer in my department engage us in adequate practical session.	4.56	2 nd	3.12	2 nd	4.40	3 rd	4.00
The lecturer in my department adopt problem base learning in teaching.	4.28	4 th	2.04	3 rd	4.45	2 nd	3.89
Learning Facilities							
There is fully equipped library in my institution.	4.76	1 st	2.40	1 st	4.45	1 st	3.83
My department has a fully equipped laboratory.	4.72	2 nd	1.72	5 th	4.35	2 nd	3.54
There is internet facilities in my institution.	4.72	2 nd	1.84	4 th	4.45	1 st	3.61
The reading tables and chairs in my class are adequate.	4.72	2 nd	1.96	3 rd	4.45	1 st	3.66
My class room is equipped with good reading tables and chairs.	4.68	3 rd	2.20	2 nd	4.30	3 rd	3.69
My classroom is equipped with multimedia facilities.	4.40	4 th	1.40	6 th	4.20	4 th	3.64

CU: Covenant University. MA: Moshood Abiola Polytechnic.

Table 2 shows the various learning parameters which can be used to measure adequacy of learning under three headings which are 'lecturer indicator, learning methods and learning facilities'. The various parameters are categorized under the three headings which are used to measure and compare the learning adequacy of the three selected institutions. The result in table 2 shows that Covenant University was mean values was higher compare to other institutions for the parameters under learning indicator. However, the ranking of the various parameters differs for different institutions. Covenant University respondents ranked the parameter 'the lecturers in my department teaching course attitude is very outstanding' highest with a mean score of 4.72 while the same was ranked second on the ranking scale of both Moshood Abiola Polytechnic and Federal Polytechnic Ilaro with a mean score of 4.24 and 4.65 respectively. However, it is evidenced from the result presented under the lecturer indicator for the three institutions are very outstanding as all the mean values of all the parameters used in the assessment is above 4.0. The overall mean also collaborate the former statement.

In the same vein, the parameters under learning method indicator are all outstanding for Covenant University as all the parameters mean value is above 4.0. However, in Moshood Abiola Polytechnic, aside the parameter 'lecturer are detailed in teaching' with a mean score of 4.12, all other equally relevant parameters are on mean score of 3.0 which signifies neutral on the likert scale. Such mean score can be linked to the uncertainty of the respondents of the assessed parameters in the institution. Federal polytechnic Ilaro performed well in most of the parameters under learning method as the mean score is above 4.0 except in the use of multimedia in teaching which it ranked lowest with a mean score of 1.75 which signifies 'do not agree' on the likert scale.

Under learning facilities assessment, Covenant University ranked very high in all the parameters considered with a mean score of 4.0 and above which signifies excellent performance by the institution. However in Moshood Abiola Polytechnic the reverse is the case as the mean score in all the parameters considered are between 1.0 and 2.0. Such response shows that her learning facility assessment is very porous and that can affect the student learning. Federal polytechnic Ilaro performance is excellent in all the learning facilities assessment except in multimedia facility assessment which it ranked 2.0 on the mean score which tends towards disagreement on the likert scales.

4.3 Research Hypothesis

The research hypothesis for the study is that there is no significant difference among the institutions on the assessed learning adequacy. The results is presented in Table 4.0.

Table 4: ANOVA results for significant difference among higher institutions on learning adequacy assessed

		Sum of Squares	Df	Mean Square	F	Sig.
The lecturers in my department have a good understanding of the course they teach.	Between Groups	2.280	2	1.140	2.091	.131
	Within Groups	36.520	67	.545		
	Total	38.800	69			
The lecturers in my department are academically and professionally qualified.	Between Groups	.343	2	.171	.373	.690
	Within Groups	30.800	67	.460		
	Total	31.143	69			
The lecturers in my department teaching course attitude is very outstanding.	Between Groups	3.293	2	1.646	4.980	.010
	Within Groups	22.150	67	.331		
	Total	25.443	69			
The lecturer in my department believes in our learning capacity.	Between Groups	6.543	2	3.271	5.507	.006
	Within Groups	39.800	67	.594		
	Total	46.343	69			
The lecturer in my department are detailed in teaching.	Between Groups	3.160	2	1.580	4.892	.010
	Within Groups	21.640	67	.323		
	Total	24.800	69			
The lecturers in my department use multimedia for teaching.	Between Groups	88.916	2	44.458	45.918	.000
	Within Groups	64.870	67	.968		
	Total	153.786	69			
The lecturer in my department adopt problem base learning in teaching.	Between Groups	28.136	2	14.068	24.199	.000
	Within Groups	38.950	67	.581		
	Total	67.086	69			
The lecturer in my department engage us in adequate practical session.	Between Groups	30.400	2	15.200	32.228	.000
	Within Groups	31.600	67	.472		
	Total	62.000	69			
My class room is equipped with good reading tables and chairs.	Between Groups	87.446	2	43.723	52.650	.000
	Within Groups	55.640	67	.830		
	Total	143.086	69			
The reading tables and chairs in my class are adequate.	Between Groups	112.821	2	56.411	102.287	.000
	Within Groups	36.950	67	.551		
	Total	149.771	69			
My classroom is equipped with multimedia facilities	Between Groups	124.071	2	62.036	129.887	.000
	Within Groups	32.000	67	.478		
	Total	156.071	69			
My department has a fully equipped laboratory	Between Groups	130.741	2	65.371	152.981	.000
	Within Groups	28.630	67	.427		
	Total	159.371	69			
There is fully equipped library in my institution	Between Groups	80.433	2	40.216	71.834	.000
	Within Groups	37.510	67	.560		
	Total	117.943	69			
There is internet facilities in my institution.	Between Groups	123.236	2	61.618	87.189	.000
	Within Groups	47.350	67	.707		
	Total	170.586	69			

Significant Level: 0.05

The significant difference in the three institutions was tested by setting the level significant at statistical value of 5%. The results in Table 5 shows that the significant level of all the parameters under lecturer assessment was above 0.05 which signifies that there is difference among the institutions on lecturers assessment on learning adequacy. As such the alternative hypothesis is rejected and the null hypothesis which says there is significance difference among the three institutions response on the assessment of lecturer indicator on the adequacy of learning in tertiary institutions. Under lecturing method, the only parameters above 0.05 was ‘the lecturer in my department are detailed in teaching’ while all other parameters are below 0.05. It can be concluded from the result also that null hypothesis which state

that there is no significant difference among the three institutions on all the parameters on learning method is accepted except the parameter 'the lecturer in my department are detailed in teaching' in which the alternative hypothesis is accepted. Under learning facilities assessment, result shows that all the parameters are below 0.05 and that signifies that alternative hypothesis is rejected while the null hypothesis which says there is no significance difference among the institutions on learning facilities on the adequacy of learning in tertiary institutions is accepted.

5.0 DISCUSSION OF FINDINGS

The study conducted shows the state of learning adequacy under the three indicators which are 'lecturer assessment, lecturing method assessment and learning facilities assessment in three tertiary institutions. The results shows that learning adequacy under the three indicators in Covenant University are very outstanding. The outstanding capacity of Covenant University in learning can be attributed to its ownership structure as their drive is second to none.

Learning indicator assessment is excellent in Ilaro Polytechnic and also method of lecturing assessment except in the use of multimedia facilities in teaching. Such inadequacy can be attributed to institution less priority to information technology (IT) in learning. The institution also performed excellently in learning facilities assessment except in multimedia facilities availability which is earlier observed.

Moshood Abiola Polytechnic lecturer indicator assessment is excellent why method of lecturing and learning facilities are porous. The porosity in method of lecturing assessment and learning facilities assessment can be affiliated to lack of training of lecturer and poor funding of the institution. The study also revealed that there is no significant difference among the selected tertiary institutions on lecturer indicator assessment. The study further revealed from the tested hypotheses that there is significant difference among the tertiary institutions on lecturing method and learning facilities.

6.0 CONCLUSION AND RECOMMENDATION

It is evidenced from the study conducted that there are differences among the tertiary institutions on the assessment of learning adequacy. Covenant University learning adequacy assessment under lecturer learning indicator, method of lecturing and learning facilities report are excellent compare to the other two tertiary institutions which are Moshood Abiola Polytechnic and Federal Polytechnic Ilaro. Among the two institutions Moshood Abiola Polytechnic is highly porous in method of lecturing and learning facilities measurement and performed better in lecturer indicator assessment. Federal polytechnic Ilaro is highly adequate in lecturer indicator assessment while it shows some measure of inadequacy under method of lecturing and learning facilities. The inadequacy observed in Ilaro Polytechnic is attributed to lack of multimedia facilities as revealed from the study.

In concise, the study shows some gaps in some of the selected institutions on learning adequacy assessment. The following recommendations are hereby made to address the observed gaps from the study;

- I. Government should give education priority in her budget allocation as lack of funding has contributed to institution inability to procure facilities that can aid students learning ability.
- II. There should be collaboration among the institutions as to strengthen each other weakness.

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