ASSESSING THE PERFORMANCE TREND OF QUANTITY SURVEYING STUDENTS IN CORE QUANTITY SURVEYING COURSES IN SELECTED TERTIARY INSTITUTIONS IN NIGER STATE

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This study assessed the performance trend of Quantity Surveying students in Core Quantity Surveying courses in Tertiary institutions offering the course in Niger State. The number of students who applied Quantity Surveying as their first choice was analyzed, the performance trend over a period of six years was studied and factors affecting the performance of students were studied. This research adopted the descriptive method of data analysis and data on the academic performance of students were collected over a period of six academic sessions. Questionnaires were administered to the students in all the institutions studied to get their opinion on the factors affecting the performance in the selected core courses. As such this research concludes that majority of students currently studying Quantity Surveying settled for it when their preferred course of study was unavailable Advanced Measurement, Civil Engineering Measurement and Heavy Engineering Measurement had the lowest academic performances of students when compared to other core Quantity Surveying courses in all the tertiary institutions in Niger State. Poor understanding of Construction Technology and Lack of interest is the **main factor affecting students' academic performance as perceived from the analysis.** In order to improve the performance in Measurement courses, more practical teaching methods should be adopted for example technical staff should often take the student to site to increase their constructional knowledge.

Keyword: *Academic, Assessing, Measurement, Performance, Quantity Surveying*.

INTRODUCTION

The principal activities of the client's Quantity Surveyor is the preparation of bills of quantities, according to Hore (2010) whileMcDonnell (2010) explained that the preparation of the Bill of Quantities for a particular project involves the measurement or "take-off" of quantities for various items of work from design drawings prepared by the project Architect and Engineer. The profession is concerned with detailed calculation and measurement of the materials and labour required for construction activities including building, and engineering project, has a multi-disciplinary nature (Opawole, Awodele, Babatunde & Awodele, 2012). The quantities are measured in accordance with a defined set of rules and definitions known as a "Method of Measurement". Lateron Samuel & Ejike (2015) pointed out that the responsibility of the Quantity Surveyor includes cost assessment, evaluation of economic and contractual arrangement of the project which is often significantly prejudiced by factors in the environment, and changes that are exclusive to an individual project which buttresses the vastness of Quantity Surveying as a profession.

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Performance as defined by Olanipekun (2014) is an observable or measurable behaviour of a person in a particular situation usually experimental situation; furthermore this same research deduced that performance measures the behaviors that can be observed at a specific period or over a specific period of time. A trend in these performance can be spotted and analyzed when closely observed for a period of time, assessment helps and shapes students' opinion towards learning and influences their motivation to learn, it provides vital information on students learning ability for easy accountability, internal programme, decision – making monitoring students' progress and helping them structure their learning (Stiggins, 2001). The Federal Republic of Nigeria Policy on Education (FRN) in 2004 emphasized so much on continuous assessment which is necessary at all level of education (Ani, 2014). According Samuel *et al* (2016), the diverse means of measuring students' success includes: Continuous Assessment (CA) and Examination, Grade Point Average (GPA), Graduation and retention rate etc. as the students' performance is very important as it appears to be the major criterion by which the effectiveness and success of any educational institution could be judged. Hence as stated in NUC (2012), the Nigerian Universities Commission has certain criteria's listed for accreditation of an institution some of which include, adequacy of teaching staff in numbers, competence and standard of instruction in all subject areas of the programme and the requirement for student graduation which is a satisfactory completion of minimum practical, core/ compulsory and elective courses stipulated in Bench Mark Minimum Academic standards (BMAS) among others.

Examination have widely been used to evaluate students' performance in formal school setting. At a higher education level, it helps to establish the integrity of the degree or certificate awarded by any school, college or university. This further explains that examinations are organized activities aimed at determining the cumulative or board knowledge in a student' educational development (Tobih, 2012).

In the Nigeria universities system, there are two mode of assessments: Continuous Assessment (CA) and Examination, used to determine the students' final grades. Therefore, Anikwueze (2005) suggests that the purpose of test is to discover a Person's Performance under controlled circumstances, which leads to answering a number of questions either orally or written or perform a task or tasks within some limited time. Thus the examiners must not deviate from the objectives upon which the tests are based. Although, Pascarella & Terenzini (1991) cited in Rich (2006) and Akure (2016), found that most educators believe that effort is positively related to performance.

In a research carried out by Akure (2016) it was deduced that Civil Engineering Measurement and Advanced Measurement had the highest percentages as the respondents difficult courses with lower grades in comparison to all other courses while Samuel *et al* (2016) pointed out factors affecting performance of undergraduate students in construction related disciplines as concentration, lack of reading habit and reading plan and class size. Similarly, Shittu (2016) observed a strong relationship between academic performance and factors affecting academic performance, when performance of undergraduate students in Construction Measurement was analyzed. However none of these researches focused solely on the performance trend of students in core Quantity Surveying courses alongside the probable factors affecting their performance in these courses. This research then narrows it down to the Tertiary Institutions offering Quantity Surveying in Niger State.

Research Questions;

1. What are the trends in performance of core Quantity Surveying courses in selected Tertiary Institution in Niger State over the period of six years (2010- 2016).
2. What are the factors affecting Quantity Surveying students in learning core Quantity Surveying courses.

The aim of this research is to assess the performance trend of Quantity Surveying students in core Quantity Surveying courses, The objectives of the research are;

1. Assess the performance trend of quantity surveying students in core Quantity Surveying courses in Niger State Tertiary Institutions offering Quantity Surveying, over a period of six years (2010- 2016).
2. To assess the factors affecting performance of Quantity Surveying students in the core Quantity Surveying courses.

MATERIALS AND METHODS

For the purpose of this study both the primary and secondary data were collected. The primary data was obtained by the use of questionnaire, the use of literature review through record inspection in the department and academic office in each institution, therefore data obtained from the sources formed the basis of this study. A questionnaire was administered to find out the difficulty of core courses. The effectiveness of the teaching methods used for these courses and to assess the challenges encountered in teaching and learning of core Quantity Surveying courses were also analyzed. The performance of students was presented in tabular form, with information such as institution, year, course, grade, success and failure rate. Charts and graphs will be used to show the performance trend.

The group under study are the students of the department, all their responses were analyzed to accomplish the stated objectives. The population of final year students (500Level, ND II and HND II) in Quantity Survey Department at the institution as at 2016 was considered from Federal University of Technology Minna, Federal Polytechnic Bida and Niger State Polytechnic, Zungeru, a total of 299 students from all the institutions combined, using Krejcie & Morgan (1970) table, the sample size for this study is 169 student.The questionnaires distributed had a 93.4% response rate as 158 questionnaires were returned.Also, the grades of Quantity Surveying students in measurement courses and other core courses in the department over a period of six years were also collected. The data was gathered from each Quantity Surveying department of the various schools under study. The collected data was sorted into suitable forms for proper analysis using percentage and mean. Both descriptive and inferential statistical methods were used for the analysis of data. The descriptive statistical method employed the use of mean item score in order to rank the factors affecting the learning of selected core Quantity Surveying courses.

RESULTS AND DISCUSSION

A total of 158 respondents from the department returned duly filled questionnaire.

Students Who Applied For Quantity Surveying

Table 3.1 shows the respondents' response to whether or not Quantity Surveying was their first choice 73 said yes representing 43.20 % and 96 said no representing 56.80 %. This implies that a majority of Quantity Surveying students settled for the course as most preferred was unavailable and this can be tied to the factors that eventually affect the **students' performance.**

Table 3.1 Quantity Surveying as First Choice of Study

Choice	Frequency	Percentage
Yes	73	43.20 %
No	96	56.80 %
Total	169	100 %

Source: Researchers' Analysis (2017).

Performance trend of Quantity surveying students in core Quantity Surveying courses in selected institutions in Niger State.

Fig 3.1 to 3.4 shows the students average grades between 2010/2011 – 2015/2016 session in FUT Minna, Niger State Poly, Bida Poly respectively. The average grades were analyzed using descriptive analysis method.

The trends in performance of core Quantity Surveying courses in selected Tertiary Institution in Niger State over the period of six years (2010- 2016) therefore the students grades from all these institutions were analyzed, between 2010- 2016 Fig 3.1 shows the average grades in Advanced Measurement, Civil Engineering Measurement, Professional practice, Heavy Engineering and Cost Control. Civil Engineering, Professional Practice and Ethics and Heavy Engineering have the lowest numbers between grade A- C, while Civil Engineering and Heavy Engineering had the highest recorded number between grades D- F.

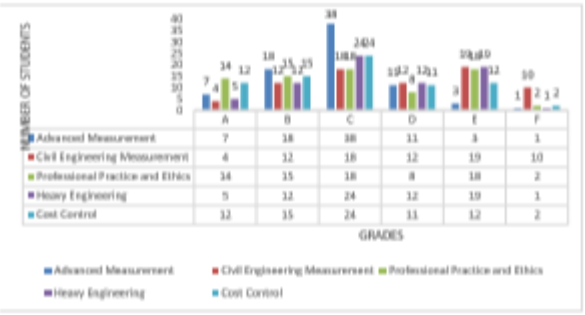
Fig 3. 2 shows average grades of ND II students from 2010 to 2016 Niger State Polytechnic, Zungeru and Building Measurement and Specifications, Tendering and Estimating, Building Construction and Principle of Engineering Measurement were the selected core courses. Principle of Engineering Measurement and Building Measurement and Specifications

recurrently had the lowest record of grades between AA and CD and the highest record of grades D and F.

Fig 3. 3 assesses records of ND II students Federal Polytechnic Bida in Building Measurement & Specification, Tendering& Estimating, Building Construction III and Principles of Engineering Measurement. This revealed that Principles of Engineering Measurement and Building Construction III had the least record of grades between A- CD and the highest record of grades in D and F.

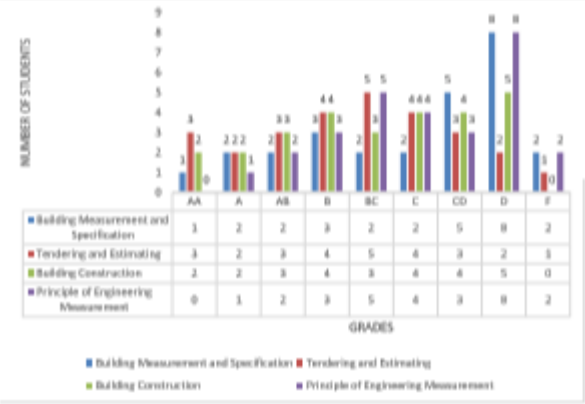
Fig 3.4 displays the HND II students of Bida Poly average grades and it was observed from the results that when Advanced Measurement of Construction Works, Construction Technology, Tendering & Estimating, Professional Practice & Procedure, Measurement of Civil Engineering Works and Measurement of Heavy Engineering Works were selected, Advanced Measurement of Construction Works, Measurement of Civil Engineering Works and Professional Practice & Procedure had the lowest record of grades between A- BC, they also had the highest record of the grade C. This same courses recorded the highest grades between D and F which means they are the courses with the least recorded performance.

This study also agrees to Shittu (2016) whose results showed that for these selected institutions, Measurement courses have the highest record of average grade the which is BC and C.



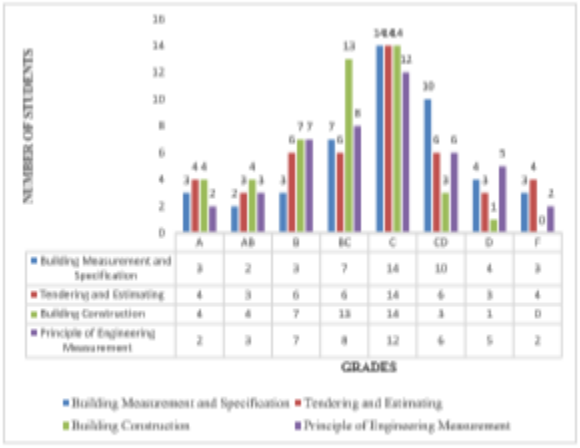
	A	B	C	D	E	F
Advanced Measurement	7	18	38	11	3	1
Civil Engineering Measurement	4	12	18	12	19	10
Professional Practice and Ethics	14	15	18	8	18	2
Heavy Engineering	5	12	24	12	19	1
Cost Control	12	15	24	11	12	2

Fig. 3.3: FUT Minna 500 Level Students Average Grades Between 2010/2011 – 2015/2016 Session



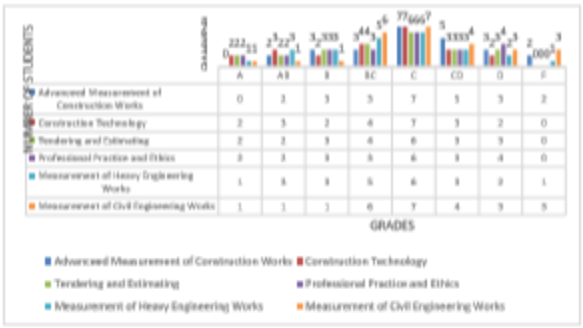
	AA	A	AB	B	BC	C	CD	D	F
Building Measurement and Specification	1	2	2	3	2	2	5	8	2
Tendering and Estimating	3	2	3	4	5	4	3	2	1
Building Construction	2	2	3	4	3	4	4	5	0
Principle of Engineering Measurement	0	1	2	3	5	4	3	8	2

Fig. 3.2: Niger State Polytechnic, Zungeru ND II Students Average Grades 2010/2011 – 2015/2016



	A	AB	B	BC	C	CD	D	F
Building Measurement and Specification	3	2	3	7	14	10	4	3
Tendering and Estimating	4	3	6	6	14	6	3	4
Building Construction	4	4	7	13	14	3	1	0
Principle of Engineering Measurement	2	3	7	8	12	6	5	2

Fig. 3.3: Federal Polytechnic, Bida ND II Students Average Grades 2010/2011- 2015/2016



	A	AB	B	BC	C	CD	D	F
Advanced Measurement of Construction Works	0	1	3	5	7	5	3	2
Construction Technology	2	3	2	4	7	3	2	0
Tendering and Estimating	2	2	3	4	6	3	3	0
Professional Practice and Ethics	3	3	3	5	6	3	4	0
Measurement of Heavy Engineering Works	1	1	3	5	6	3	2	1
Measurement of Civil Engineering Works	1	1	1	0	7	4	3	3

Fig. 3.4: Federal Polytechnic, Bida BTND II Students Average Grades 2010/2011- 2015/2016

Factors Affecting Students Performance in Core Quantity Surveying Courses

Table 3.2 shows the results of mean ranking when respondent's responses were analyzed. **Factors affecting students' performance in Core Quantity Surveying Courses.** Poor understanding of Construction Technology ranked 1st with 3.7515 as mean score which shows that there is obviously no way that measurement courses will not be affected since Construction Technology is a relevant knowledge and this finding agrees with Shittu (2016) who deduced poor knowledge of Construction technology as a factor responsible for failure, lack of interest had 2nd position with 3.6923 this can be traced back to majority of students studying did not chose Quantity Surveying as their first choice, Inadequate learning materials was the 3rd highest with 3.5621 as its mean score teaching and training method

3.500, complexity of taking off process was ranked 4th with a mean score of 3.4556, lack of provision of a bridge between theory and practical had a 3.4497 mean score.

Furthermore this research thereby agrees with Samuel ***et al***, (2016) findings on factors affecting performance of undergraduate students in construction related discipline in Nigeria as it revealed that concentration, lack of reading habit and reading plan and class size affects the performance of undergraduates construction related discipline were key factors that **affected students' performance in construction related discipline.**

Other factors were; lack of initiative and use of imagination, class size, use of outdated resource materials, inadequate or poor exam preparation, lack of concentration, heavy course workload, inadequacy of technical staff to teach the practical aspect of measurement courses, difficulty of examination questions sufficiency of lecturers to teach measurement courses insufficient time during examination stress inadequate effort to learn with mean scores of 3.3988, 3.3988, 3.3195, 3.2899, 3.2803, 3.1190, 2.8364, 2.7738, 2.8272, 2.7560, 2.7126, 2.7083, 2.5818 and 2.5210 respectively.

Pascarella & Terenzini (2005) found that most educators believe that effort is positively related to performance, previous empirical studies of the link between effort and student performance find mixed, and often contradictory, evidence on whether extra effort improves or harms performance and this study disagrees with the findings as inadequate or poor exam preparation ranked 10th among these factors and had a 3.2803 mean score. Shittu (2016) concluded that poor constructional knowledge by most student is the main factor affecting **students' academic performance in construction measurement and this corresponds with the** results of my findings, this factor had a mean score of 3.7515 and was ranked 1st under **factors affecting students' performance in core quantity surveying courses**. Constructional knowledge is valuable to the understanding of the Quantity surveying core courses hence the recorded difficulty in understanding it shows that the performance will definitely be affected. Poor Teacher Student Relationship has a mean score of 3.20 in this research and was ranked 7th.

Hence it agrees with Shittu (2016) factor lack courage to approach lecturers for advice for fear of rebuke in 100 to 300 level students, since this research focused on final year students only its agrees as even at final year it can be seen that student- lecturer relationship is still not established fully, the factors can relate as responses showed poor teacher student relationship.

Table 3.2 Factors Affecting Students Performance in Core Quantity Surveying Courses

S/No	Items	Risk Categories					Total	Mean Score	S.E	S.D	Rank
		5	4	3	2	1					
1	Poor Understanding Of Construction Technology	69	44	9	29	18	158	3.7515	.08992	1.16095	1
2	Lack Of Interest	23	65	38	31	12	158	3.6923	.10943	1.42261	2
3	Inadequate Learning Materials	17	38	30	52	36	158	3.5621	.09781	1.27148	3
4	Teaching And Training Method	14	36	51	22	55	158	3.5000	.09376	1.20872	4
5	Complexity Of Taking Off Process	7	22	64	40	36	158	3.4556	.10209	1.32718	5
6	Lack Of Provision Of A Bridge Between Theory And Practical	24	93	1	29	22	158	3.4497	.09998	1.29978	6
7	Lack Of Initiative And Use Of Imagination	14	27	58	48	23	158	3.3988	.09959	1.29087	7
8	Class Size	5	14	70	55	25	158	3.3988	.09407	1.21931	8
9	Use Of Outdated Resource Materials	27	65	32	25	20	158	3.3195	.09583	1.24582	9
10	Inadequate Or Poor Exam Preparation	20	81	12	37	19	158	3.2899	.09510	1.23634	10
11	Lack Of Concentration	40	94	0	23	12	158	3.2803	.09252	1.15932	11
12	Heavy Course Workload	36	77	3	34	19	158	3.1190	.08888	1.15198	12
13	Inadequacy Of Technical Staff To Teach The Practical Aspect Of Measurement Courses	37	83	3	30	16	158	2.9763	.11038	1.43491	13
14	Difficulty Of Examination Questions	15	52	8	67	27	158	2.8364	.09231	1.18574	14
15	Sufficiency Of Lecturers To Teach Measurement Courses	32	47	3	59	28	158	2.7738	.09944	1.28004	15
16	Insufficient Time During Examination	30	83	11	34	11	158	2.8272	.09125	1.16139	16

17	Stress	34	78	4	36	17	158	2.7560	.08631	1.11869	17
18	Inadequate Effort To Learn	11	47	27	66	18	158	2.7126	.10054	1.29922	18
19	Lack Of Reading Habit And Reading Plan	13	48	23	67	18	158	2.7083	.10038	1.30110	19
20	Lack Of Self-Discipline	15	63	28	50	13	158	2.5818	.08427	1.08241	20
21	Laziness	25	84	7	40	13	158	2.5210	.07348	.94956	21

Source: Researchers' Analysis (2017)
Legend
1 = "Strongly Disagree", 2 = "Disagree", 3 = "Neutral", 4 ="Agree" And 5 = "Strongly Agree"

CONCLUSION AND RECOMMENDATION

This research concludes that Advanced Measurement, Civil Engineering Measurement and Heavy Engineering Measurement had the lowest academic performances of students when compared to other core Quantity Surveying courses in all the tertiary institutions in Niger State.

Poor understanding of Construction Technology is **the main factor affecting students'** academic performance as perceived from the analysis. This item had the highest respondents mean response of 3.7515. Lack of interest is **another factor that greatly affects students'** academic performance and it attracted the second highest mean response of 3.6923 respectively.

It is recommended based on the research carried out that in order to improve the performance in Measurement courses, more practical teaching methods should be adopted i.e. technical staff should often take the student to site to increase their constructional knowledge. It is also advised that students should always visit the site for their self-increment in constructional knowledge. Based on the number of lecturers available at all the three institutions there is need for more technical staff to take the practical aspect of courses that are construction related. Students who applied Quantity Surveying should be given preference to curb the issue of lack of interest.

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