# Enhanced Entry Qualifications and Academic Performance in ODL: Experience At University Of Lagos, Nigeria

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## Abstract

The study investigated the effect of prior academic background on students' performance in undergraduate Open and Distance Learning (ODL) programs in Accounting and Business Administration at the University of Lagos. Kruskal-Wallis non-parametric ANOVA test was used to find out whether or not there are significant differences between the performance of students at four different levels of entry qualifications for admission into the first year of the undergraduate programs. The Mann-Whitney test was applied to investigate the significant difference in performance between the various paired groups. Some students get exempted from the first two years of the five-year undergraduate programs on the basis of full professional qualifications or high level performance at relevant higher diploma programs from tertiary technical Colleges. The Mann-Whitney was also applied to compare differences between the performances of such students with those who began at the first year level. Some significant differences were spotted.

**Key Words:** Open and Distance Learning (ODL); Kruskal-Wallis ANOVA test; Mann-Whitney test; Accounting; Business Administration; formal, and face-to-face education.

# 1. INTRODUCTION

The University of Lagos (Unilag) was established and started with a student population of 131 in 1962. Lagos being a cosmopolitan city, the founding fathers of Unilag had planned for it to run both formal (face-to-face) and distance education so as to offer professional courses to working adults in Law, Commerce and Business Administration and Science-Education. This led to the setting up of the then Correspondence and Open Studies Unit (COSU) in 1974. COSU later metamorphosed into the Distance Learning Institute (DLI) through which Unilag offers some of her programs by the Open and Distance Learning (ODL) mode (Okunuga, 2000). At inception the then COSU, now DLI, had a target of giving opportunity to working adults who otherwise would not have been enrolled in the few universities that offered degree programs through face-to-face mode to young school leavers in Nigeria at that time (Distance Learning Institute, 2011). There was also the aim of giving opportunity to those who desire professional development in a new field other than the one in which they have qualification and experience. The quest to expand the pool of candidates for admission led to some flexibility in entry requirements. This made for a variety of entry qualifications for fresh intakes of the DLI programs especially in Accounting and Business Administration.

The first batch of 501 students were admitted into the then COSU (now DLI) during the 1975/76 session. The present student population of over 8,000 is made up of teachers, public servants, military and paramilitary personnel (army, air force, navy, police etc), employees of the public, private/commercial enterprises and the self employed (Adelowotan et al, 2010).

Admission criteria tried to follow that of the full-time mode but were slightly relaxed to take cognizance of the work experience of the applicant. Age for the Science Education program was fixed at a minimum of 25 years with five years teaching experience, while those admitted into Accounting and Business Administration programs were supposed to be 33 years of age with at least five years working experience.

Academic qualifications were classed into groups with each group being considered differently for admission. The groups with five credit passes at the Senior Secondary School Certificate Examination/General Certificate Examination ordinary Level (SSSCE/GCE O/L)

were allocated 50% of the admission slot. Those with GCE advanced level (A/L), National Diploma or Higher national Diploma (ND/HND), and the National Certificate of Education (NCE) were given 25%, and those with University degrees were given 5%. Consideration was given to those with four credit passes and those who had ordinary pass grades in either English or Mathematics at SSSCE/GCE O/L (10%). Further consideration was given to those with five credits but ordinary pass grades in English and Mathematics.

However, as the quality of admission seekers improved, those with deficiencies were eased out and the minimum qualification became five credits including English and Mathematics at SSSCE or GCE O/L.

In consideration of age and work experience the normal entry level to the Accounting and Business Administration programs is the 200 level rather than the 100 level of the four year full time equivalent program. The program should be completed in a minimum of five years through ODL. In 1997 the DLI Board of Studies considered and gave approval that candidates who had additional qualifications such as HND (upper credit pass and above) be admitted at the 300 level which enable them spend a minimum of three academic sessions for their studies rather than 5 years for those who had only SSSC/GCE O/L.

Apart from the HND holders, consideration was also extended to holders of professional qualifications. Among those considered for admission at the 300 level in Accounting at DLI were holders of Associate membership of the Institute of Chartered Accountants (ACA), Associate membership of the Institute of Cost and Management Accountants (ACMA) and Institute of Taxation Management. Those admitted on this same higher level for Business Administration include holders of full professional Certificates of the Institute of Marketing, Institute of Purchasing and Supplies, and Institute of Chartered Secretaries and Administrators (ICSA). Like the holders of HND, they are all admitted into Year 3 of the five year DLI program and should therefore spend a minimum of three academic sessions to graduate.

The scenario described here gives rise to the issue of fresh intakes at DLI Accounting and Business Administration programs being a mixture of students who had some tertiary level education and those who didn't. Since there are no different classroom accommodation or different sections of classrooms during interactive sessions with tutors; these tutors are confronted with different groups of students some of who are seemingly at a disadvantage.

Exemptions granted to those with full professional qualifications and those who had high level performance at relevant higher diploma programs could be a source of intimidation to those students who entered with lower qualifications, started in Year 1 and meet up with professionals at the 300 level. It is not uncommon to hear those students with lower entry qualification express their sense of awe in having to take the same examinations with their full professional classmates! The latter category of students may be trying eagerly to answer all the questions the instructors in various courses might ask the class. This could be intimidating and cause concern for both the instructors in the classes for the various courses, and the students with lower entry qualifications. It might even extend to the administrators as well, especially with regard to meeting support needs of the different categories of students necessitating interacting with them. The major question that is addressed in the study then becomes: How does entry qualification affect student performance at the various levels of the Accounting and Business Administration programs at the Distance Learning Institute of the University of Lagos? One would expect those with higher qualifications, especially those with previous exposure to tertiary education and those with full professional qualifications to perform better.

The rest of this paper is structured as follows: Section 2 gives a brief discussion of the relevant literature on issues involved. Section 3 describes the research method, the data and its source. Section 4 presents analyses of the data and interpretation of the results. Finally, section 5 summarizes and conclude.

# 2. LITERATURE REVIEW

Many factors have been adduced as determinants of academic performance of students in programs of courses at all levels of education; yet, it has been an onerous task pining down one specific factor. Determining the factors governing the academic performance of students is a challenging task as it is a product of various factors. Among these factors are psychological, socio – economic and environmental factors (Kool and Ping, 2007). Subsets of these factors include age, gender, race, prior academic achievements, prior area of study and work, among others (Kim and Lee, 2007; Zezekwa and Mudavahu, 2011; Yap and Ng, 2012). Patricia et al (2006) affirmed that students' performance is based on interactions among variables such as ethnicity, age, learning ability, learning support, motivation of learners and prior academic achievement.

Researchers are divided on the effect of age on academic performance. While Chansakar and Michaeloudis (2001) opined that age does not affect students' performance in the context of quantitative subjects, others found that older students performed less than younger ones in reasoning in the sciences and tended to score less than younger ones at the beginning of their course (Aldous et al, 1999; Huff and Fang, 1999; Kay, Pearson and Rolfe, 2002).

Kool and Ping (2001) stressed that the combined factors of academic background and age have very little significant effect on students' academic performance. They however stated that these two factors independently have significant effects on academic performance as measured by grade point average (GPA). Josey (1977) regarded GPA as a numerical criterion by which to measure academic performance while Merisortis and Phipps (1999) concurred that grades and test scores were identified as one of the means of determining the effectiveness of distance education.

Bergin (1983) found no significant difference in the mean total exam points received at the end of the course between students who had high school accounting or book-keeping and students who had no prior study of accounting. Baldwin and Howe (1982) reported that students with prior high school accounting scored higher on earlier tests and lower on later tests, with no significant differences on overall performance in first year college accounting courses. Jacoby (1975) also found that students who studied book keeping in high school scored higher in earlier stages but lower towards the end of the first college level accounting course than students who had no high school book-keeping; however, he found no significant differences on the overall (final) performance between the two groups. Schroeder (1986) asserted that students with more than one year of high school business studies performed better than those with one year or less hence, he noted that the longer the exposure, the higher the performance in year one college accounting courses. However, the performance advantage was in the early stages and totally disappeared by the final exams.

Allen and Woodland (2006) discovered that additional education (longer hours of tutoring) produces higher quality Chartered Public Accountants (CPA). Nash (2005) also affirmed that supplemental tutoring and pre-course orientation sessions reduced the drop-out and failure rates among distance learners.

Fairfield –Sonn, et al. (2009) investigated the academic performance of MBA students as measured by their GPA at graduation. They looked into associations between performance and gender, and between performance in the MBA program and undergraduate GPA. They

were able to establish that gender and undergraduate GPA have significant effect on the academic performance measured by the GPA of the MBA graduates.

Canlar (1986) studied the effects of college-level exposure to accounting on student's performance in the first MBA–level financial accounting course. He found that although students with prior exposure performed better than those without any exposure, the gap between examinations scores of the two groups narrowed somewhat as the course progressed. Schroeder (1986) found no difference in the performance of students without prior accounting course work and those with one year or less high school accounting course-work. However students with more than one year of high school course work were found to earn significantly higher scores.

Many of these studies made attempt to examine the effect of prior knowledge in a particular discipline or subject area on performance at higher level study in the same discipline in a single mode (face to face) learning scenario. Only a few of them, to the present researchers' knowledge, have yet addressed the question of effect of varied entry qualifications on performance of undergraduate students in an ODL setting. Furthermore, the research being reported here examined the effect of enhanced entry qualifications cum exemptions granted to some category of students on the performance of such students as compared with those not availed of such exemptions.

The researchers have interacted with the various categories of students over the years as course tutors, course/program coordinators and course advisers. Such interactions have often generated such inquiries in their minds as: Does one group perform in the programs better than the others? Can we justify the exemptions granted to students with high level performance at the higher national diploma and those with full professional certificates?

In light of these enquiries, the objective of this research study then was to examine the effect that various levels of entry qualifications have on the performance of undergraduate students in an ODL institution. The study also investigated whether or not exemption granted some category of students on the basis of professional qualification or high level performance in prior tertiary level diploma program can be justified.

## 3. RESEARCH METHODOLOGY

The design of the research is a longitudinal study whereby we measured the performances of students admitted into the Accounting and Business Administration programs at three levels in a five year program. The cumulative grade point average (CGPA) of a sample of DLI students at three levels (100-level, 300-level and 500-level) of the five year Accounting and Business Administration programs was used for the first aspect of the study. The CGPA of each group of students were observed separately. For the second aspect, the CGPA of students granted exemptions from years one and two making them start the program in Year 3 were observed at the 300 and 500 level together with that of those they joined in Year 3, who had passed through 100 and 200 levels.

The following two null hypotheses were formulated for testing:

 $H_{o1}$ : The level of performance of the various categories of students admitted into the Accounting and Business Administration programs in DLI at the 100-; 300-; and 500-Level are equal.

 $H_{o2}$ : There is no significant difference in the level of performance of any two categories of DLI students in Accounting and Business Administration programs at the 100-; 300-; and 500-level.

To test the first hypothesis, the Kruskal-Wallis non-parametric ANOVA test was used on the cumulative grade point average (CGPA) of students in various categories of entry qualification to measure their performance. The Kruskal-Wallis, is a rank sum statistical test

which generalizes the analysis of variance and enables us to dispense with the assumption that the populations are normally distributed (Levin and Rubin, 1998).

The second null hypotheses was tested by using Mann-Whitney two-tailed test, which, like the Kruskal-Wallis, is a non-parametric test; it was used on the CGPA of two categories of students, in a variety of paired comparisons, at the various aforementioned levels of the fiveyear ODL programs in Accounting and Business Administration in DLI. Kruskal-Wallis and Mann-Whitney tests are non-parametric equivalents of Analysis of Variance (ANOVA) and Students t parametric tests. These non-parametric tests were used because the data consist of grade points which are ordinal data. Ordinal data cannot satisfy normality assumptions required in the parametric tests

## **3.1 Source and Description of Data**

The data used in this study, as already indicated, is a longitudinal collection of CGPA of DLI students at three levels (Level 100; Level 300 and Level 500) of the five year programs in Accounting and Business Administration. There are two sets of data collected for each of the two programs. The first set comprised of CGPA of entrants into the two programs in the 1994/1995 academic session. By gathering information from each student's file at the DLI record office, it was possible to group the new entrants according to their highest entry qualifications as follows:

(i)SSC/GCE O/L (ii) OND Certificate holders (iii) NCE holders (iv) GCE A/L (v) HND Certificate holders.

Available data for the purpose of this study varied at each of the three levels with more data points at the lower level than at the higher levels. This is not unexpected in an ODL setting where attrition rate could be high except measures are put in place to reduce dormancy and dropout rates.

The second set of data are for the new entrants into the two programs in the 2000/2001 academic session and those who joined them in their third year as direct entry new entrants in the 2002/2003 academic session. Data for the 300-Level and 500-Level CGPA were collected for these students so comparisons could be made as indicated. To get a more robust result, data were also collected for direct entry new entrants for 2003/2004 academic sessions and these were added to those of 2002/2003 direct entry new entrants. Since we were concerned with performance at two levels (300 and 500) this action was assumed not to have any adverse effect on our analyses results. Besides, these sets of students passed through the system at about the same time, so a Cet. Par assumption concerning them should hold.

Descriptive statistics for the data at each level are displayed in Tables 1 to 4 for the two sets of CGPA data described here, and for the two programs at the various levels. It should be noted that some data were collected under the first set for HND certificate holders. Data point for this category of students was very small. This is why data for them were not included in the analyses for testing our hypothesis and answering the relevant research question.

	SSCE	OND	NCE	HND	A-Levels
Sample Size	195	60	102	5	40
Range	3.86	3.83	3.43	2.00	3.43
Mean	1.76	1.83	1.95	1.40	2.03
Standard Error	0.050536	0.10558459	0.066370616	0.373376	0.112033

Table 1a: Descriptive Statistical Measures of GPA - Accounting Yr 1(100-Level)
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### Table 1b: Descriptive Statistical Measures of CGPA - Accounting Year 3 (300-Level)

	SSCE	OND	NCE	HND	A-Levels
Sample Size	126	33	54	2	34
Range	3.20	2.63	2.34	0.09	2.84
Mean	1.89	2.00	2.10	1.70	1.92
Standard Error	0.054273	0.13408943	0.079551328	0.045	0.111159

### Table 1c: Descriptive Statistical measures of CGPA - Accounting final yr (500-Level)

	SSCE	OND	NCE	HND	A-Levels
Sample Size	81	20	38	1	29
Range	2.85	2.33	2.24		2.14
Mean	2.21	2.48	2.47		2.12
Standard Error	0.071	0.17138461	0.086976016		0.100221

### Table 2a: Descriptive Statistical Measures of CGPA - Business Admin. Year 1 (100-Level)

	SSCE	OND	NCE	HND	A-Levels
Sample Size	305	78	71	7	47
Range	3.86	2.90	2.73	2.86	4.80
Mean	2.08	2.10	2.20	1.38	2.49
Standard Error	0.039137	0.06088392	0.068890659	0.407388	0.103215

### Table 2b : Descriptive Statistical Measures of CGPA - Business Admin. Year 3 (300-Level)

	SSCE	OND	NCE	HND	A-Levels
Sample Size	211	33	47	3	32
Range	2.90	1.95	2.20	1.15	1.84
Mean	1.93	2.07	2.03	1.88	2.21
Standard Error	0.038691	0.08283567	0.064898682	0.35473	0.086015

### Table 2c: Descriptive Statistical Measures of CGPA - Business Admin. Final Year (500-Level)

	SSCE	OND	NCE	HND	A-Levels
Sample Size	45	13	13	1	6
Range	2.23	1.18	1.83	-2.84	0.84
Mean	2.16	2.06	2.22	2.84	2.63
Standard Error	0.07931	0.10701435	0.151523818	2.84	0.131783

### Table 3a: Descriptive Statistical Measures of CGPA -DE and Others - Accounting Year 3 (300-Level)

	DE	Others			
Sample Size	60	101			
Range	2.75	3.37			
Mean	3.58	1.96			
Standard Error	0.07483604	0.072178902			

# Table 3b: Descriptive Statistical Measures of CGPA - DE and Others Accounting Final Year (500-Level)

	DE	Others
Sample Size	30	47
Range	1.73	2.33
Mean	3.60	2.37
Standard Error	0.082925	0.09260515

# Table 4a: Descriptive Statistical Measures of CGPA -DE and Others Bus. Admin Year 3 (300 – Level)

	DE Others	
Sample Size	73	165
Range	4.35	4.35
Mean	2.55	2.55
Standard Error	0.1075949	0.07156675

# Table 4b: Descriptive Statistical Measures of CGPA -DE and Others - Bus. Admin Final Year (500-Level)

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	DE	Others			
Sample Size	27	71			
Range	2.10	3.20			
Mean	3.22	2.68			
Standard Error	0.10778	0.08362948			

# 4.ANALYSIS AND DISCUSSION OF RESULTS

Kruskal-Wallis non-parametric ANOVA test was used to test  $H_{o1}$ . Table 5a below presents the Kruskal-Wallis test results for the Accounting students at the three levels in our sample. The Table shows that students with different entry qualifications performed almost equally at all levels with few exceptions. The p-levels of all the pair-wise comparisons using Mann-Whitney test and the mean ranks of the pair wise tests are shown in Tables 5b, 5c, 5d and 5e. The p-levels are for 100- and 500-levels that require Mann-Whitney test to explain differences spotted in Kruskal-Wallis test. Kruskal-Wallis test for the 300-level was not significant and hence there was no need for pair-wise comparisons. The Mann-Whitney results show that performance of students with NCE and GCE A/L are better than those of the SSC holders in the first year (100-level) at .05 level of significant. In the final year (500-level), the result shows that NCE holders are better than both the SSC and GCE A/L holders.

In the case of Business Administration students, the Kruskal-Wallis test show that there were some significant differences in the performance of the four categories of students at the 100- and 300-levels, with p-levels (of the test) being 0.0 and 0.037 respectively. The differences disappear in year 5 (Table 6a).

The Mann-Whitney U test show that GCE A/L holders' performance was significantly better than others at the 100-level. At the 300-level the GCE A/L certificate holders are better than the SSC and NCE holders.

The study found that the difference in students' performance at the 100-level caused mainly by different entry qualifications and prior preparation disappears at the 500-level. This result is similar to findings in previous studies that made comparisons in the performance of groups of students, some of whom seem to be at a disadvantage at the entry level point when compared with those having higher qualifications or better prior preparations in a particular field of study. A case in point is a study by Canlar (1986) who found that students with prior exposure to Accounting at the College level performed better than those without any exposure in the first MBA-level Financial Accounting course; but the gap between them narrowed somewhat as the course progressed.

Results of the second aspect of our analyses are shown in Tables 7 and 8 for the Accounting and Business Administration programs respectively. We see in the Tables that the Direct Entry (DE) students performed significantly better than the other categories of students at the 300- and 500-levels. It gives a justification for the exemption from the first two levels granted to these category of students due to their high level performance at prior tertiary and professional education.

The result of the first aspect of our study shows that apart from entry qualifications, other factors that were not included in our investigation are at play to determine the performance of the different categories of students at the various levels. The narrowing down of the differences between the performance of the various categories could be explained by the fact that since these students are exposed to the same learning environment, tutors and materials, the disadvantage noticed at the point of entry would normally disappear.

# Kruskal-Wallis test of equality of median performance of students admitted with entry qualifications of SSC, OND, NCE, and GCE A/L (Accounting and Business Administration)

Level of Study	P-Level of the Test
100 Level	0.054
300 Level	0.282
500 Level	0.021

### Table 5a: P-Level of Kruskal-Wallis Test: Accounting.

### Table 5b: P-Level of the Tests: 100-Level Accounting.

		Mode of Entry				
		SSCE	OND	NCE	A-levels	
Mode of	SSCE		0.397	0.031*	0.011*	
Entry	OND			0.090	0.074	
	NCE				0.117	
	A-levels					

### Table 5c: Mean Ranks: 100-Level Accounting.

SSCE	127.33	OND	75.05
OND	130.19	NCE	85.29
SSCE	141.25	OND	47.08
NCE	263.82	A-Levels	55.64
SSCE	113.41	NCE	59.5
A-Levels	140.39	A-Levels	76.61

			Mode of Entry			
		SSC	OND	NCE	A-levels	
Mode	SSC		0.082	$0.005^{*}$	0.273	
of	OND			0.444	0.051	
Entry	NCE				$0.004^{*}$	
	A-levels					

### Table 5d: P-Level of the tests: 500-Level Accounting.

### Table 5e: Mean Ranks: 500-Level Accounting

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SSCE	48.98	OND	29.05
OND	59.2	NCE	29.74
SSCE	54.51	OND	22.03
NCE	71.5	A-Levels	22.22
SSCE	56.6	NCE	39.43
A-Levels	52.4	A-Levels	26.88

Table 6a: P-Level of Kruskal-Wallis test: Business Administration.

Level of Study	P-Level of the Test
100-Level	0.0
300-Level	0.037
500-Level	0.121

### Table 6b: P-Level of the tests: 100-Level Business Administration.

			Mode of Entry				
		SSC	OND	NCE	A-levels		
Mode of	SSC		0.445	0.083	$0.000^{*}$		
Entry	OND			0.132	$0.000^*$		
	NCE				$0.005^{*}$		
	A-levels						

### Table 6c: Mean Ranks: 100-Level Business Administration.

SSC	191.61	OND	71.22
OND	193.54	NCE	79.15
SSC	184.46	OND	53.71
NCE	204.56	A-Levels	78.43
SSC	167.9	NCE	53.0
A-Levels	232.34	A-Levels	69.32

### Table 6d: P-Level of the Tests: 300-Level Business Administration

			Mode of Entry				
		SSC	OND	NCE	A-levels		
Mode	SSC		0.099	0.099	$0.002^{*}$		
of	OND			0.491	0.074		
Entry	NCE				$0.015^{*}$		
	A-levels						

SSCE	120.19	OND	40.58
OND	137.27	NCE	40.45
SSCE	126.68	OND	29.65
NCE	142.18	A-Levels	39.45
SSCE	117.01	NCE	35.41
A-Levels	154.88	A-Levels	46.73

#### Table 6e: Mean Ranks: 300-Level Business Administration

 Table 7a: P-Level of the tests:
 Direct Entry (DE) students and others - Accounting

300-Level	500-Level
$0.000^{*}$	$0.000^{*}$

Table 7b: Mean Ranks: Direct Entry (DE) students and others - Accounting

	300-Level	500-Level
DE	110.21	59.30
Others	41.96	26.04

Table 8a: P-Level of the tests: Direct Entry students and others - Business Administration

300-Level	500-Level
$0.000^{*}$	$0.000^{*}$

Table 8b: Mean Ranks: Direct Entry students and others – Business Administration

	300-Level	500-Level
DE	151.84	65.46
Others	105.19	43.43

### **5. SUMMARY AND CONCLUSIONS**

The purpose of this study was to provide some insight into the effect of varied entry qualifications on the performance of undergraduate ODL students. The Kruskal-Wallis test was used to compare the performance of students admitted within four categories of entry qualifications in the Accounting and Business Administration programs of the Distance Learning Institute, of the University of Lagos. Some significant differences were noticed showing that the higher the entry qualification, the better the quality of students and their performance on the programs, as confirmed by pair-wise tests that was also done using the Mann-Whitney U test.

The study revealed the exclusion of certain set of HND certificate holders is justified. This can be explained by the length of time required (five years) for completion of the course. Hence the policy of giving certain categories of HND certificate holders and full professionals exemption from the first two years of the program really paid off as shown in the findings of the study. It encouraged many candidates in these categories that were previously excluded to seek and obtain admission into the programs at enhanced level, making for the widening of access to the degree programs of the University of Lagos.

The Nigerian educational system presently has the challenge of inadequate access to higher education owing to the fact that demand far outstrips supply in the conventional universities and tertiary educational institutions (Ramon-Yusuf, 2010; Okebukola, 2013). The basic lessons learnt from this study, could be applied to partly tackle the afore-mentioned challenge. This call for a careful consideration of putting in place admission policies, similar to what we have in DLI, in various educational disciplines and institutions that would widen access to higher education without compromising standards.

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