

Performance analysis of students' in the ESEFA short course at University of Ibadan

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Abstract

As an Enterprise Systems Education For Africa (ESEFA) partner, University of Ibadan (UI), has rigourously and enthusiastically promoted the knowledge of Enterprise Systems to students by organizing training sessions. The training sessions have been well attended and successes recorded. In order to meet growing demand, the UI-ESEFA team needed to evaluate the performance of the participants in the training and identify factors that reduce excellent academic performance. This work is an evaluation of three of the four training sessions held using class size, scores and gender as parameters. The data used was collected from registration data and the ESEFA website. The analysis was done using descriptive statistics. The results indicate that gender does not affect the success potential of a participant but the class size will.

Keywords

ESEFA, online examination, University of Ibadan, Students, performance

Introduction

The University of Ibadan (UI) was established some 67 years ago. The University, which took off with academic programmes in Arts, Science and Medicine, is now a comprehensive citadel of learning with academic programmes in thirteen Faculties namely, Arts, Science, Basic Medical Sciences, Clinical Sciences, Agriculture and Forestry, the Social Sciences, Education, Veterinary Medicine, Pharmacy, Technology, Law, Public Health and Dentistry. The Faculties of the Basic Medical Sciences, Clinical Sciences, Public Health and Dentistry are organized as a College of Medicine. The University has other academic units among which are: School of Business (UISB).

The University of Ibadan Postgraduate School is, well acknowledged within and outside the country as one of the largest in Africa and the flagship of Postgraduate Education in Nigeria as it produces the much required human resources for the entire Nigerian University system, the Nigerian public and private sectors and beyond. The Postgraduate School enrolment takes about 50% of the entire student enrolment. University of Ibadan produces an average of 3,000 Masters & 250 Ph.Ds every year.

Through its alumni and alumnae, the University of Ibadan has, in the past six decades contributed significantly to the political, industrial, economic and cultural development of Nigeria.

The Enterprise Systems Education For Africa (ESEFA) aims to develop an Enterprise Systems (ES) education platform, curriculum and community for Sub-Saharan Africa (SSA). It started in September 2013 as a partnership between the University of Cape Town's (UCT) Department of Information Systems in the Faculty of Commerce, the Otto-von-Guericke University Magdeburg (OVGU) in Germany and market leader SAP with its SAP University Alliances programme. The University of Ibadan became an ESEFA partner in August 2014. The ESEFA objectives include teaching enterprise systems fundamentals to university students in various disciplines so as to prepare them for the labour market.

University of Ibadan, Nigeria is one of the ten universities that has signed a partnership to train and develop African human capacity to handle enterprise systems for various sectors. The ESEFA team at the University of Ibadan is made of lecturers from Industrial and Production Engineering, Computer Science and Agricultural Economics. The UI-ESEFA team had its train-the-lecturer workshop in December, 2014 at African University of Communications Campus

(AUCC), Accra, Ghana. The team has since held four 5-day short courses for students of the University of Ibadan.

Ensuring student participation and success requires a lot of planning, presentation and localization of the teaching materials for easy understanding. Students from Economics, Industrial and Production Engineering, Computer Science and Agricultural Economics have participated in the classes at University of Ibadan. This work seeks to evaluate the performance of students in the end-of-course examinations using gender and class size as parameters.

Literature Review

In order to evaluate the student performance, previous studies were examined and studied for the best approach. The next few paragraphs presents a review of some work done on student performance evaluation.

A study of academic performance in Pakistan by Mushtaq & Khan (2012), focused on four factors: communication, learning facilities, proper guidance and family stress. The study population was students in private colleges in Pakistan. The work also identified other factors such as attendance in the class, family income, and mother's and father's education, teacher-student ratio, presence of trained teacher in school, sex of student and distance of school as reported by Raychaudury et al. (2010). Data was collected via questionnaire from the students and analyzed. The results indicate that only three of the four factors investigated affect student performance. The factors are communication, learning facilities and proper guidance. The ESEFA programme curriculum and implementation were designed to provide the three factors to participants.

Adegoke et al. (2013) investigated the impact of attendance for an information technology related course at a tertiary institution in Nigeria. Attendance was marked by the lecturer at the end of each contact with the students. Data from 598 students were analyzed using regression and correlation statistical tools. The result of the analysis revealed a positive correlation between class attendance and students performance in the examination. The ESEFA programme requires that student's sign-in daily for the period of the course.

Akinsolu (2010) did a study among public secondary schools in Nigeria to determine if the teacher's qualifications affected the students' academic performance. The study used 21 secondary schools in Osun State and the Senior School Certificate examination results for five years. The analysis showed that teacher's qualification, experience and teacher-student ratio affected the

performance of students. However, Musau and Abere (2015) reported that in Kenya teacher qualification was not a determinant of student academic performance. In the ESEFA short courses at University of Ibadan, all instructors are qualified in their area of expertise, have been teaching for more than 5 years and each class has 2 instructors and 3 assistants.

In another part of Nigeria, teacher effectiveness as a factor affecting student performance was studied by Akiri & Ugborugbo (2009). The study involved 979 teachers, made up of 450 males and 519 females, drawn from 72 out of the total of 361 public secondary schools in the State. Academic performance records of 50 students per teacher, which is 48,950 students' scores were used. Two questionnaires were used to collect data for the study. The results showed that although effective teachers produced performing students, the observed differences in students' performance were not statistically significant. This implies that the instructor is not a determinant of student success in the ESEFA programme.

The University of Binghamton, United States of America studied the impact of class size on student's academic performance and retention. Class size refers to the actual number of pupils taught by a teacher at a particular time. Retention is the ability to remember what was taught in class at a later date. Keil and Partell (1998) did this study as a response for increased productivity from instructors. Increasing class size will lead to reduction in retention, while reducing class size denies students of learning opportunities. Keil and Partell (1998) called for a balanced approach to the issue and so should the ESEFA programme. This view is upheld by Ehrenberg et al (2001).

Methodology

This work used the qualitative approach to determine the performance of students in the ESEFA 5-day short course at University of Ibadan. The data used was collected from the ESEFA website after the end-of-course examination was concluded. The data used comprises of three groups of students who took the examinations on separate days after their courses. The groups are

Group	Examination Date
A (1)	April 17, 2015
B (2)	April 24, 2015
C (3)	June 19, 2015

Table 1: Examination Sessions and Dates

Simple descriptive and crosstabs were used to analyze the performance of the students. The Crosstabs procedure gives two-way and multi-way tables and provides a variety of tests and measures of association for the tables. The chi-square test examines the possibility of a relationship in the variables while the symmetric and directional measures indicate the significance and reduction of errors of miss-specification respectively.

Results and Discussion

Grades and Performance of Participants

The data from three groups of students who attended the three short courses organized were analyzed using descriptive statistics.

Item	Frequency	Percent	Cumulative Percent
Sex			
Male	58	63.0	63.0
Female	34	37.0	100.0
Total	92	100.0	
Examination Group			
April 17, 2015	21	22.8	22.8
April 24, 2015	27	29.3	52.2
June 19, 2015	44	47.8	100.0
Total	92	100	
Success Rate			
April 17, 2015	17		
April 24, 2015	21		
June 19, 2015	33		

Table 2: Gender Participation, Session Population and Success Rate

The workshops had female participants. There were 34 female participants out of the 92 participants who have attended so far. It indicates this as 37 per cent participation. It also provides the number of students per training session. Training session 3 had almost double the number of participants of the two previous workshops. This could be due to increased marketing by the instructors and a keen interest generated by the desire to be Sap certified. Certainly ESEFA brings the certification process closer to participants. The number of failures

increases as the class size increases. This suggests that performance at ESEFA training sessions in UI will be best with class sizes not exceeding 30 participants.

The specific scores obtained in each course are given in table 3. Enterprise Knowledge (EK) appears to be the favorite of all participants since it has the highest number of participants. This is followed by the Sales to Order Process (SOP) and Inventory Management. But it should be noted that most of these scores occurred in the 10-19.9 range, particularly for SOP and EK, which suggest a median score. On the other hand, about 60 percent of participants scored between 20 and 30 in the Procure-to-Pay (PtP). The scores could be an indication of participants' interest; the mode of delivery and participants' previous knowledge or familiarity with the course material. Of the 92 participants, 71 percent passed and will be awarded the ESEFA Fundamentals Certificate. A summary of the statistic given in table 4 supports the overall pattern as reflected in the frequency distribution.

Interval	Frequency	Percent	Cumulative Percent
Enterprise Knowledge			
0-9.99	16	17.4	17.4
10-19.99	71	77.2	94.6
20-29.99	5	5.4	100.0
Total	92	100.0	
Procure-to-Pay			
0-9.99	0	0.0	0.0
10-19.99	37	40.2	40.2
20-29.99	55	59.8	100.0
Total	92	100.0	
Sales Order Process			
0-9.99	6	6.5	6.5
10-19.99	63	68.5	75.0
20-29.99	23	25.0	100.0
Total	92	100.0	
Inventory Management			
0-9.99	0	0	0
10-19.99	35	38.0	38.0

20-29.99	57	62.0	100.0
Total	92	100.0	
Overall Performance			
Fail	21	22.8	22.8
Pass	71	77.2	100.0

Tables 3: Grade Distribution and Overall performance

	N	Minimum	Maximum	Mean	Std. Deviation
Overall Grade	92	36	83	58.27	10.449
ES Knowledge	92	2	20	12.63	4.048
Procurement	92	10	27	19.48	4.163
Sales	92	5	25	16.04	4.388
Inventory Management	92	0	15	10.04	2.801

Table 4: Descriptive Statistics of Cores

Gender-Disaggregated Performance Analysis

The analysis in Table 5 shows that the male participants failed twice as much as the women i.e. 14 male participants failed while only 7 female participants failed. The average score of all participants (male & female) who passed is in the range 60% – 70%. The results presented do not take into account the re-sit results. It is possible that some of the participants would have taken the examination again and passed. The Chi-square results that there is a relationship between the grades and gender and that what is observed is not due to chance but real.

Gender		Fail/Pass	Total
Male	Overall	<=39.99	2*
	Grade	40-49.99	10
		50-59.99	20
		60-69.99	20
		70-79.99	5
			5

		80-89.99	0	1	1
	Total		14	44	58
Female	Overall	<=39.99	3	0	3*
	Grade	40-59.99	4	0	4
		50-69.99	0	7	7
		60-79.99	0	17	17
		70-79.99	0	2	2
		80-89.99	0	1	1
	Total		7	27	34
Total	Overall	<=39.99	5	0	5*
	Grade	40-49.99	14	0	14
		50-59.99	2	25	27
		60-69.99	0	37	37
		70-79.99	0	7	7
		80-89.99	0	2	2
Total		21	71	92	

*Pearson Chi-square, Likelihood ratio and Linear by Linear Association are significant at 95 % confidence interval

Table 5: Examination Scores by Gender

Conclusion

The University of Ibadan ESEFA group has had three training sessions for 92 students. The demand for the Enterprise Systems training is increasing. A study of student performance in the training sessions held so far indicate that success is not based on gender. Class size reduces retention and thus increases failure rate. Class size for subsequent training sessions should not exceed 30 participants. Teacher's effectiveness and class attendance were not significant factors to the students' performance.

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Appendix

Chi-Square Tests				
Gender		Value	Df	Asymp. Sig. (2-sided)
Male	Pearson Chi-Square	48.170 ^a	5	.000
	Likelihood Ratio	51.106	5	.000
	Linear-by-Linear Association	30.505	1	.000
	N of Valid Cases	58		
Female	Pearson Chi-Square	34.000 ^b	5	.000

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	Likelihood Ratio	34.575	5	.000
	Linear-by-Linear	22.272	1	.000
	Association			
	N of Valid Cases	34		
Total	Pearson Chi-Square	81.488	5	.000
		^c		
	Likelihood Ratio	84.580	5	.000
	Linear-by-Linear	53.089	1	.000
	Association			
	N of Valid Cases	92		