

Lecturers' Competences and Students' Academic Performance

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ABSTRACT: The objective of this research was to analyze the effect of lecturers' competences on Students' academic performance among higher education and training students. A sample of 115 students was selected and used for the study using simple random sampling procedure. A structured questionnaire was used to gather data on students' level of agreement on the extent to which distinct variables measuring lecturers' determine their academic performance. The data collected using the survey instrument was processed and analysed using SPSS statistical package. The scale reliability Cronbach's alpha of 0.822 and the sampling adequacy Keiser-Meyer-Olkin of 0.769; with a total declared variance of 66.519 percent were obtained from the analysis. Four hypotheses were tested using Stepwise regression approach. Results indicate that subject knowledge, teaching skills, lecturer attendance and lecturer attitude have significant positive influence on students' academic performance.

KEYWORDS: students, academic performance, lecturers' competences

I. INTRODUCTION

Teachers are regarded as the most imperative school-based factor that influences students' achievement levels. Poor academic performance by numerous students in both higher education and training public and private institutions has gained significant attention by most researchers in the field of educational management. Previous studies on the subject on students' academic performance by AL-Mutairi (2011) and Kang'ahi et al (2012) indicate although there exist several factors that influence students' academic performances, but lecturer competence remains one of the major determinants of students' academic achievements. According to Adunola (2011) and Ganyaupfu (2013), teaching is a collaborative process which encompasses interaction by both learners and the lecturer. Following Akiri & Ugborugbo (2009), lecturer competence in teaching process is a multidimensional concept that measures numerous interrelated aspects of sharing knowledge with learners which include communication skills, subject matter expertise, lecturer attendance, teaching skills and lecturer attitude. Therefore, consistent evaluation of the aforementioned distinct factors lecturer competence is imperative since in practice, the competence of a lecturer is directly measured by students' academic achievements (Schacter & Thum, 2004; Adediwura & Tayo, 2007; and Adu & Olatundun, 2007). For instance, Adunola (2011) accentuated that the teaching methods adopted by lecturers should be aligned to the subject content and specific outcomes in order to effectively enhance transmission of knowledge and information from the lecturer to the students. According to Chang (2010), each individual learner interprets and responds to questions in a unique way (Chang, 2010), it is therefore crucial for lecturers to regularly review their teaching competences in respect of subject knowledge, lecturer attendance, teaching skills and lecturer attitude.

1.1 Research Problem

Suboptimal academic performances by numerous students at tertiary levels have been alleged by some learners to be attributed to poor lecturers' subject knowledge, lecturer attendance, teaching skills and lecturer attitude.

1.2 Research Question

What are the distinct effects of lecturers' subject knowledge, lecturer attendance, teaching skills and lecturer attitude on students' academic performances?

1.3 Research Objective

The aim of this study was to measure the distinct effects of lecturers' subject knowledge, lecturer attendance, teaching skills and lecturer attitude on students' academic performances?

1.4 Null Hypotheses

- a) There is a significant positive correlation between the lecturer's subject knowledge and students' academic performances

- b) There is a significant positive correlation between the lecturer's teaching skills and students' academic performances
- c) There is a significant positive correlation between the lecturer's attendance and students' academic performances
- d) There is a significant positive correlation between lecturer's attitude and students' academic performances

1.5 Significance of the Study

The empirical investigation of the distinct effects of diverse elements of lecturer competence on students' academic performance in education management remains an area of substantial interest to education researchers. This research study provides some relevant insights on the distinct magnitudes to which distinct lecturer competence elements affect students' academic performances. Moreover, such knowledge will help academic staff in designing more effective teaching strategies that can improve learners' academic achievements.

II. LITERATURE REVIEW

2.1 Student's Academic Performance

There exist unprejudiced evidence from previous empirical literature that student's academic performance can be assessed using numerous methodologies (Ganyaupfu, 2013). Although some studies use grade point averages in measuring students' academic achievements, this research adopts the procedure used by Hijaz & Naqvi (2006). The approach uses the average of overall marks of all courses studied by the learner per specific semester of the academic calendar year. The final academic performance results are computed from formative and summative assessments for the respective semester in consideration.

2.2 Lecturer Competence

According to Akiri & Ugborugbo (2009), that lecturer competence is regarded as a multidimensional construct teaching which encompasses numerous interconnected elements towards transformation of knowledge to learners. Previous studies conducted by Schacter & Thum (2004), Adediwura & Tayo (2007) and Adu & Olatundun, (2007) reveal that different elements of lecturer competence include lecturer's subject knowledge, teaching skills, lecturer attitude and lecturer attendance.

2.2.1 Subject Knowledge

According to Eggen & Kauchak (2001), there are three dimensions under which a teachers' knowledge of subject matter can be measured; namely content knowledge, pedagogical knowledge of content and general knowledge. The implications of these dimensions are that a lecturer cannot teach what he or she does not know. Adediwura & Tayo (2007) further emphasised existence of high correlation between what teachers subject knowledge and what they teach students. In line with these finding, Adediwura & Tayo (2007) further accentuated that the ability of a lecturer to teach effectively depends on the depth of knowledge the teacher possesses. Therefore, a lecturer whose understanding of the subject content is thorough uses clearer expressions comparative to those whose backgrounds of subject mastery are weaker.

2.2.2 Teaching Skills

The teaching skills of a lecturer can be measured based on the lecturer's abilities around comprehension and transformation of knowledge concepts to be imparted to learners (Ganyaupfu, 2013). Teaching requires one to first understand the specific outcomes of the topic as well as the subject matter structures of the respective discipline (Shulman, 1992). Therefore, comprehension of purpose is a very important element of lecturer competence. According to Shulman (1992), the educational purposes for engaging in teaching are to assist learners gain literacy, develop skills and values to function well in the society, equip them with opportunity to acquire and discover new information, enhance understandings of new concepts, enable students to enjoy their learning experiences, enhance learners' responsibility to become productive in the economy, contribute to the well-being of the social, economic and business community.

Moreover, the lecturer's ability to distinguish the knowledge base of his or her teaching lies at the intersection of content and pedagogy in the respective teacher's capacity to transform content knowledge into practices that are pedagogically influential and adaptive to numerous students' abilities and backgrounds (Glatthorn, 1990). Transformations require some combination effective presentation of ideas in the form of new analogies and metaphors, instructional selections, adaptation of student materials and activities that reflect the student's characteristics of student's learning styles and tailoring of adaptations to students in classrooms. Glatthorn (1990) further emphasized that it is also imperative that teachers consider the relevant aspects of

students' distinct abilities, languages, cultures, motivations and prior knowledge and skills that affect their responses to different forms of representations.

2.2.3 Lecturer's Attitude

Research in education policy reveals that lecturer attitude refers to consistent tendency by the teacher to react in a particular way; often positively or negatively toward an academic matter (Eggen & Kauchak, 2001). Another study by Fazio & Roskes (1994) indicates that attitude possesses both cognitive and emotional components which strongly influence the manner in which a teacher thinks and responses to specific experiences. In proceeding further with the analysis, Eggen & Kauchak (2001) found out that positive teachers' attitudes are fundamental to effective teaching and students' academic achievements. Another study by Brunning et al. (1999) indicated a number of elements that constitute teachers' attitudes that will facilitate a caring and supportive classroom environment. These elements include caring, enthusiasm, teaching efficacy, democratic practices to promote students' responsibility, effective use of lesson, constructive interaction with learners and high expectation to promote learners' motivation. Further analysis in this study found out that these factors are associated with increase in students' academic performances.

Lecturer Attendance

According to a study by Manlove & Elliott (1977) found that the overall academic performance of students an academic institution is negatively affected by high teacher absenteeism. Moreover, further analysis from the research found a correlation between teacher attendance and student achievement. Jacobs & Kritsonis (1997) conducted a study involving certain classes revealed that teachers who posted the highest level of absenteeism recorded the lowest scores of students' academic performances. Woods & Montagno (1997) purported that the high the teacher attendance rate becomes, the lower also the students' academic performances become.

Consistent with the above findings are the results from the study conducted by Pitkoff (1993). The study found out that teachers who received low performance markings missed a larger number of days than those who did not. This result provides an impetus for education administrators to develop lecturer development plans early in the academic year for low performing teachers than later in the respective academic year. However, Scott & McClellan (1990) discovered that the higher the degree obtained by the lecturer, the higher the number of days they became absent from the classroom. Additionally, Bruno (2000) purported that high absenteeism by certain teachers tend to lower the morale of remaining teachers, thereby resulting in high teacher turnover as other teachers tend to feel more burdened regarding additional planning for their absent colleague.

III. METHODOLOGY AND PROCEDURE

3.1 Introduction

This section describes the research design used, sample and sampling technique, data gathering, statistical validity and reliability of the research instrument; and the analytical technique applied.

3.2 Research Design

The research study was conducted based on descriptive survey and correlational designs. A survey design was chosen to ensure collection of information which precisely describes the nature of prevailing conditions at a specific point in time (Kang'ahi et al., 2012).

3.2 Sample and Sampling Technique

The population used for this research survey was tertiary students from private higher education and training institutions Ekurhuleni District, Gauteng province, South Africa. Using simple random sampling technique, the questionnaires were distributed to one hundred and forty five students ($n = 145$). The duly completed questionnaires were one hundred and fifteen ($n = 115$); comprising of 77.4% female ($n = 89$) and 22.6% male ($n = 26$) students. The study followed the sampling procedure used by Ganyaupfu (2013) and Kang'ahi et al. (2012) specified as below:

where:

$$n = \frac{\chi^2 N \hat{p} (1 - \hat{p})}{d^2 (N - 1) + \chi^2 \hat{p} (1 - \hat{p})} ; \quad (1)$$

n = required sample size
 N = the given population
 \hat{p} = population proportion; assumed to be 0.5
 d = the degree of accuracy at 0.05
 χ^2 = table value of chi-square (= 3.841 for 0.95 confidence interval)

3.3 Data Collection

Primary data was gathered through use of two instruments; namely the structured questionnaire and students' statements of academic results of all completed respective semester modules. The research instrument collected data on students' perceptions regarding lecturers' subject knowledge, lecturer attendance, teaching skills and lecturer attitude influence their academic performances. The students expressed their levels of agreement based on questionnaire anchored on a five point Likert scale from strongly disagree strongly agree.

3.4 Statistical Analysis

The results of the survey were analyzed using descriptive statistics and correlational techniques. The data gathered was processed and analyzed using SPSS version 21 statistical package for windows. Before conducting the correlational analysis, exploratory factor analysis, the Cronbach's alpha and KMO tests were computed to determine scale reliability and adequacy of the sampling size; respectively.

RESULTS AND ANALYSIS

4.1 Descriptive Statistics

The mean score statistics of the lecturer competence elements influencing students' academic performances were computed to reflect each distinct factor's level of importance (Table 1).

Table 1: Mean Scores of Dimensions

Dimension	Variables	Mean	SD	Eigenvalue	Percentage of variance
Subject knowledge	Comprehension Transformation	2.88	1.079	1.420	70.978
Teaching skills	Instruction Evaluation	2.72	0.992	1.413	70.659
Lecturer attitude	Enthusiasm Caring	3.07	0.770	1.375	68.736
Lecturer attendance	Notional hours Tutorial hours	3.04	0.877	1.336	66.797

The results indicate that lecturer attitude has the highest mean score (=3.07); while the least mean score being for teaching skill (=2.72). Provided below are results on sampling adequacy.

4.2 Validity of Instrument

The Kaiser-Meyer-Olkin (KMO = 0.769) analysis was undertaken to determine suitability of the size of sampling for factor analysis.

Table 2: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.769
Bartlett's Test of Sphericity	Approx. Chi-Square	235.650
	df	6
	Sig.	.000

The KMO value (= 0.769) indicates presence of sampling adequacy; while the Bartlett's test of sphericity of the research items of 52.639 ($p < 0.05$) confirmed that factor analysis could be performed on the data collected using the research instrument.

Table 3: Correlation Matrix

		Teaching skills	Subject knowledge	Lecturer attendance	Lecturer attitude
Correlation	Teaching skills	1.000	.564	.630	.535
	Subject knowledge	.564	1.000	.478	.417
	Lecturer attendance	.630	.478	1.000	.683
	Lecturer attitude	.535	.417	.683	1.000
Sig. (1-tailed)	Teaching skills		.000	.000	.000
	Subject knowledge	.000		.000	.000
	Lecturer attendance	.000	.000		.000
	Lecturer attitude	.000	.000	.000	
a. Determinant = .203					

As indicated by the determinant of 0.203, the scale was observed to be one dimensional; indicating that the items are not an identity matrix. The highest correlation (= 0.683) exists between lecturer attendance and lecturer attitude.

Table 4: Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.661	66.519	66.519	2.661	66.519	66.519
2	.640	16.004	82.523			
3	.404	10.092	92.615			
4	.295	7.385	100.000			
Extraction Method: Principal Component Analysis.						

The results presented in Table 4 above reveal that the total declared variance computed for the single factor scale indicate that approximately 66.519 percent cumulative variance of factors under analysis could be explained by the variables used. Moreover, only component with an Eigen value exceeding 1 was extracted from the analysis (Table 5).

Table 5: Component Matrix

	Component
	1
Teaching skills	.841
Subject knowledge	.738
Lecturer attendance	.865
Lecturer attitude	.812
Extraction Method: Principal Component Analysis.	
a. 1 component extracted.	

The principal component of the lecturer competence variables determining students' academic performance was extracted via the Varimax Keiser Normalization rotation method. Varimax-rotation was performed on the constituent variables representing the different constructs to empirically validate the theoretical structure of the scale. Following convergence of the rotation, only one component was extracted.

4.3 Scale Reliability

To determine the degree to which the chosen set of items measured a single unidimensional latent construct, internal consistency of the questionnaire items was examined using the Cronbach's alpha value criterion computed following the specification below:

$$\alpha = \frac{K}{K-1} \left(1 - \frac{\sum_{i=1}^K \sigma_{Y_i}^2}{\sigma_X^2} \right) ; \text{ where: } \sigma_X^2 = \text{variance of observed total scores} \quad (2)$$

$\sigma_{Y_i}^2 = \text{variance of item } i \text{ for the current sample}$

Table 6: Reliability of Total Items

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	No. of Items
0.822	0.831	4

The value of the Cronbach's alpha (= 0.822) indicate that the survey instrument's items were statistically reliable; thus the items measured a single unidimensional latent construct.

Table 7: Reliability of Individual Items

Variable	Cronbach's Alpha	No. of Items
Subject knowledge	0.591	2
Teaching skill	0.501	2
Lecturer attitude	0.543	2
Lecturer attendance	0.572	2

The reliability results of the distinct dimensions are presented in Table 7. The results are statistically significant considering the number of items used for each construct. Presented in Table 8 below are the correlation results obtained from the stepwise regression model.

4.4 Empirical Model and Estimation

The estimation of the impact of lecturer's subject knowledge, teaching skills, lecturer attitude and lecturer was conducted using stepwise regression procedure to select predictor variables that possess statistical significance in determining students' academic performance. Following the procedure applied by Ganyaupfu (2013), the students' linear education production function was estimated following the specification:

$$AP = \alpha + \beta_1 SK + \beta_2 TS + \beta_3 LA + \beta_4 LCA + e_t \quad (3)$$

expectations: $\beta_1 > 0$; $\beta_2 > 0$; $\beta_3 > 0$; $\beta_4 > 0$;

where AP represents the education production function, SK is the subject knowledge, TS represents teaching skills, LA denotes lecturer attitude, LCA represents lecturer attendance and e_t is the error term.

4.5 Stepwise Regression

Model Summary

Overall, the estimated model indicated that about 88.0% (Adj. $R^2 = 88.0$) variation in students' academic performance was determined by teaching skills ($t = 9.938$), subject knowledge ($t = 8.668$), lecturer attendance ($t = 6.412$) and lecturer attitude ($t = 4.219$). The model's F-test value (= 276.045; significant at 0.05 level) also indicated that the model was statistically significant.

Table 7: Models Results^a

Variable	Model_1	Model_2	Model_3	Model_4
Teaching skills	.831* [18.219] (.037)	.557* [11.889] (.038)	.420* [10.091] (.034)	.396* [9.938] (.032)
Lecturer attendance	----	.434* [9.259] (.043)	.370* [9.449] (.036)	.277* [6.412] (.039)
Subject knowledge	----	----	.315* [8.550] (.027)	.303* [8.668] (.026)
Lecturer attitude	----	----	----	.167* [4.219] (.041)
				R² = .883 Adj. R² = 0.880 F_(.05; 4) = 276.045 DW statistic = 2.005

a. Dependent Variable: Assessment Result

Note: * significant at 5%; [values] represent t-statistics; and (values) represent standard errors

Based on model_4 stepwise regression results, about 88% overall variation in students' academic performance was accounted for by lecturer's subject knowledge, teaching skills, lecturer attendance and lecturer attitude. The F-test value (= 276.045) shows that the model was statistically significant at 5% level. All the dimensions of lecturer competence specified have statistically significant positive impacts on students' academic performances. Individually, the dimensions with significantly higher influences on students' academic performances are lecturer teaching skills; which accounted for 39.6 percent followed by subject knowledge which accounted for about 30.3 percent. Lecturer attendance and lecturer attitude accounted for 27.7 percent and 16.7 percent influence in students' academic performance; respectively. Hence, the null hypotheses that lecturer teaching skills, subject knowledge, lecturer attitude and lecturer attendance significant positive effects on students' academic performance cannot be rejected.

IV. CONCLUSION AND RECOMMENDATIONS

The study was undertaken to examine the influence of distinct dimensions of lecturer competence; specifically lecturer teaching skills, subject knowledge, lecturer attitude and lecturer attendance. The study found that these factors have positive significant influence on students' academic performances. The findings are consistent with the previous studies by Eggen & Kauchak (2001), Schacter & Thum (2004) and Starr (2002) who found high positive correlations between teacher's competence and students' academic achievements. In this respect, it can be deduced that provision of training to teachers on the specified components of lecturer competence can effectively improve quality of teaching learning towards attainment of high students' academic performances.

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