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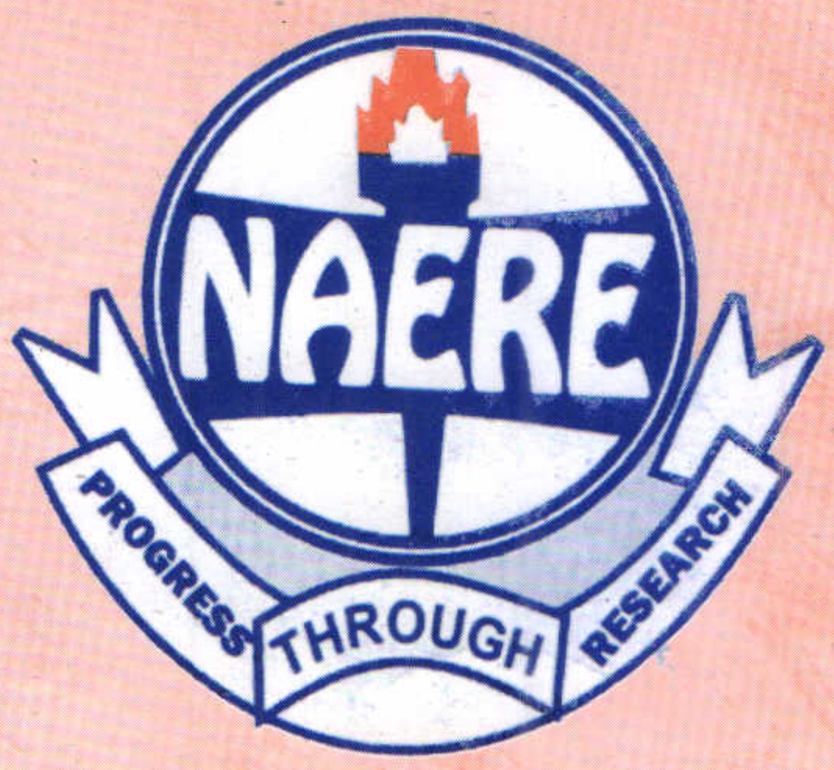

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FUNCTIONALITY OF TERTIARY INSTITUTIONS AND THE DEVELOPMENT OF GENERIC GRADUATE OUTCOMES

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ABSTRACT

This study describes the attributes of functional tertiary institutions in relation with the attributes of generic graduate skills. Three graduate outcome variables (discipline-knowledge and skills, communication and problem solving, and ethical and social sensitivity) were discussed to be influenced by four attributes of functional tertiary institutions (Teaching Quality, Programme Quality, Good Teaching and Learning Community). A sample of four hundred and fifty students randomly selected from three cohorts (First year students, Final year students and Post-Graduate course work students) of three randomly selected federal universities were used for the study. An adapted instrument tagged "Students Experience Survey Questionnaire" with Cronbach's alpha reliability value of 0.74 was used to collect data from the sample. Using Analysis of Variance and Pearson's Product Moment Correlation Co-efficient, the result revealed that there is no significant difference in the functionality of learning across all the institutions of learning selected. However, a significant difference was found in the generic graduate attributes among the cohort of the students. The result further revealed a significant relationship between functional learning institutions and generic graduate outcomes. It was recommended that the interactive, social and collaborative team teaching, capture in the notion of learning community are the most determinant of graduate outcomes and so should be included in the focus of attempts at enhancing the quality of student learning.

Introduction

The notion of people about fundamental learning institutions is rooted in the observation that knowledge and learning are a natural part of the life of the institutions that share values, beliefs, languages and ways of doing things (Bransford, Brown &

Cocking; 1999). Knowledge, in this view, is inseparable from the institutions in which it occurs. Wenger (1997) for example, speaks of learning institutions in term of "Communities of Practices". He believes authentic communities of practice are characterized by mutual engagement, joint enterprises shared repertoire, and negotiated meaning, that authentic learning environments share such characteristics, and that all learning environments should work to develop them. An important part of Wenger's notion of communities of practice is the idea that all learning is situated in practice and that all practice is essentially social in nature.

The increasing value placed on developing graduate attributes in tertiary education has been influenced by three major factors: the popular perspective that education is a lifelong process; a greater focus on the relationship between education and the development of outcomes of graduates; and the development of outcomes measures as a part of the quality movement (Caverly & MacDonald, 2002). In relation to this third factor, the quality of teaching and learning has been an important policy issue on the agendas of tertiary institutions and government for over a decade in this country, and the importance of demonstrating quality is becoming vital at all levels.

This resulted into using the approach of assessing performance of student outcomes against the institution's disclosed objectives. The commitment to an outcomes focused approach to comparative quality assessment has brought about the assessment of the generic skills of new and graduating tertiary institutions students. This is a concrete manifestation of the commitment to focusing on the "value added" to individuals by attaining a tertiary education. Such commitment is evident in the most recent government review of the higher education sector.

Generic graduate outcomes can be seen as the skills, personal attributes and values which should be acquired by all graduates regardless of their discipline or field of study and may be considered as the central achievements of the higher education process. Such attributes or qualities can include critical thinking, intellectual curiosity, problem solving, logical and independent thought, communication and information management skills, intellectual rigour, creativity and imagination, ethical practice, integrity and tolerance. Some would also argue that while disciplinary knowledge is transient, the opportunity to develop generic skills such as communication, teamwork and leadership, analytical and critical thinking is an important aspect in any undergraduate curriculum (Johnson, 2000).

Reports in the literature regarding the educational methods of teaching and learning environments best suited to facilitating the development of graduate attributes or outcomes tend to be theoretical or anecdotal, with few in-depth empirically-based studies investigating relationships between such variables and specific graduate learning outcomes. However, there are consistent themes which constantly recur in the literature indicating that teaching methods which allow for and encourage, peer and student-staff interaction, and the creation of a socially integrative learning environment, are most likely to enhance graduate attributes development. For example, Ruberg, Moore and Taylor (1996) found that the quality of peer interactions had a significant

impact on students intellectual and social skills development. Johnson (2001) suggested that teaching approaches which encourage students to engaged in self-directed and peer-assisted learning, those which involve experiential and real-world learning, methods which make use of resources-based and problem-based learning, and those which include reflective practice and critical awareness are best in supporting the development of generic skills. Furthermore, Poole (2000) suggest that student-centred and process-focussed approaches to teaching and learning are most likely to promote generic skills development, including those which involve the use of modelling, group-work and discussion strategies and encourage students to be meta-cognitive (to plan, monitor and adapt their learning).

The above literatures depict that there is a foregrounding of student/student and student/teacher learning collaborations focused on a variety of engaging learning tasks and socially integrative learning environments. It indicates that generic skills tend to be best developed in contexts of high interaction, collaboration with peers and faculty, and engagement in a community of learning. It was in agreement with the above that Gorham (1988) argue that active engagement between students and lecturers with opportunities for social interaction within a collaborative teaching and learning environment are key determinants to the development of critical thinking skills. Andrew (2000) found that social integration (e.g making friends at college, spending time on campus, satisfaction with social experiences) and academic integration (e.g being interested in and applying oneself to studies, satisfaction with academic experiences) had the greatest influence on communication skills and critical thinking skills respectively.

It is pertinent that generic skills tend to be best developed in contexts of high interaction, collaboration with peers and faculty, and engagement in a community of learning. It shows that a learning community can be broadly characterized as a collective of learners in a learning context that emphasizes social interaction and identity over individual action, collaboration among students and active engagement in problem-solving. Therefore, it was seen as important in this study to explore teaching and programme quality as obvious students' determinates of the development of graduate attributes. This raises the question of whether the development of generic graduate skills is influenced by the functionality of the learning communities. The following hypotheses were generated for the study:

- There is no significant difference in the functionality of learning institutions among the three cohorts of students.
- There is no significant difference in the functionality of learning institutions across the three institutions.
- There is no significant difference in the generic graduate outcomes among the cohorts of students.
- There is no significant relationship between functionality of learning institutions and generic graduate outcomes.

Methodology

A descriptive survey research design was used for the study. Using multistage stratified sampling techniques, a total sample size of four hundred and fifty respondents were selected among three cohorts of students from three federal universities in south western region of the country (University of Lagos (UNILAG), University of Ibadan (UI), University of Agriculture, Abeokuta (UNAB)). The cohorts of students were: first-year students; final-year undergraduate students and post-graduate course work students. (A sample size of fifty students was selected in each cohort across the three universities, thus, having a total number of 450 students as sample size). Student Experience Survey Questionnaire was used as an instrument for data collection. This instrument was adapted from the Queensland Student Experience Survey (UQSES) which was developed in 2001 by the Teaching and Educational Development Institute of University of Queensland, Australia. The Questionnaire is divided into seven major sections apart from the demographic data section: four attributes in relation to functionality of learning institution and three attributes of generic graduate outcomes. The major sections are: Teaching Quality (TQ); Programme Quality (PQ); Good Teaching Scale (GTS); Learning Community Scale (LCS); Communication and Problem Solving (CPS); Ethical and Social Sensitivity (ESS); and Discipline-Specific Knowledge Skills (DKS). The items in the questionnaire were validated by two experts in the field of test construction. A pilot study of the instrument was conducted and the reliability value of 0.74 was established using Cronbach's alpha method. The data collected were analysed using percentage, Pearson Product Moment Correlation and Analysis of Variance.

Result

The analyses were based on the data collected from the first year students, the final year undergraduate students and the post-graduate course work students across the three universities (N=450). Among the sample selected, male respondents were three hundred students with the percentage of 66.7% while the female respondents were one hundred and fifty students with the percentage of 33.3%.

Hypothesis One: *There is no significant difference in the functionality of learning institutions among the three cohorts of students.*

In order to test this hypothesis, the sum of data collected from the respondents on all the four attributes of functionality of learning institutions among the three cohorts of students were subjected to Analysis of Variance Statistics and the result is presented in table I below.

Table I: ***Summary of the Analysis on differences in functionality of learning institutions among the cohorts of students.***

	Sum of Squares	df	Mean Square	F	Sig.	Remark
Between Groups	788.093	2	394.047	118.133	.000	Significant
Within Groups	1491.027	447	3.336			
Total	2279.120	449				

The result in the above table shows that the F-value (118.133) is significant at 0.05 alpha level (p=0.00), hence the null hypothesis is rejected. This indicates that there is a significant difference in the functionality of learning institutions among the three cohorts of students. The reason for this might not be farfetched from the differences in the level and the experience each cohorts of students have gathered in the institutions. To show the direction of differences, scheffe post hoc analysis was conducted and the result is presented below.

Table 2: ***Scheffe Post hoc analysis on the direction of differences in functionality of learning institutions.***

Year of Study	N	Subset for Alpha =0.05		
		1	2	3
First Year Students	150	70.73		
Final Year Students	150		71.26	
Post Graduate Students	150			73.77
Sig.		1.000	1.000	1.000

The result in the table 2 above showed that three subsets were revealed concerning the differences in the functionality of learning institutions among the three cohorts of the students. First year students fall into one subset which was significantly different from the final year students that fall into the second subset. The postgraduate students falls into the third subset which was also significantly different from the second subset. It was further revealed that the postgraduate students had a higher mean of 73.77 which was significantly different from the final year students' mean of 71.26 and the first year students mean of 70.73.

Hypothesis Two: *There is no significant difference in the functionality of learning institutions across the three institutions.*

In testing the hypothesis, the sum of the data collected on the attributes of functionality of learning institutions across the three institutions were analysed using analysis of variance statistics. The result is presented in table 3 below.

Table 3: ***Summary of the analysis on differences in functionality of learning institutions across the institutions.***

	Sum of Squares	df	Mean Square	F	Sig	Remark
Between Groups	16.840	2	8.420	1.664	.191	Not
Within Groups	2262.280	447	5.061			Significant
Total	2279.120	449				

The result on the above table show that the F-value of 1.664 is not significant at 0.05 alpha level (p=0.191), hence we do not reject the null hypothesis. This means that there is no significant difference in the functionality of learning institutions across the three institutions. The three institutions are within the same region and learning communities, so there might not be any significant difference in functionalities of the learning institutions.

Hypothesis Three: *There is no significant difference in the generic graduate outcomes among the cohorts of students.*

In order to test the stated hypothesis three, the sum of the data collected from the respondents on the three attributes of generic graduate outcomes were analysed with the use of analysis of variance statistics. The result is presented in table 4 below.

Table 4: ***Summary of the ANOVA on differences in the generic graduate outcomes among the cohorts of students.***

	Sum of Squares	df	Mean Square	F	Sig.	Remark
Between Groups	26787.684	2	13393.842	2932.709	.000	Significant
Within Groups	2041.473	447	4.567			
Total	28829.158	449				

With the analysis shown in the above table, the F-value of 2932.71 is significant at 0.05 alpha level. Therefore, the null hypothesis is rejected. This indicates that there is a significant difference in the generic graduate outcomes among the cohorts of the students. It shows that the first year students, the final year students and the post-graduate students were different in their generic graduate outcomes. This resulted from the fact that the number of years, the teaching quality received and the skills acquired differs among the cohorts of students. To show the direction of differences in the generic graduate outcomes among the cohorts of students, scheffe post hoc analysis was conducted and the result is shown below.

Table 5: ***Scheffe post hoc analysis on the direction of differences in the generic graduate outcomes among the cohort of students.***

Year of Study	N	Subset for Alpha =0.05		
		1	2	3
First Year Students	150	36.40		
Final Year Students	150		50.986	
Post Graduate Students	150			54.10
Sig.		1.000	1.000	1.000

From the above table 5, it was shown that first year students fall into the first subset with a mean of 36.40 which was lower than the final year students' mean of 50.98 which fall into the second subset. The postgraduate students fall into the third subset with a mean of 54.10 which was significantly different from the second subset and also from the first subset.

Hypothesis Four: *There is no significant relationship between functionality of learning institutions and generic graduate outcomes.*

In testing the above stated hypothesis four, the sum of the data collected on the four attributes of functionality of learning institution for each respondent and the sum of the data collected on the three attributes of generic graduate outcomes were correlated together using Pearson Product Moment Correlation Coefficient statistics. This is to determine the relationship between functionality of learning institution and generic graduate outcomes. The result of the analysis is presented in the table 6 below.

Table 6: ***Summary of the correlation between functionality of lear ning institution and generic graduate outcomes.***

Variables	N	X	SD	r	Sig.	Remark
Functionality of Learning Institutions	450	71.92	2.25	0.45	0.00	Significant
Generic Graduate Outcomes	450	47.61	8.01			

The table 6 above reveals that the mean score of the responses to functionality of learning institutions is 71.92 and a standard deviation of 2.25 while the mean for the responses on generic graduate attributes is 47.61 and a standard deviation of 8.01. The statistics further reveals that the r-calculated of 0.45 is significant at 0.05 alpha level (p=0.00). This implies that a significant relationship exists between functionality of learning institution and generic graduate outcomes. Hence, the null hypothesis stated above is rejected.

Discussion

These results indicate that measures of functionality of learning institutions account much for the generic graduate outcomes. It shows that learning community, good teaching, programme quality and teaching quality have significant influence on discipline knowledge and skills, ethical and social sensitivity, and communication and problem-solving skills of students. This result add weight to the claims and observations of various studies about the role and importance of learning communities and the characteristics of learning contexts commensurate with this ideas, in the development of students learning outcomes (Kaufman & Creamer, 1991; Williams, 1998; Adesanmi, 2000; Lawson & Curtis, 2001; Johnson, 2001 and Caverly & MacDonald, 2002). This has implications for teaching and for curriculum design and development. It has been noted that the development of generic graduate attributes cannot be treated as a "bolt on" addition to a curriculum and must be integrated in the teaching and learning activity designs that engage students. Also, it is important to note that whilst engagement in a learning community is a significant determinant of generic graduate outcome, and that the development of discipline knowledge also appears to be more closely tied to the social-interactive aspects of the learning environment. Consequently, it is important not only that teaching is of high quality and that courses are well integrated within a programme, but also that curricula designs incorporate opportunities for students to interdependently engage with the materials to be learned with each other and with lecturers, in order to maximize their learning.

Conclusion and Recommendation

Although, teaching and program quality continue, rightly, to be important and appropriate foci for tertiary institutions interested in improving student learning and students experiences of attending tertiary institution, this study diary shows that students perception of their involvement in a learning community is strongly related to their learning outcomes. This should not be a surprise because there is corrugating evidence in learning theory research (e.g social constructivism, communities of practices, collaborative learning) that would suggest that the intellectual and social (on-task) engagement that are corollaries of successful learning community involvement are highly correlated with superior learning outcomes. Moreover, the study has provided empirical evidence for the relationship between learning communities and student learning outcomes. Consequently, it is good to note that lecturers may have to consider team teaching more often and within the context of the whole programme, not just in single courses. This is so because for students to feel a part of the learning communities, it is important for staffs who teach into that programme to be seen as a strong foundation for that community, or indeed exemplars of the values and practices that define collaborative and co-operative learning. In this way, the idea of the learning community has an extension into the idea of the teaching community, a community of teachers committed to learning collaboratively about teaching.

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