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## **Institutional Factors Affecting the Academic Performance of Polytechnic Students in Ghana**

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### **Abstract**

*Students' academic performance is very important to all stakeholders in education. The research assessed whether institutional factors have influence on students' academic performance. The objective was to determine whether institutional factors have influence on students' academic performance. A sample of 360 students was used for the study and both stratified and convenient sampling methods were used. SPSS was used for the data analysis which enabled us to get the percentage, mean and standard deviation values. From the analysis, it was evident that all the variables have an influence on students' academic performance and it should not be ignored by educators, students and decision makers.*

**Keyword:** *Perception, Students, Unfavourable Learning Environment, Method of Lecture delivery, Poor access to internet facility*

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**Introduction:** Student academic performance is paramount to every institution as well as the other stakeholders. For a student to progress and stay in the institution she/he should excel in all the examinations that would be conducted. Students are assessed on their performance with their Grade Point Average (GPA) as well as their Cumulative Grade Point Average (CGPA). This determines how the student is performing for the period. The CGPA is very important to students, employers and other stakeholders in the educational sector (Plant, Ericsson, Hill & Asberg, 2005; Strenze, 2007). It is an objective tool for assessing the performance of students (Bacon & Bean, 2006; Kobrin Paterson, Shaw, Mattern & Barbuti, 2008) and this helps the institution to be aware of students who will be promoted, repeated, withdrawn from the programme of study.

There are many factors contributing to the success or failure of a student in any tertiary institution in the world (Crosnoe, Johnson, & Elder, 2004; Farooq, Chaudhry, Shafiq, & Berhanu, 2011). Some of the factors are class size (Heineesen, 2010). Students perform poorly because the institutions have failed to create the environment that is accommodating and conducive to their learning and educational needs (Harb & El-Shaawari, 2006). The facilities available in most Ghanaian Polytechnics do not suffice in enhancing students learning and performance. Students

therefore find it difficult to cope with the workload. Performance is vital because the level of success students achieve from the Polytechnic has far-reaching implications for their personal and professional lives. Students' performance impact on their career choice, personal income and level of success, as well as the degree of participation in community life (Grainen, 1995). Although a number of some personal and social factors such as family income, self-motivation, inability to manage school work and students' personal circumstances, amongst others have contributed to the declining performance of many students, their impact vary with context (Park & Kerr, 1990). The main objective of this study is to identify the institutional factors that affect students' academic performance.

In doing this an attempt was made to establish relationships between selected institutional factors and academic performance measured in terms of the students' cumulative grade point average. The choice of these factors is based on the fact that Ghanaian Polytechnic is threatened with adverse economic conditions and unhealthy intellectual environment that the fundamental effectiveness of the institutions to produce competent, skilled and employable graduates is in doubt. The thrust of this study is to ensure that the Polytechnics are restructured to be able to meet the challenges posed by the demands of the 21st century and beyond and to be able to fulfill its mandate of producing skilled manpower for national development. Also, the findings of this study would enable Polytechnics allocate their resources accordingly to increase performance and individual productivity.

**Literature Review:** The factors influencing students' academic performance are very numerous and a good number of researches have been done in this area. The literature review was done on institutional factors identified and these factors include unfavourable learning environment, poor equipped departmental and central libraries, methods of lecture delivery, overcrowded lecture rooms, unavailability of recommended texts, late provision of reading/reference materials by lectures, Poor internet facility and overcrowded exams time table.

Underfunding of Polytechnics in Ghana has limited their ability to effectively and efficiently perform their traditional duties of teaching and research and has also affected their capacity to improve the state of their physical facilities which are crucial to teaching and research (Bamiro & Adedeji, 2010). Thus, students' performance has dropped because the factors that previously enhanced the performance of Polytechnics have been negated. Apart from underfunding, a combination of factors influencing academic performance could vary from one academic environment to another and from one cultural setting to another. For instance, students' characteristics such as their age, entry qualifications, self-motivation and work ethics could impact on their performance (Abbasi & Mir, 2012). Other studies identified students' efforts (Siegfried & Fels, 1979; Anderson & Benjamin 1994), parents' education, family income, learning preferences (Aripin, Mahmood, Rohaizad, Yeop & Anuar, 2008), class attendance (Romer, 1993) and entry qualifications as factors that significantly affect students' academic performance in various settings. Kraft and Singhapakdi (1991) confirmed that students with strong work ethics are strongly committed to their work, more dedicated, focused and tend to perform better than their peers. Thus the role of individual students' efforts towards enhanced performance cannot be over emphasized. In view of this, Abbasi and Mir (2012) posited that students themselves play critical roles in getting good grades and must therefore explore all opportunities available within their academic environment. Romer (1993) recognized the importance of class attendance in enhancing students' performance. He found that in his economics class, students who attended class regularly made the

highest grades. Durden and Ellis (1995) however attributed the decline in class attendance to assessment pressures, poor method of delivering lectures, web-based learning approaches and timing of lectures; while Newman-ford, Lloyd and Thomas (2009) attributed it to financial constraints. They argued that students, who seek employment to be able to meet up with academic financial obligations, are bound to be exhausted from working and consequently miss classes.

Although Borde (1998) found that age and gender influenced academic performance in varying contexts and noted that mature students performed better than the younger ones, he however observed that this comparison depended on the subject matter and types of assessment used. Woodfield and Earl-Novell (2006) found that female students outperformed their male counterparts. They attributed this partly to female students being more conscientious and less likely to miss lectures. Other determinants of students' academic performance according to Zimmerman, Bandura and Martinez-Pons (1992) include: students' academic background, changing academic goal, inability to manage normal schoolwork and lack of basic and fundamental skills. The impacts of these determinants vary with context and not all factors are relevant for a particular context. Apart from traditional variables of students' efforts, Lizzio, Wilson and Simons (2002) noted that institutional environment and facilities have significant impact on students' performance. For instance, Darling-Hammond and Synder (2001) claimed that a reduction in class-size could enhance learning, while availability of adequate research equipment and teaching materials could significantly improve students' performance. They also maintained that student-teacher ratio, physical resources, equipment and teaching aids have significant effect on academic achievements. In the same vein, Devadoss and Foltz (1996) opined that a physical environment with improved facilities provide comfort, security, better understanding of courses and can be dramatic in terms of increased learning and performance. They further emphasized that a social interactive environment encourages participation and enhances students' creative skills. According to them an interactive environment in which students are given the freedom to choose tasks, supported for unusual ideas, taught to learn from failures and encouraged to participate in decision making enhance their skills and achievement.

According to Abbasi and Mir (2012) physical resources and staff competence are important in determining the performance of students. For instance, Trigwell, Prosser and Waterhouse (1999) emphasized the fact that effective teaching results in better learning outcomes and increases students' quantitative academic outcomes. Hence improving teacher quality can be used as a tool in increasing students' achievements. Heinesen (2010) further affirmed that teachers' ability and competence prove significant in improving students' performance and that instructors' teaching style enhances understanding of concepts taught. Benware and Deci (1984) suggested the need for Universities to provide some of the following physical facilities within its environment to enhance performance: conducive hostel facilities with inbuilt study rooms, special facilities for the physically challenged who encounter greater academic challenges, career centre designed to provide career counseling activities, equipped libraries and provision of computer and internet facilities. All of these according to Lan (2003) combine to promote students' educational growth. Engin-Dermir (2009) opined that lecturers play crucial roles in promoting educational growth and performance. He affirmed that teacher's qualification, knowledge of the subject matter, enthusiasm, interaction with students, method of lecture delivery and encouraging participation in discussions have positive and significant impact on students' achievements. Engin-Demir (2009) therefore recommended the need for the use of appropriate teaching methods, facilities and basic electronic components by teachers to facilitate learning. They emphasized the dramatic effect this has on the students in terms of

increased learning and performance. In the same vein, James (1998) and Gainen (1995) recommended the need for inclusive teaching and learning approaches responsive to the varying levels of academic needs. These according to them provide sites for interactions between staff, students and institutional structures.

**3.0 Research Methodology:** This research discusses and justify the data collection process, collection techniques and research design adopted in this study. Also tools and technique used for analyzing the data in the study are dealt with in this section.

**3.1 Population:** The population of the study were Polytechnic students at Koforidua which was 6,541 and a sample was taken. In determining the sample size for this study, the following formula was adopted from (deVaus 2002), *Surveys in Social Research* with the following assumptions; 95% confidence level, 5% margin of error and estimated heterogeneity of the population to be 20%.

$$n = p\% * q\% * [z/e\%]^2$$

Where n is the minimum sample size required

p% is the proportion belonging to the special category

q% is the proportion not belonging to the special category

z is the z value belonging to the level of the confidence level required, and

e% is the margin of error.

$$n = 0.40 * 0.60 * [1.96/0.05]^2$$

$$n = 369.6$$

Based on the sample size of 369.6, adjusted sample size can be obtained as

Where, n' is the adjusted sample size, n is the minimum sample size and N is the total population.  $N' = 369.6/1 + [369.6/12,500] = 358.9$

The adjusted sample size of 360 students representing about 2.88% of the total population was considered as the sample size. This gives a sampling fraction of 1:35. That is to say, on the average 35 units of the population was represented by one unit in the sample. The sample size was considered to enable the researchers collect more detailed information on the subject.

The research employed the survey method of which questionnaire were used and mix with method used for the data analysis. The researchers designed questionnaire using likert scale after which it was pilot test on some selected students at the Polytechnic. After the pilot test was some corrections were made and the final questionnaire came out. The stratified sampling method was used to group the population into between the age range 18-24, 25-34, 35-44 and 45 years and above. After which the convenient sampling method was employed was employed to administer the questionnaire to the targeted population. Three (3) research assistants were employed to administer the questionnaire on Koforidua Polytechnic campus. They visited students in the lecture rooms, ceremonial grounds and their hostels and it took them a week to administer and gather the entire questionnaire, and the retrieval rate was 100%. Also the descriptive statistics was used to compare the proportions, which enabled us to arrive at the standard deviation values.

Discussion of the results

The discussion is based on the various institutional factors and its effect on academic performance of students in Koforidua Polytechnic. From the analysis, 57.3% were male and 42.8% were female; while 63.3% were between the age range 18-24, 34.8% for 25-34, 1% respectively for both 35-44 and 45 years and above. It is clear that most students are young and the dominated.

The table below gives the general discussion of the results.

	N	SD	D	N	A	SA	Mean	Std. Deviation
Unfavourable Learning Environment	360	15(4.%)	5(1.%)	0(0.0)	1(0.3%)	339(94.%)	4.7889	.86716
Less equipped departmental and Central libraries	360	9(2.5%)	0(0.0%)	2(0.0%)	0(0.0%)	349(96.%)	4.8889	.64111
Method of Lecture delivery	360	20(5.6)	3(0.0%)	0(0.0%)	1(0.3%)	336(93.%)	4.7500	.95220
Unavailability of recommended textbooks	360	18(5.0%)	3(0.0%)	0(0.0%)	(0.0%)	339(94.%)	4.7750	.90921
Late provision of reading reference material by lecturers	360	15(4.2%)	0(0.0%)	0(0.0%)	8(2.2%)	337(93.%)	4.8111	.80934
Method of Collating and assessing semester result	360	19(5.3%)	0(0.0%)	0(0.0%)	0(0.0%)	341(94.%)	4.7889	.89560
Poor lecture student relationship	360	5(1.4%)	30(8.3%)	0(0.0%)	0(0.0%)	325(90.%)	4.6944	.93878
Interruption of electricity supply	360	7(1.9%)	8(2.%)	0(0.0%)	13(3.%)	332(92.%)	4.8194	.71837
Poor access to internet facility	360	12(3.3%)	17(4.7%)	4(1.1%)	26(7.%)	301(83.%)	4.6306	.97012
Interruption of water supply	360	8(2.2%)	5(1.4%)	0(0.0%)	32(8.%)	315(87.%)	4.7806	.72301
Incessant strike and closure of school	360	9(2.5%)	6(1.7%)	21(5.8%)	0(0.0%)	324(90%)	4.7333	.84511
Poor accommodation facility	360	4(1.1%)	7(1.9%)	0(0.0%)	0(0.0%)	349(96.%)	4.8972	.58581
Overcrowded Exams timetable	360	0(0.0%)	18(5.0%)	0(0.0%)	0(0.0%)	342(95.%)	4.8500	.65474
Valid N (listwise)	360							

From the Table above, a total number of 339 out of 360 students sampled strongly agreed that unfavourable learning environment affects students’ academic performance whilst 15 students representing 4.2% strongly disagree with the mean of 4.7889 and standard deviation of 0.86716. With poorly equipped departmental and central library’s 349 students representing 96.9% strongly agreed with the statement that poorly equipped libraries affect students’ academic performance

whilst 9 students representing 2.5% also strongly disagree with mean value of 4.8889 and standard deviation of 0.64111. On method of lecture delivery 336 students representing 93.3% strongly agree to the statement that methods of lecture delivery affect students' academic performance whilst 20 students representing 5.6% strongly disagree to the view with mean of 4.7500 and standard deviation of 0.95220. This finding agrees with Durden and Ellis (1995) and Abbasi and Mir (2012) that poor method of lecture delivery and staff competence affects students' academic performance. On unavailability of recommended textbooks 339 students representing 94.2% strongly agreed whilst, 18 students representing 5.0% strongly disagree with mean of 4.7750 and standard deviation of 0.90921. On Late provision of reading and reference materials by Lecturer 337 students representing 93.6% strongly agreed that this variable strongly affect academic performance with mean of 4.8111 and standard deviation of 0.80934. With the method of collating and assessing semester result 341 students representing 94.1% strongly agreed and 19 students representing 5.5% also dissenting to the view with mean of 4.7889 and standard deviation of 0.89560. On poor lecture student relationship 325 students representing 90% strongly agree and 5 students representing 1.4% strongly disagree with mean of 4.6944 and standard deviation of 0.93878. On the interruption of electricity supply 332 students representing 92% strongly agree with the statement whilst 7 students representing 1.9% strongly disagree with the statement with mean of 4.8194 and standard deviation of 0.71837. On poor access to internet facility 301 students representing 83% strongly agree with the statement whilst 12 students representing 3.3% also strongly disagree with the statement with mean of 4.6306 and standard deviation of 0.97012. This finding agree with that of Darling-Hammond and Synder (2001) that class size, research equipment and teaching materials affect students' academic performance . On interruption of water supply 315 students representing 87% strongly agree with the statement that interruption of water supply affect students' academic performance whilst 8 students representing 2.2% strongly disagree with mean of 4.7806 and standard deviation of 0.72301. On incessant strike and closure of school 324 students representing 90% strongly agree with the statement whilst 9 students representing 2.4% also strongly disagree with mean of 4.7333 and standard deviation of 0.84511. On poor accommodation facility and its effect on students' academic performance 349 students representing 96% strongly agree with the statement whilst 4 students representing 1.1% also strongly disagree with mean of 4.8972 and standard deviation of 0.58581. This finding also agrees with Devadoss and Foltz (1996) that physical environment with improved facilities affect students' academic performance. On overcrowded examination timetable 342 students representing 95% strongly agree with the statement whilst 18 students representing 5% also strongly disagree with the statement with mean of 4.8500 and standard deviation of 0.65474.

**Conclusion:** In this paper an attempt was made to locate the institutional factors that affect the academic performance of students in Polytechnics in Ghana. This paper chose to focus on institutional factors due to the obvious crisis of major proportions contending with Polytechnic Education which threaten their capacity to fulfill their roles of producing skilled manpower for national development. Although analysis of the data using descriptive statistics revealed that the interruption of electricity supply, overcrowded lecture rooms, unfavourable learning environment, incessant strike and closure of school as well as method of collating results were found to affect students' performance more than the others; results of further analysis of the data using mean of  $(4.6306 \leq x \leq 4.8972)$  and standard deviation of  $(0.6411 \leq x \leq 0.97012)$  generally revealed that the institutional factors considered affect students' academic performance. The researchers are therefore of the view that there are other social factors that are very crucial in determining students' academic performance such as age, mass media, peer group and many others therefore the need to

investigate in future research. Since institutional factors have a great impact on students' academic performance, Polytechnics should be committed and willing to develop strategies that can facilitate learning within their environments.

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