The Provision of Educational Infrastructure and Academic Performance in Tertiary Institutions in Ghana: University of Developmental Studies (UDS), WA Campus as a Case Study

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Abstract:

This paper investigates the relationship between educational infrastructure facilities and academic performance in tertiary institutions in Ghana with the University for Development Studies, Wa Campus as the case of study. The Wa Campus of the University for Development Studies is comprised of: The Faculty of Integrated Development Studies, Faculty of Planning and Land Management, and Faculty of Business Studies. The current student population of the Wa Campus is about 10,500. The total number of students’ admitted for the 2010/2011 academic year was about 5,000. From the qualitative and quantitative data analyses it was concluded that poor infrastructure facilities was the major cause of poor academic performance of students on the Wa Campus of the University for Development Studies.

Key words: Tertiary, University for Development Studies, Wa-campus, Infrastructure, Poor Performance.

Introduction

Tertiary education is an indispensable tool for socio-economic development of every country. It is in line with this assertion that the individual and government must take the issue of tertiary education very serious. Tertiary education in Ghana is defined in the Report of the President’s Committee on Review of Education Reforms in Ghana as the education offered after secondary level at a university, polytechnic, Specialized
Institutions, Open University and any other institutions to provide training that leads to the award of diploma and degree qualifications. Tertiary institutions provide the platform for training people in all spheres of human endeavours such as the humanities, sciences and technology, which are the driving forces of development.

Every system is comprised of a set of elements with its functional objects which interact in definite ways to ensure the realization of the overall objective of the system. Infrastructure facilities are those factors in the system, be it educational, social, or economic, that facilitate the interaction between the elements. Infrastructure forms the essential frame for the creation of an enabling environment for an institution, organization or country to function effectively.

For the purpose of this paper, educational infrastructure is defined as a support system which refers to the physical, economic and social-cultural facilities and services that form the foundation as well as the tool for institutional development and growth. This shall include but not limited to lecture halls, halls of residence/residential accommodation, street lights, transportation, access roads, communication facilities, public address systems, furniture at lecture halls, fittings at lecture hall, office accommodation for staff and lecturers, office fittings, water, library facilities etc.

In reality, it has become difficult for governments in Sub-Saharan Africa countries to meet the escalating investment cost of new educational infrastructure in our tertiary institutions. The maintenance cost of existing educational infrastructure is also high due to many years of neglect. This has resulted in a huge gap between demand for educational infrastructure and supply of educational infrastructure. Planners, engineers, governments and development practitioners over the years have been struggling with the best alternative to provision of educational infrastructure in order to bridge the gap between the demand for and supply of crucial basic educational infrastructure on our tertiary institutions.

The significant role that infrastructure plays in tertiary education has been highly recognized. In line with this, government has increased expenditure on provision of basic infrastructure in various tertiary institutional establishments through the Ghana Educational Trust Fund (GETFUND). Infrastructure provision in public tertiary institutions
has gained a solid support owing to the establishment of the Ghana Educational Trust Fund (GETFUND). Notable on the University for Development Studies, Wa campus are the construction of two lecture halls, student’s hall of residence, and office accommodation with an auditorium.

In post-independence Ghana, three universities were established to offer tertiary education - the University of Ghana (UG) in 1948, followed by the Kwame Nkrumah University of Science and Technology (KNUST), 1952, and the University of Cape Coast (UCC), 1962. UG offers Liberal Arts and professional courses, including Medicine, Law, Agriculture, Engineering and Business Studies. KNUST is primarily a science and technology university. UCC was set up to prepare teachers for secondary schools and offers its Arts and Science courses in that context. In the last two decades, two additional public universities have been established. These are the University of Education, Winneba (UEW) 1992 and the University for Development Studies (UDS) in 1992. In addition there are a number of regional polytechnics, which have been elevated to tertiary status. Since 1998 a number of private institutions, mostly denomination-based, have also been given government accreditation to offer degree-level courses.

The expansion of tertiary institutions has not been able to meet the increasing demand for tertiary education. Although there has been significant expansion in enrolment in tertiary education, the participation rate of the age-group 18-21 years in tertiary institutions in the country is as low as 2.5% compared to 30-40% for the corresponding age group in some developed countries.

There is a general problem of access to tertiary education in the Ghana. Access defined here as places and facilities available for potential applicants. Available statistics indicate that from 1996-2001, only about 32% on the average, of qualified applicants for admission into the universities, and about 54% of same for admission into the polytechnics, were actually admitted. The figures have not changed much over the period. For the 2009/2010 academic year, 53% of qualified applicants were admitted into all the public universities and 71% into the polytechnics. For the same period, statistics indicate that the male-female enrolment for both the universities and polytechnics has increased slightly. However, the gender gap is still very wide. In 2009/2010 academic year the male to female enrolment ratio was 64:36 for the
universities and 70:30 for the polytechnics. This is far below the national norm of 50% males to 50% females.

University for Development Studies in Perspective

The University for Development Studies was established by PNDCL 279 (1992). Its establishment was a departure from the usual centralized university system to a multi-campus system with the additional task of using a problem-based, student-centred and community-based approach to the teaching and learning. Furthermore, it was expected to “blend the academic world with that of the community in order to provide a constructive interaction between the two for the total development of northern Ghana in particular and the country as a whole.” Consequently, the UDS works towards becoming a “home for world class pro-poor scholarship.”

The University for Development Studies was borne out of the new thinking in higher education which emphasizes the need for universities to play a more active role in addressing problems of society, particularly in rural areas. The university’s dream and vision is to provide enlightenment in higher education in Ghana by effectively and efficiently combining academic studies with field practical training programme. The university aims at coming out with men and women who are practically oriented and well grounded in theory.

The University for Development Studies as a multi-campus university has campuses in each of the four constituent regions comprising the catchments areas of Brong Ahafo Region, Northern Region, Upper East Region and Upper West Regions of Ghana. All the campuses are functional with the exception of the Brong Ahafo Region. By sitting a multi campus university in the north of Ghana, it is hoped that it would open doors for the use of tertiary education as a tool for empowering the people and therefore reduce their poverty levels. It was expected that the north would be opened to scientific research towards identifying and solving problems specific to northern Ghana.

It should be noted that the three northern regions in Ghana are classified as the poorest regions. According to the Ghana Living Standard Survey almost (nine) 9 out of (ten) 10 citizens of the Upper West Region are said to be poor, eight (8) out of ten (10) in the Upper East Region are said to be poor and seven (7) out of (ten) 10 are poor in the
Northern Region. These compare unfavourably with one out of every 10 in the Greater Accra Region (Ghana Government; GSS 2000).

Again, by establishing a multi campus university in the north, the government tried to satisfy the competing regional demands for attention in their tertiary educational expectations and give northerners the opportunity to tertiary education by proximity. It must be emphasized here that all the universities (both public and private) are located in southern Ghana.

**The Third Trimester Field Practical Programme (TTFPP)**

All the universities in Ghana operate the semester system; however, The University for Development Studies unlike all the other universities in Ghana operate a trimester system to execute the field practical component of its mandate. During the third trimester every year, students are sent to rural communities to stay continuously for about eight weeks to test and apply their skills in data collection techniques, needs assessment etc. The students continue to go to these communities for three years. The importance of this is that the students learn to live and work in rural communities, apply theoretical learning in real communities while building skills and knowledge for rural development and grounding theory. The development workshop represents the climax of the third trimester field practical training programme. Students present their findings from the field to a panel of internal academic examiners.

The Third Trimester Field Practical Programme (TTFPP) is one of the major features that distinguishes University for Development Studies (UDS) from its sister universities in Ghana. It is an essential component of the academic curriculum of the university and draws its justification from the University for Development Studies PNDCL Law 279 (1992) which mandates the university to blend the academic world with that of the community in order to provide constructive interaction between the two for the total development of Northern Ghana in particular and the country at large.

Under this programme, students from the Faculty of Integrated Development Studies (Wa campus), Faculty of Planning and Land Management (Wa Campus), Faculty of Business Studies (Wa Campus), Faculty of Agriculture Technology, Faculty of Applied Science and School of Medicine and Health Sciences are integrated. Communities from various
districts within specific regions are assigned for them where they would go and work with the people for a given period of three years during every third trimester.

The General Objective of the third trimester field practical programme (TTFPP) are:

- Helping students to develop favourable attitudes towards working in rural and deprived communities.
- Exposing students practically to the nature of development problems of Northern Ghana in particular and the country as a whole.
- Providing useful services to Ghanaian rural communities through the exchange of knowledge and its application to address the felt-needs and aspirations of these communities; and
- Generating data for further research into problem solving development issues and other purposes.

**The Structure of the University**

In order to reflect the multi-campus nature of the University and deliver on its mandate of providing functional higher education, the University for Development Studies has been structured to grow its campuses into semi-autonomous Colleges. The structural development shall be guided by the Law, the Statutes, national needs, local demands and the Strategic Plan of the University.

The four existing campuses in Navrongo, Nyankpala, Tamale and Wa will specialize in and deliver programmes/courses in Social and Development Studies, Applied and Environmental Sciences, Medicine and Health Sciences and Agriculture and Natural Resources respectively. A fifth to be sited in Kintampo will specialise in and deliver programmes/courses in Business Studies and Law. Each of the Colleges will comprise Faculties, Schools, Centres, Departments and Units as deemed fit.

In addition to the central administrative structure at Tamale comprising the offices of the Vice-Chancellor, Pro-Vice-Chancellor, Registrar and other Principal Officers that form the central coordinating body, each of the Colleges will operate a semi-autonomous administrative system under the Office of the Vice-Chancellor.

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The Colleges shall be headed by Principals and the Faculties and Schools by Deans. Other officers such as the Registrar, Finance Officer, Librarian, Director of Works and Physical Development and Internal Auditor will have Deputies in each Campus.

Directors of University-wide programmes such as the Centre for Inter-Disciplinary Research and Community Relations and the Dean of Graduate Studies shall be responsible to the Vice-Chancellor.

The problem statement

Tertiary Education continues to be a major problem for this country, with experts wondering how to solve the hydra-headed problems confronting tertiary education.

Another area that has been of concern to tertiary education authorities has been the increase in demand for tertiary education over the last few years as against the limited entry opportunities at the tertiary level.

Tertiary education worldwide finds itself in a paradoxical situation. On one hand, it is witnessing an unprecedented growth; enrolments are on the increase.

The correlation between investment in higher education and research and the level of social, economic and cultural development of nations is well established and is gaining increasing grounds at a time when all developments have become knowledge intensive. On the other hand, tertiary education is in a state of crisis in many countries of the world under the pressure of serious financial constraints which has resulted in inadequate infrastructure. It has to compete for public fund with many other sectors and very often, it is among the first to undergo severe cuts. These cuts have reached a dramatic threshold in developing countries especially Ghana.

Even though it is accepted that education financing is a problem all over the world, particularly in the developing countries, Ghana seems to have a greater share of the problem with tertiary education, competing for the meagre national resources with equally important sectors.

Nonetheless, several other countries have also suffered in the tertiary education crisis that Ghana is grappling with. The World Bank (1991) stated that the development
challenge posed for tertiary education in Africa is in one important respect, more daunting than that posed for lower education and that rare growth for public resources for the educational sector as a whole in most developing countries, is unlikely to keep pace with the growth of the population.

One of the biggest problem confronting the Wa campus of the University for Development Studies is the mismatch between existing academic facilities and physical infrastructure on the one hand, and the increasing number of students admitted into the campus on the other. For the 2010/2011 academic year, the campus admitted about 5,000 students. However, the campus has only two lecture halls, an auditorium, and four (4) three (3) storey hostels and a compound hostel.

There has been a huge public outcry by parents, students, civil society organizations, media, government, heads of tertiary institutions concerning the provision of educational infrastructure which among others serve as a catalyst for the achievement of academic excellence. This popular call by principals and vice chancellors of tertiary institutions has reached a monumental stage for consideration. Though the provision of infrastructure is a major problem in most tertiary institutions in Ghana it is more severe in the University for Development Studies and more acute in Wa Campus to be precise. Since the Wa Campus was established in 2002, no student has graduated with first class honours degree for which many reasons have been assigned.

It is in view of this that this paper seeks to examine the relationship between infrastructure facilities and academic performance in Ghanaian tertiary institutions, using the University for Development Studies, Wa Campus as a case for study. In order to proceed with the study, the following researchable question is raised as the basis of the study: Is there any relationship between educational infrastructure and academic performance?

**Methodology**

The study employed a case study approach to allow for a more detailed investigation of the research question. The data used in this study is derived from both secondary and primary sources.

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Purposive sampling was applied in selecting hundred students from each level. That is level 100, level 200, level 300, level 400 and diploma, and graduate students. In all six hundred (600) students were interviewed. In addition, random sampling was applied to interview ten lecturers.

**Methods of Data Collection**

The study adapted a multi data collection method. Data were collected using the following methods:

- Questionnaires
- Semi-structured interview.

Interviewing was adopted in order to gain a thorough understanding of the problem under study. This technique offered the respondents the opportunity to express themselves freely as much as possible.

The data collected was edited to check for consistency, accuracy and reliability. The data was analysed.

**Infrastructure organization of the faculty**

**Administration and Departments**

The Faculty of Business, the School library and the Exams Office are occupying a two storey- building owned by the Regional Coordinating Council. This is the old campus of the university.

The Faculty of Planning and Faculty of Integrated Development Studies are located at the new campus. At the new campus, there is a 500 seater auditorium which is used as a lecture hall as well. It should be mentioned that, all the departments of the various faculties have an office each which is shared by all the lectures of the department with the department clerk(s).

**Lecture hall**
In the case of lecture halls, the campus has two permanent lecture halls at the new site located at Bamahu. Each lecture hall is a thousand (1000) seater capacity hall. Ironically, most of the classes have a total of about 1,500 students. Most of the students have to stand during lectures. The public address systems in the lecture halls are not effective which always affect the quality of delivery lectures. Sometimes, lectures have to lecture a class of about 1,500 without a public address system. Some of the students attend lectures at a near by training college.

**Hostel facilities**

The university through the GETFUND has constructed four (4) three storey hostel and a compound hostel at the new site at Bamahu. This is woefully inadequate given the total number of students on campus. Out of the total population of about 10,000 students only 800 hundred are resident on the university hostels. Most students have to rent private hostels and rooms in and around the campus. Majority of the students stay off campus and have to commute to and fro everyday to attend lectures. Sometimes, lectures end at 7:30pm and getting back home is a problem.

**Library**

The library is an eighty-seater capacity but only fifty-five seats are in use. The library has a total of 3,850 books and about five hundred and fifty periodicals for which most of them are outmoded. Most reference materials are not available.

**Internet facilities**

The campus, since its establishment in 2002 has no functional internet facility. Students and lecturers have to patronize the services of private internet cafes in town.

**Transportation**

The SRC of the campus has acquired three buses to transport students from town to lectures. All though this is a positive gesture and the SRC must be applauded for this, the buses are inadequate given the number of students on campus. Students have to stand several minutes or hours before they board the bus. Most often, students have to struggle before boarding the bus.
Lighting

There are no street lights on campus. This makes movement at night insecure.

Theoretical Overview

According to Abudu (2005) whenever you do anything under stress or any form of tension, your performance suffers. It would therefore not be an overstatement to say that the provision of adequate library facilities and provision of adequate library books that are of relevance to the course of study relieves the student of tension and builds confidence in enhancing high academic performance. Also, the provision of hostel facilities in a serene environment that are devoid of tension and external pressure provides the student with emotional stability to achieve good performance.

Abudu also evaluated the correlation of student academic achievement focusing on such factors as; school infrastructure, school organizational and management practice, teachers characteristics and practices and the availability of institutional materials and equipment. This assertion by Abudu goes to affirm the significant role that school infrastructure provision plays in student academic performance.

Shakur et al. (2006) points out that studies on academic performance show that such factors as number of hours spent on studies, financial background of parents, lecture attendance, gender, group discussion and educational background of parent were all factors which affect academic performance of students positively. This study however failed to include other important variables such as educational infrastructure or facilities which have created a vacuum for further studies.

According to World Bank (1995) ‘Tertiary Education in Africa is a source of analytical perspective on social problems and their possible solutions that is independent of end, often a usefully pluralistic counter point to political and religious authorities. Higher education such as university is of paramount importance for Africa futures. Africa requires both highly trained people and top quality research in order to be able to formulate the project’s plans, programmes and implement the projects that are essential to economic growth and development.’

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Also, according to Addae (2000) the role of universities in Africa is very crucial in national development. The universities are often the only national institutions with the skills, the equipment and mandate to generate knowledge through teaching and research and train manpower for the country. In recent times however, our universities have been faced with answering the crucial question of taking appropriate action on how to make up for the rapidly and constantly dwindling financial position which makes it impossible for them to even provide their highly trained calibre of human resource.

“if the next century is going to be characterized as a truly Africa century for social and economic progress of the Africa people, the century of durable peace and sustained development in Africa, then the success of this programme is depended in the success of our education system. For no where in the world has sustained development been attained without a well function system of education, without a universal and sound primary education, without an effective higher education and research sector, without equality of educational opportunity” (ibid). Even though the assertion by Addae that durable peace and sustained development is depended on the success of our education system is true but failed to recognize other factors such as the availability and quality of infrastructure.

Data Analysis and Presentation

Analysis of Academic performances and causes for poor performance

This section analysis the performance of students’ using their GPA and ascertaining the factors that effect students’ academic performance.

A successful candidate is graded as follows based on the recommendation of the Board of Examiners. A successful candidate is one that has passed all the courses of the programme and has a Cumulative Grade Point of not less than 1.50.

- First Class degree 4.50 -5.00
- Second Class (Upper Division) degree 3.50 – 4.49
- Second Class (Lower Division) degree 2.50 – 3.49
- Third Class 2.00 – 2.49
- Pass degree, 1.50 – 1.99

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- Fail <1.50
Table 1: Respondents Academic Performance

<table>
<thead>
<tr>
<th>GPA</th>
<th>No of respondent (students)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.50 -5.00</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3.50 – 4.49</td>
<td>175</td>
<td>29</td>
</tr>
<tr>
<td>2.50 – 3.49</td>
<td>355</td>
<td>59</td>
</tr>
<tr>
<td>2.00 – 2.49</td>
<td>50</td>
<td>8.3</td>
</tr>
<tr>
<td>1.50 – 1.99</td>
<td>10</td>
<td>1.7</td>
</tr>
<tr>
<td>&lt;1.50</td>
<td>6</td>
<td>1.0</td>
</tr>
<tr>
<td>None response</td>
<td>4</td>
<td>0.7</td>
</tr>
<tr>
<td>Total</td>
<td>600</td>
<td>100</td>
</tr>
</tbody>
</table>

From the table above, it can be seen that majority of the student’s GPA fell within the range 2.50 – 3.49 (59%) which can best be described as an average performance.

Table 2: Factors Affecting Academic Performance

<table>
<thead>
<tr>
<th>Factors</th>
<th>No of respondents (students)</th>
<th>Percentage (%)</th>
<th>Ranks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor educational infrastructure</td>
<td>600</td>
<td>89.5</td>
<td>1&lt;sub&gt;st&lt;/sub&gt;</td>
</tr>
<tr>
<td>Quality of lecture delivery</td>
<td>58</td>
<td>8.6</td>
<td>2&lt;sup&gt;nd&lt;/sup&gt;</td>
</tr>
<tr>
<td>Financial background of students parent</td>
<td>10</td>
<td>1.4</td>
<td>3&lt;sup&gt;rd&lt;/sup&gt;</td>
</tr>
<tr>
<td>Educational background of parents</td>
<td>2</td>
<td>0.2</td>
<td>4&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td>Total</td>
<td>670</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>
Note: Multiple responses possible

The student’s identified several factors that affect academic performance as can be seen from the table above. Poor educational infrastructure was identified by all the 600 students as constituting the major causes of poor academic performance. According to the students, the major cause of difference in performance of students in Cambridge University and the University for Development Studies is the difference in educational infrastructure. “Send as to Cambridge University to do the same programme and we shall come out with flying colours” one student reiterated.

From the table above it can be seen that poor educational infrastructure constituting 89.5% of responses is the major cause of poor academic performance of students on the campus whilst educational background of parents being the least cause of poor academic performance of students constituting 0.2%.

Extent of Effect Analyses

The extents of effects that the various factors identified have on academic performance of students of the faculty was analyzed using Kendall’s Co-efficient of Concordance. This method analyses the level of agreement or disagreement among respondents and between variables. The co-efficient is between 0 – 1 where 0 means perfect disagreement and 1 meaning perfect agreement between the variables. The formula is therefore written as:

\[
W = \frac{12[\sum T^2 - (\sum T)^2/N]}{NM^2 (N^2 - 1)}
\]

Where \( W \) = the co-efficient of concordance

\( T \) = The sum of rank of each of the variables been ranked = 448,900

\( N \) = Number of variables that are been ranked = 4

Number of responses = 670

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Therefore

\[ \Sigma T^2 = 600^2 + 10^2 + 58^2 + 2^2 \]

\[ = 360,000 + 100 + 3,364 + 4 = 363,468 \]

\[(\Sigma T^2) = 600 + 10 + 58 + 2 = 670 \]

\[ = 448,900 \]

\[ W = 12 \left[ 363,468 - 448,900 \right] \]

\[ = 4 \times \frac{670^2 (4^2 - 1)}{4} \]

\[ W = 12 \left[ 363,468 - 112,225 \right] \]

\[ = 4 \times 448,900 (15) \]

\[ W = 12 [251,243] \]

\[ 26,934,000 \]

\[ W = 3,014916 \]

\[ 26,934,000 \]

\[ W = 0.111937179 \]

Therefore, \( W = 0.1119 \)

The co-efficient of concordance \((W)\) can further be tested for its statistical significance by using the \(F\) -test, where comparison is made between the \(F\) calculated and the \(F\) – critical and if the \(F\) – calculated is more than the \(F\)-critical you will reject the null hypothesis and accept the alternative hypothesis.
H₀: there is no relationship between the provision of educational facilities and academic performance.

Hₐ: there is a relationship between provision of educational facilities and academic performance.

The formula for the F-test (F)

\[ F = \frac{(M - 1)Wc}{(1 - Wc)} \]

Where \( F = F \) calculated

\[ F = \frac{(670 - 1)0.111937179}{(1 - 0.111937179)} \]

\[ F = 74.88597275 \]

0.888062821

F = 84.32508487

F = 84.325

The F calculated = 84.325

To find the F – critical (Fc) the numerator \( V₁ \) = \((n - 1)^2/m \) degrees of freedom.

\[ V₁ = (4 - 1)^2/670 \]

\[ V₁ = 3 - 2/670 \]

V₁ = 2.99

V₁ = 3
To find the degrees of freedom of the denominator of the $F$–critical $V^2 = (m - 1) (n - 1) - \frac{2}{m}$

$$V^2 = 670 - 1 \left[ (4 - 1) - \frac{2}{670} \right]$$

$$V^2 = 669 \left[ 3 - 2.985074627 \right]$$

$$V^2 = 669[0.014925373]$$

$$V^2 = 9.985074537$$

$$V^2 = 9.98$$

Reading from the $F$–statistical table under 1% degree of freedom, $F$ critical will be 3.23.

It can therefore be concluded that there is a relationship between provision of educational facilities and academic performance. Therefore accept;

$H_A$: there is a relationship between provision of educational facilities and academic performance.

From the above analysis, it can therefore be seen that there is a greater level of agreement among the respondents about the causes of poor academic performance.

**Analysis of infrastructure facilities on academic performance**

**Analysis of lecture hall on students**

All the students interviewed were of the view that our lecture halls are inadequate. Some of the reasons cited included; the size of the lecture halls (lecture hall 1 and II), according to the students the capacity of each of the two hall was one thousand $(1,000)$, however, the average class size was about one thousand five hundred $(1,500)$, this already pose as a problem. Most of them have to stand during lectures. Again, the lecture hall facilities such as the public address systems are not functioning properly and sometimes you cannot hear what the lecture says. The public address system therefore hampers quality lecturer delivery. In addition to that, the student’s cited inadequate furniture. The student’s reiterated that, because of the inadequate furniture, most of them have to be at
most of the lectures, two hours ahead of time, for example, if a lecture is to begin at 7:00 am, they have to be at the lecture hall by 5:00am and by the time lectures begin they are already tired and frustrated.

In general all the 600 respondents see the lecture hall as having a negative effect on their academic performance. It can therefore be concluded that there is a negative effect of the lecture halls on student’ academic performance

**Analyses of library facilities on Academic Performance**

Again, all the students were of the view that there is positive relationship between library and academic performance. The students perceive that the state of the library on campus affect their academic performance negatively. The reasons given include; the small size of the library, inadequate textbooks, the non existence of reference materials, out dated periodicals and rude behaviour of some librarians were some of the reasons assigned.

**Analysis of transportation facility on Academic Performance**

Seventy (70%) of the respondents are of the opinion that transportation to and fro lecture hall have negative effect on academic performance. According to them, sometimes they have to wait several hours before they can catch the bus for lectures. Because of that, they sometimes get to the lecture hall late and this affect their academic performance. However, 30% of the respondents did not see transportation as having a negative effect on their performance. According to them, they have their own means of transport which they use for lectures. The only problem they have sometimes is fuelling the motor bikes and cars.

**Analysis of effect of hostel facility on Academic Performance**

Many of the students (95%) have a preference to stay at the hostel facility provided by the university on the main campus. Unfortunately, the University is only able to accommodate about 10% of the students. The remaining students have to look for their own accommodation in and around town and campus. Some live as far as three (3) miles from the main campus and they have to commute to and fro campus almost every day. According to them, this has a negative effect on their academic performance. This also
affects group work and discussions. Because they live far apart from each other, coming together to do group work and discussions is a major problem and this affect there academic performance negatively. According to them, some of the private hostel and rented rooms do not have water and toilet facilities. This is therefore a major problem for them. They have to go carrying water for bathing and for other domestic chores.

**Analysis of effect of quality of lecture delivery on Academic Performance**

The students’ also identified the quality of lecture delivery as another cause of poor academic performance. Fifty eight (58) students, representing 8.6% of responses was identified. One of the student’s reiterated that “the quality of lectures was always hampered by the unstable public address system which impedes the quality of speech and flow of information” again this is also infrastructural in nature. Other student’s were of the opinion that some lecturers could not explain the courses to their understanding and this affect their academic performance negatively.

**Analysis of effect of financial background of student’s parents on Academic Performance**

The financial background of student’s parents was identified as one of the major causes of poor academic performance, 10 of the students constituting 1.4% of responses attributed this cause to poor academic performance. According to the students because of the poor financial background of their parents they don’t have adequate money to buy text book, photocopy material and also buy their essential needs like food and clothing. Because of this, they sometime think of these problems which affects their concentration when they are reading or when they are at lectures and this have a negative effect on their academic performance.

The above analysis has explicitly shown a great relationship between the provision of educational infrastructure facilities and academic performance. The poor educational infrastructure facilities were the key factors affecting students’ academic performance.

**Summary of major findings**

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This study examines the provision of educational infrastructure facilities and academic performance in tertiary institutions in Ghana: UDS – Wa Campus as a case for study. Information was gathered from 600 students.

The study used the GPA as a measure of academic performance of students in the faculty. It was revealed that out of the 600 respondents none could secure a GPA ranging 4.50 -5.00 (i.e. first class). Those who have their GPA ranging 3.50 – 4.49 (i.e. second class (upper division) were 175 representing 29%. Majority of the respondents (59%) have their GPA ranging 2.5 – 3.49 (i.e. second class (lower division). About 8% of the respondents have their GPA ranging 2.00 – 2.49 (i.e. third class). About 1.7% of the student have their GPA ranging 1.50 – 1.99 (pass degree) and 1.0% of the respondents stand the risks of being redrawn from the university.

Some of the causes of poor academic performance in the faculty identified include; poor infrastructure facilities which all the respondents constituting 89.5% of responses was identified as the major cause of poor academic performance. The quality of lecture delivery is another factor which was identified by the respondents constituting (8.6%) of responses. The financial background of students’ parent was also identified as contributing to poor academic performance constituting 1.4% of responses. Educational background of parents was also identified; this constituted 0.2% of responses. These were the factors identified by the students as contributing to poor academic performance. It can be seen that, poor infrastructure facilities was the one with the highest effect.

The study also revealed that the current two lecture halls used for lecturers was inadequate.

It was further discovered that the nature of the lecture hall and the facilities thereof affect academic performance negatively.

With regards to the provision of library facilities on students’ academic performance, the respondents asserted that there is a positive relationship between students’ academic performance and the provision of library facilities. All the respondents were of the view that the campus library affects their academic performance negatively.
About 70% of the respondents are of the opinion that inadequate transportation facilities have negative effect on their academic performance.

**Conclusion**

This study has revealed that there is a strong relationship between the provision of educational infrastructure facilities and academic performance. It also revealed that factors such as student’s parent educational background have very little influence on student’s academic performance. The study therefore consents with Abudu (2005) assertion that whenever you do anything under stress or any form of tension, your performance suffers. The students on Wa campus learn under stressful conditions and this therefore affects their academic performance negatively. It would therefore not be an overstatement to say that the provision of adequate educational infrastructure such as library facilities and provision of adequate library books that are of relevance to the course of study, well equipped, well furnished and adequate lecture halls, adequate transportation facilities and adequate hall of residents would relief the student of tension and enhance high academic performance. There is therefore the need for a collaborative and pragmatic effort between government, the university, the private sector and other stake holders to provide educational infrastructure facilities on the Wa campus in order to improve on student’s academic performance and also make life a little bearable for the student’s.

**Recommendations**

Based on the findings of the study the following recommendations are made;

**Lecture hall facilities**

There is need for the University to speed up work on the third lecture hall and begin the construction of new lecture halls. Given the large number of students admitted every year (about 5,000 students were admitted by Wa campus for the 2010/2011 academic year) the government should give priority to the Wa campus infrastructure problems. The GETFUND allocation for infrastructure development for Wa campus should be increased tremendously. Again, the university should revert to the batch system where large classes are split into batches for effective lecture delivery.
Improving the Quality of Lecture Delivery

The quality of lecture delivery must be given serious booster as this will enhance good academic performance. Logistics such as quality public address systems, power point equipment and the procurement of stand-by power plant to prevent the abrupt disruption of lectures which always affect quality lecture delivery should be provided.

Institute quality control measures

Students should be given the opportunity to assess each lecturer’s lecture delivery at the end of each trimester. Lecturers who are consistently graded lower should be made to face a committee of quality control and the appropriate measures taken against such lecturers.

Provision of Modern Library Complex

A modern library complex well equipped and stocked with relevant reference materials should be provided as a matter of urgency.

Transportation

There is an urgent need for GETFUND to allocate additional bus to the Wa campus to compliment the buses purchased by the SRC. In addition, the three faculties on Wa campus can also contribute to buy an additional bus to supplement what the SRC has purchased.

Hostel facilities

The university can go into partnership with private investors to put up hostel facilities for students with the provision of standard facilities at reasonable affordable rent to ease the accommodation problems on campus. There are several options that can be investigated and the best option chosen.

Grow campus into semi-autonomous college and university

Given the large number of students on Wa campus and the large number of students admitted every year, it is imperative to speed up plans to grow the campus into a semi-autonomous College and subsequently to a full fledge university. This would attract

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enough resources from GETFUND and other sources to speed up infrastructural development.

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