

Influence of Physical Facilities on Students' Academic Performance in University for Development Studies, Tamale

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Abstract

Students learn better in institutions where there exist stimulating physical facilities. This inquiry examined the perceived influence of physical amenities on undergraduates' academic performance at the University for Development Studies Dungu Campus, Tamale. using a descriptive research design, the study sampled 213 undergraduates using a stratified proportional sampling technique. The data was gathered using a self-designed questionnaire. The findings revealed that a greater percentage of the physical facilities in the University were not useful in improving the academic performance of students in the University. However, it emerged that access and available roads on the university premises were slightly useful in improving students' academic performance. Finally, the investigation also indicated that a greater percentage of the students agreed to the extent that physical facilities are useful in improving their academic performance at the university. It was recommended that the university authority should endeavour to improve the quality of the physical facilities in the university.

Keywords: Academic, Facility, Influence, Performance, physical, Students.

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1. Introduction

Educational institutions are mandated to nurture students for academic achievement through teaching and learning. These institutions are schools put in place to provide teaching and learning spaces and learning settings for students under the supervision of teachers. The learning setting refers to the learning environment which encompasses physical, psychological, and socio-cultural setting where teaching and learning takes place (Roser, as cited in Kuresoi, Lymtane & Koda, 2022). The educational institution is made up of both physical and human resources meant for the teaching of learners under the direct supervision of teachers (Kuresoi et al., 2022). It is indicated by Mohammad, Mohammad, and Muntaz (2020) that the school's physical amenities serve as a basic key to success for real teaching and learning. Also, Sam-Kalagbar (2021) noted that institutional physical amenities are essential tools to facilitate and stimulate learning programs. These physical resources are the buildings, roads, furniture, libraries, dining halls, halls of residence, laboratories, and toilets and the human resources are the teachers and administrators of the school. For institutions to ensure the nurturance of students for academic achievement, issues including the socio-economic background of parents, class attendance, high school grades, English ability, employment, peer influence, mass media, and state involvement are often considered (Tadese, Yeshaneh & Mulu, 2022; Sothan, 2019). However, in modern times the excellence of the amenities of institutions has become the subject of consideration in both scholarly and academic circles (Tadese, Yeshaneh & Mulu, 2022; Olugbenga, 2019). This is because these factors play complementary roles in the education and academic enhancement of learners. Academic performance is noted as how a student does a piece of work, and how perfectly or poorly the student does the task within a learning process (Onyebuenyi, 2022). Similarly, academic achievement is seen as the degree to which students, teachers, and the school have achieved their institutional accomplishments. This is judged by using ongoing assessment and cumulative grade point average (CGPA) (Tadese, Yeshaneh & Mulu, 2022).

It is not uncommon nowadays to see parents seeking institutions that are well endowed with available and high-quality facilities for their wards during admissions. This is because the quality of the physical facilities of an educational institution performs a crucial function in learners' academic achievement in both public and private

tertiary institutions concerning the quality of educational delivery. For instance, the quality of the physical facilities such as good libraries, laboratories, decent dormitories, qualified lecturers as well as ventilated lecture halls can improve students' grade point averages (Arshad, Qamar & Gulzar, 2018). It is also noted that the physical facility of an institution is a vital asset that promotes the quality of an educational program (Tadese, Yeshaneh & Mulu). Students, generally, demonstrate highly superior intellectual abilities and social competencies in institutions that are endowed with stimulating high-quality physical facilities. This means that the quality and availability of physical facilities in an institution of learning have a huge and direct effect on the behaviour of learners in the institution of learning. According to Bandura's (1977) social learning theory, the child's setting modifies learning and behaviour. This denotes that behaviour and learning are reactions to the environment. Students' academic performance depends on the physical facilities surrounding them. The institutional physical facilities determine largely how a student acts and interact during teaching and learning (Dangara & Geradine 2019). Also, the nature and type of physical facilities of an institution of learning define the nature of the institution, whether the institution is a developed, developing, rural, or urban institution. These physical facilities of an institution, are the materials that are seen within the school area which encompasses classrooms, chalkboards, tables, laboratories, libraries, and others that enhance learning outcomes (Onyebuanyi et al., & Njoku, 2022). In addition, the physical facilities of an institution may include; the library, laboratory, and other infrastructure that promote learners' education.

There are research studies that are conducted on the impact of physical amenities on students' learning across the globe. Olugbenga's (2019) study in Kaduna state, Nigeria found that insufficient and poor institutional amenities affect the academic achievement of secondary school students and teachers negatively. Agbor et al (2022) study among undergraduate students of Environmental Education University in Calabar-Nigeria revealed a significant influence of availability and adequacy of physical amenities on the academic performance of undergraduate students. Akomolafe and Adesua's (2016) study in South West Nigeria revealed a significant association between physical facilities and students' level of motivation and academic performance. Arshad, Qamar, and Gulzar's (2018) research in Pakistan revealed that ventilation, plants, playgrounds first aid boxes significantly influenced students' performance. Olanrewaju's (2016), study in Kwara States in Nigeria revealed enough classrooms and amenities like chairs, lockers, libraries, textbooks, laboratories, and workshops are suitable for improving students' learning. (Kuresoi, Lymtane, and Koda's (2022) study in Tanzania found that a shortage of school physical amenities such as; classrooms, laboratories, dormitories, dining halls, and instructional materials affects the poor academic accomplishment of learners. Onyebuanyi et al., (2022) study in Abia State found the library which is a school amenity to have a major effect on students' 'academic achievement in secondary institutions. Similarly, library rooms, laboratories which are physical facilities of an institution were found in studies to greatly exert an impact on the academic performance of learners (Kirch et al, 2021; Closs, Mahats & Imms, 2021; Alami & Hawas, 2021; Edwards, 2018). Closs et al., (2021) study in the Australian Faculty of Business and Economics found the size of a class, furniture, technology, laboratories, and libraries to strongly influence students' academic performance. It is also found that physical amenities such as overcrowded dormitories, insufficient classroom amenities, low internet connectivity, and large classes impact the academic accomplishment of learners (Tiruneh et al., (2020). A related study conducted by Olayinka, Olanipekun, and Oluwadara (2021) on the impact of infrastructural amenities on learners' academic performance in basic school sciences and technology in junior secondary schools in Nigeria revealed a low level of availability of school amenities such as science laboratories, computers, electricity supply services, health care services as well as first aid boxes influence poor performance of learners. Furthermore, Edwards (2018), investigation in Tanzania on the influence of physical amenities on students' academic accomplishment indicated insufficient physical amenities such as chairs, teachers' accommodations, laboratories as well as facilities for games to harm students' academic performance. Odunola et al (2020), study on the effectiveness of physical amenities in Kwara State Public Secondary schools found 59.9% of the participants agreeing that physical amenities have an impact on overall school effectiveness.

In the context of Ghana, several studies have focused on the influence of school amenities on students' academic performance. Osibo (2019), investigated school amenities upkeep in Cape Coast Metropolis. The results indicated that learners are likely to learn better and attain higher levels of amenities in the school in a favourable condition. Also, Baafi's (2020) study on school physical environment and students' academic performance found that students with a pleasant physical environment perform better than those in uncondusive learning environments. The author confirmed well-situated buildings within the school, a beautiful physical environment, laboratories, and good playgrounds help in improving programs within the school system and effective teaching and learning. It is worth noting that many public universities in Ghana including the University for Development Studies-Tamale are grappling with high admission rates into the institutions which exerts severe stress on the available physical facilities of the universities. Also, many public universities are financially inadequate which

renders the universities helpless to provide, maintain, or renovate existing facilities of the institutions. Therefore, it is common to see many amenities in public universities such as; hostels, lecture halls, places of residence, laboratories, toilets, etc. dilapidated which may have an adverse influence on academic activities in these institutions. This view is in line with Sam-Kalagbor (2021) who attested that several amenities in schools intended to improve learning activities today are old and obsolete making it difficult to meet the 21st century learning. This investigation, therefore, explored the influence of physical amenities on undergraduates' academic accomplishment at the University for Development Studies Dungu Campus, Tamale.

1.1 Objectives of the Study

The objectives that guided the inquiry were to:

1. explore the type (s) of physical facilities that improve students' academic performance at the University for Development Studies in Dungu campus, Tamale
2. find out the extent to which the physical facilities improve students' academic performance at the University for Development Studies in Dungu Campus, Tamale.

1.2. Research Questions

This study addressed the following research questions:

1. Which type of physical facility improves students' academic performance at the University for Development Studies in Dungu campus, Tamale?
2. To what extent are these physical facilities useful in improving students' academic performance at the University for Development Studies in Dungu campus, Tamale?

2. Methods

2.1 Study Design

The descriptive survey was adopted for the study. This design simply tries to determine and describe a situation. The design attempts to describe the current state of an issue under investigation. This type of design describes the characteristics, behaviours, and opinions of respondents (Manjunatha, 2019). This study is descriptive hence the use of a descriptive survey.

2.2 Study Population

The study's population comprised 479 level 300 Basic Education Students of the Faculty of Education in Dungu, Tamale. This was composed of 195 males and 285 females. The sample size of the study was 213 respondents comprising 85 males and 128 females. The sample size was determined using Morgan and Krycie's (1970) Table of sample size selection. This sample size was deemed representative of the research.

2.3 Sampling Procedure

A proportional stratified sampling method was applied to select a sample of 213 undergraduates for the research from a total population of 479 level 300 basic Education Students of the Faculty of Education in Dungu Campus, Tamale. The respondents were stratified based on gender.

2.4 Research Instrument

A questionnaire was constructed by the researchers and used to collect the data. The questionnaire encompassed three sections viz; personal data, type of physical facilities that improve the academic performance of students, and usefulness of physical amenities to students' academic performance.

2.5 Validity and Reliability of the Instrument

The content and face validity of the instrument were ascertained by the researchers. Concerning the reliability of the instrument, its internal consistency was obtained as 0.86 using Cronbach's Alpha. The value 0.86 was considered reliable for use built on Cohen, Manion, and Morrison's (2018) interpretation that if the reliability coefficient of an instrument is above 0.70, then the instrument is consistent for use.

2.6 Data Collection Procedure

The researchers obtained permission from the Dean of the Faculty of Education to use the students for the study. The researchers arranged with the selected respondents of the study at a lecture hall at their convenient time and administered the questionnaires. The purpose of the study was explained to the students. Respondents were also

informed of confidentiality, anonymity, and freedom to take part in the study or withdraw. The students were allowed ample time to attend to the questionnaire questions. The finished questionnaires were collected on the day of administration by the researchers. The retrieval rate was a hundred percent.

2.7 Data Analysis Procedure

Descriptive statistics were used to analyse the data. Specifically, frequencies and percentages were used to analyse the two research questions.

3. Results and Discussion

1. Which one of the types of physical facilities improves students' academic performance at the University for Development Studies Dungu campus, Tamale? Table 1 is used to answer this research question.

Table 1: Students' Responses on the Type of Physical Amenities that Improve their Academic Achievement at the University for Development Studies, Dungu Campus, Tamale.

PROFILE	CATEGORIES	FREQUENCY	PERCENTAGE
Availability of lecture halls.	Yes	27	12.7
	No	186	87.3
Enough furniture and desks for use during lectures.	Yes	59	27.7
	No	154	72.3
Availability of public address systems/projectors for lectures.	Yes	65	30.5
	No	148	69.5
Adequate halls of residence for students and lecturers.	Yes	21	9.9
	No	192	90.1
Good lighting/ventilation system in lecture halls/libraries.	Yes	48	22.5
	No	165	77.5
Demonstration rooms/laboratories for practical lessons.	Yes	21	9.9
	No	192	90.1

Availability of departmental libraries and internet facilities.	Yes	28	13.1
	No	185	86.9
Availability of suitable washroom.	Yes	13	6.1
	No	200	93.9
Availability of suitable sources of drinking water.	Yes	8	3.8
	No	205	96.2
Access and available roads on campus.	Yes	108	50.7
	No	105	49.3
Adequacy of lecturers.	Yes	161	75.6
	No	52	24.4

Source: Field Survey (2024)

Table 1 presents responses regarding various types of physical facilities and their perceived effectiveness in improving students' academic performance at the University for Development Studies Dungu campus, Tamale. Each category represents a different aspect of the physical facility at the university, and students were asked whether these physical facilities have effectively improved their academic performance, with options of "Yes" or "No."

Concerning the availability of lecture halls; 27 students said Yes representing 12.7%, and 186 students responded No representing 87.3%. This suggests that the majority of students do not believe that the availability of lecture halls improves their academic performance at the university. This finding contradicts the view of Kirch et al., (2021) who found physical facilities of a school such as libraries, laboratories, books, dormitories, and classrooms influence students' academic performance. This finding implies that University management should improve the quality of the available lecture rooms in terms of increasing space to cater to more students during lectures. In addition, the lecture halls should be painted and provided with enough ceiling fans to provide enough ventilation for ease of learning.

On the issue of enough furniture and desks for use during lectures; 59 students said Yes representing 27.7%, and 154 students responded No representing 72.3%. The result indicates that the provision of adequate furniture and desks for use during lectures does not influence students' academic performance. This result is contrary to the views of Gloss et al. (2021) who found class size, furniture, technology, laboratories, and library rooms to have a great influence on students' academic performance. This implies that the nature of furniture and desks used by students in the university are probably of poor quality which does not aid students' effective learning. Also, the furniture and desk may be outmoded which does not meet modern standards for learning. Furthermore, the furniture and desks are probably broken down which requires repairs to put them in good shape for students to use for learning.

In terms of the availability of public address systems/projectors for lectures; 65 students said Yes representing 30.5%, and 148 students responded No representing 69.5%. The result indicates that the availability of public address systems/projectors does not promote students' academic performance. The significance of this finding is that there may be enough public address systems and projectors, but they may not be functional to enhance the learning needs of students due to their overuse. This also means the university may lack technical experts who are responsible for the maintenance of the gadgets.

About adequate halls of residence for students and lecturers; 21 students said Yes representing 9.9% and 192 students responded No representing 90.1%. The result shows that adequate halls and residences for lecturers do not promote students' academic performance. It implies that a vast majority of the students do not believe that there are adequate halls of residence for students and lecturers. This result is in line with Kuresoi et al. (2022) that the scarcity of physical amenities such as classrooms, libraries, laboratories, dining halls, dormitories, and teaching learning materials in the school influences the poor academic performance of students. The significance of the result is that halls of residence for both students and lecturers may be adequate, but they may not be of a good quality/standard that will enhance the students' academic performance. It is also likely that the university has limited halls of residence for both lecturers and students that will aid effective academic work in the university. It also implies that students are interested in modern hostels with modern facilities such as telephone services, catering services, television facilities, and internet connectivity in each room for their use which will enhance their studies and comfort.

With the issue of good lighting/ventilation systems in lecture halls/libraries; 48 students said Yes representing 22.5% and 165 students responded No representing 77.5%. The result reveals that good lighting/ventilation does not promote the academic accomplishment of the learners. The finding does not favor the assertion of Arshad et al. (2018) who found ventilation, playgrounds, and first aid medical boxes to significantly influence students' academic achievement. This finding implies that probably there exists no proper/alternate lighting and ventilation system in the lecture halls of the institution to cater for any casualty. It also implies that the existing lecture halls and libraries require expansion/renovation to create more space and windows for lighting and ventilation.

Based on demonstration rooms/laboratories for practical lessons, 21 students said Yes representing 9.9% and 192 students responded No representing 90.1%. This shows that demonstration rooms/laboratories for practical lessons do not improve students' academic performance. Similarly, the result implies, that there is possibly a significant lack of demonstration rooms/laboratories for practical lessons in the university. It also implies the demonstration rooms and laboratories may not be well-resourced in terms of equipment to promote students' better learning. Furthermore, it implies that the university management should ensure that more demonstration rooms/laboratories are created for all the departments in the faculty. It also implies more competent staff are needed in the demonstration rooms/laboratories to provide quality and efficient services to students to improve their academic achievement.

Regarding the availability of departmental libraries and internet facilities; 28 students said Yes representing 13.1% and 185 students responded No representing (86.9%). The majority of the students felt that departmental libraries and internet facilities do not promote their academic performance at the university. This result is contrary to the Onyebuenyi et al. (2022) study that found the availability of library resources to greatly influence students' academic performance in secondary schools. This result implies that it is most likely that the university does not have departmental libraries and internet facilities. Also, in the case of the departmental libraries, they may be available but not well-resourced enough concerning current reference books, space, and qualified library staff that will help improve students' learning. In addition, internet resources may be available but with poor connectivity making it difficult for students to access the internet facility for effective learning. It is also likely that the management of the Department does not allow students free access to the internet facility for their studies.

Regarding the issue of the availability of suitable washrooms; 13 students said Yes representing 6.1% and 200 students responded No representing 93.9%. The result denotes that the availability of suitable washrooms does not improve students' academic performance at the university. This result is contrary to Comfort and Veronica, cited in (Onyebuenyi et al (2022) that the availability of physical facilities such as libraries, laboratories, and toilet facilities in the school motivates learners to learn. The finding implies that it seems suitable washrooms are not found on the premises of the university. Also, the washrooms may be available but broken down making it difficult or inaccessible for students to use. This means that students face emotional, social, physical, and emotional difficulties when using the washrooms.

Furthermore, about the availability of suitable sources of drinking water; 8 students said Yes representing 3.8% and 205 students responded No representing 96.2%. Similarly, the finding implies that there is significant dissatisfaction with the availability of suitable sources of drinking water on the campus of the University for Development Studies Dungu Campus, Tamale. This implies that the source of drinking water or water supply system in the university should be improved by the university management and other supporting agencies who are stakeholders in education.

In terms of access and available roads on campus; 108 students said Yes representing 50.7% and 105 students responded No representing 49.3%. This result indicates that access and available roads on campus promote students' academic performance. The finding implies that there are enough access roads on the University for Development Studies Dungu Campus, Tamale.

Finally, based on the adequacy of lecturers; 161 students responded Yes representing 75.6% and 52 students responded No representing 24.4%. It is revealed that the adequacy of lecturers improves students' academic performance. The finding implies that the university management has appointed enough qualified teaching staff in the university to promote teaching and learning.

2. To what extent are the physical facilities useful in improving students' academic performance in the University for Development Studies Dungu campus, Tamale? Table 2 will be used to answer this research question.

Table 2: Extent of Physical Amenities Improving Academic Performance of Students in University for Development Studies Dungu Campus, Tamale.

CATEGORIES	FREQUENCY	PERCENTAGE
Very useful	17	8.0
Useful	70	32.9
Not useful	126	59.1
Total	213	100

Source: Field Survey (2024)

Table 2 presents responses concerning the extent to which the various physical facilities have improved students' academic performance at the university. Students were asked to categorise their responses into three categories: "Very useful", "Useful," and "Not useful." In Table 2, 17 students responded "Very useful" representing 8.0%. This indicates that a small portion of students perceived the physical facilities in the University as "Very useful" in improving their academic performance. These students viewed the facilities as highly beneficial and integral to their academic success.

It is also indicated in Table 2, that 70 students responded "Useful" representing 32.9 % of the students. These students perceived the physical facilities as "Useful" in improving their academic performance at the university. They acknowledged the positive outcome of these physical amenities on their academic endeavours, although not to the extent of considering them "Very useful". This result supports the view of Akomolafe and Adensua (2016) that there is a substantial association between physical amenities and learners' level of drive and academic performance. Finally, 126 students said "Not useful" representing 59.1%. This view is also supported by Odunola et al (2020) study where 59.9% of respondents agreed that physical amenities affect school effectiveness. On the other hand, the majority of students do not find the physical facilities "Useful" in improving their academic performance. The students likely perceived shortcomings or inadequacies in the facilities that hindered their academic progress or overall experience at the university. These results indicate a perception among students regarding the effectiveness of physical facilities in improving their academic

performance at the university. While a considerable percentage of the students (40.9%) found them useful, there is also a notable high percentage of undergraduates (59.1%) who did not perceive them as useful. This finding implies that there is a need for the university authority to improve upon the provision and maintenance of physical facilities in the university.

4. Conclusion and Recommendations

The findings of the study pinpoint areas where there is a need for improvement in physical facilities in the university that will enhance students' academic performance. For instance, areas such as; washrooms, lecture halls, furniture for studies, and sources of drinking water need to be considered seriously. There is also a mixed perception of students about the extent to which the physical facilities have improved their academic performance at the university. It is also noted that the physical facilities to some extent do not have the potential of improving students' academic performance in institutions. Generally, a lack of good physical facilities in any institution will stifle the academic programs of the institution. In sum, the study suggests a general lack of physical facilities at the university. It was recommended that the university authority should improve upon the quality of the existing physical facilities of the university either by replacing the old ones, repairing and renovating the dilapidated ones as well as equipping the university with modern physical facilities to maximise students' learning at the university. Also, the university should make informed decisions to prioritise investments and initiatives in the university that will enhance the overall quality of the learning environment. Finally, universities should plan their educational facilities adequately to enhance students' academic performance.

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