
**INFRASTRUCTURE DEVELOPMENT AND ACADEMIC PERFORMANCE OF STUDENTS IN
SECONDARY SCHOOLS IN UGANDA. A CASE STUDY OF DUHAGA SECONDARY SCHOOL, HOIMA
CITY**

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Abstract

This research report study aimed to investigate the “impact of infrastructure development on academic performance of students in secondary schools in uganda. a case study of Duhaga secondary school, Hoima city”. Questionnaires were used to collect data under a case study research design. Qualitative and quantitative means were used to analyze the data. The objectives of the study used were; to examine the influence of libraries to students’ academic performance in secondary school, to examine the impact of laboratories on academic performance of students in secondary schools, to examine the effects of class room size on students’ performance in secondary schools. The study sampled 50 respondents because it is large enough compared to the study population and the respondents were selected using simple random sampling method, It was important because it gave the researcher freedom to select certain respondents with in-depth knowledge regarding the issue under investigation. The study shown that 50% of the respondents indicated that 50% of the students were affected by mixed gender thus affecting their academic performance and 50% also indicated mixed academic ability as their seating arrangement affected their academic performance since clear students like seating separate thus segregating the weak students. The Ministry of Education should ensure that school’s infrastructure, including spacious and well-tendered classrooms with adequate number of desks should be availed to every public primary school.

Key words: infrastructure, development, academic performance, students and secondary schools

Background of the study

In Uganda, education is a very crucial process through which an individual's life chances are determined (Victoria et al., 2023). Beyond the economic significance, education is viewed as a good in itself and indeed a basic human right with regard to the lower level of education (Flavia et al., 2023). Education is a universal investment in human beings and a value resource for economic benefit of the country. The governments all over the world committed themselves to the provision of Education for All (EFA) at Dakar, Senegal in 2000 (Anthony, Kazaara, & Kazaara, 2023).

The goal of development infrastructure system in secondary schools seeks to increase school attendance of students (Richard, 2022), enhance staff motivation and to improve academic achievement of students (Alimi, 2004). There is a link between school architecture and its users, (students and teachers); Research has shown that a well-planned school with clean and safe learning environment are important for academic achievement (Godfrey et al., 2023). Physical facilities play a key role in the attainment of the school's intended objectives and overall quality performance in national examinations. public secondary schools are often characterized by lack of infrastructure facilities such as adequate classrooms, library, computer centers and laboratories (Victor et al., 2023).

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Students' performance has been an issue of great concern since the beginning of modern education. Majority of the countries have realized that in the heart of educational process are the students (Anthony, Kazaara, Kazaara, et al., 2023). Further it has been noted that all the innovations being seen in education without good performance are destined for failure (Christopher, Moses, et al., 2022). Globally, the main objective of education in any democratic society is to provide learners with quality education that enlightens them to be productive members of the society (Kundu & Tutoo 2000). According to (Zulaikah & Rebecca, 2023), the infrastructure development for the school affects the learner. The setting must be attractive enough to make students wish to spend long hours there. What we have presently in most of our secondary schools does not meet these requirements (Christopher, Komunda, et al., 2022). The roof may still be in place or may have been blown off by wind. If the latter is the case, students are forced to study without being protected from the effects of the weather.

Problem statement

The state of infrastructure development in secondary schools today appears to be a great concern to students' parents and all educators (Victor et al., 2023). These seems to be inadequate provision of this facilities, some of the existing ones seems to be in a dilapidated state, while some seems lack of god maintenance or may not function at all Lanham (2015). Moreover, there seems to be an increase in population of students due to high enrolment rate. A close observation of student's performance seems to indicate lack of inadequate development infrastructure and an enabling learning environment that could motivate, secondary school students towards high performance (Isaac et al., 2023). It seems that where these facilities are lacking, students develop non-challant attitude toward learning. These problems are concerns necessitate investigating into relevance of development infrastructures on students' academic performance. An analysis of studies conducted on the physical school environment reveals that most research has been primarily conducted in the United States of America (Richard et al., 2023) on contribution of school infrastructure to the learning output, in the earlier studies, was a neglected variable and accordingly not given much attention (Mark et al., 2023). It was thought that either harmful or pleasurable school environments mainly affect the comfort levels of learners (Oromo et al., 2023). Stress-free environments were assumed to positively affect the learning process. Evidence in the mid 1980's confirmed the idea of a relationship between school condition and academic achievement (Godfrey et al., 2023). However, few studies investigated this relationship in detail (Kazaara et al., 2023)

Objectives of the study

1. To examine the influence of libraries to students' academic performance in secondary school.
2. To examine the impact of laboratories on academic performance of students in secondary schools.
3. To examine the effects of class room size on students' performance in secondary schools.

Methodology

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Research Design

A research design is the plan structure and strategy of investigations conceived so as to obtain answers to research questions, (Mugenda & Mugenda, 2010). This study adopted a descriptive design. According to Gay (1981) descriptive survey research method was used to investigate, determine and report the way the situation is or was at a given time. According to Kerlinger (2002), descriptive survey research design was used to obtain pertinent and precis: information concerning the current status of a problem/issue and where possible draw valid general conclusion from the facts available. In view of the above-mentioned characteristics of a descriptive design, it is the best to apply in this study because it helped the researcher to explore and gather information on current situation concerning issues being investigated in this study.

Target Population

According to Orodho (2004) target population comprises of the items or individuals under consideration in a given study. The target population in this case consisted of 100 respondents that is of 1 head teacher, 19 teachers, 50 students and 30 parents in Duhuga secondary school, Hoima district.

Sample Size

The purpose for which sampling if done is to secure a group that is representative of the whole population (Mugenda, 2008). Burns and Grove (2003) further state that sampling is a process where a collection of people, events or behavior is selected in conducting a study. The researcher selected Duhuga Secondary school in Hoima city as the case study. According to Fink (2003), financial, accessibility and time constraints were taken into consideration in using purposive sampling technique. Cohen, Manion, and Morrison (2001) observed that the entire populace was divided into homogenous groups, with each grouping possessing comparable characteristics. Therefore, the study used a sample size of 50 respondents that is 1 head teacher, 10 teachers, 30 students and 9 parents because it was large enough compared to the target population in Duhuga secondary school, Hoima city.

Table 1: showing Sample size of the respondents

Category	Sample size	Percentage (%)
Head teacher	1	2%
Teachers	10	20%
Students	30	60%
Parents	9	18%
Total	50	100%

Source, Primary data, 2022

Sampling Procedures

Purposive sampling method was used to select 1 head teacher, 30 students, 10 teachers and 9 parents from the target school. These were selected because they have already done the subject selection and have at least two years' experience in the school hence able to assess the infrastructure facilities in the school. purposive sampling was in consideration of the financial, accessibility and time constraints in the conduct of the study. In the second stage the researcher employed simple random technique to select the number of respondents. The process of sampling randomly involved selecting a sample (random sample) from a statistical population considering that every element in the population has a predetermined level of probability to be selected. Simple random technique eliminated bias since selected respondents have an equal chance of being selected in the sample.

Data collection instruments

Questionnaire

A questionnaire is a set of questions used to gather information in a survey. It had a technique designed for collecting primary data by eliciting written responses from the subject and was by self-administered questionnaires. Therefore, administering of questionnaire was a method while questionnaires were instruments to be employed. The method of survey using questionnaire was deemed appropriate since part of the questionnaire provided respondents a choice of picking their answers from a given set of alternatives while the other part of the questionnaire allowed them to qualify their responses (Amin, 2005). Questionnaires were advantageous since they covered many people all at once. Self-administered questionnaires were advantageous because it answered anonymously; this means that sensitive and personal questions were more likely to be answered.

Data analysis

This study produced both quantitative and qualitative data. Once the questionnaires are received, they were coded and edited for completeness and consistency. Quantitative data was analyzed by employing descriptive statistics and inferential analysis using statistical package for social science (SPSS) (Nelson et al., 2022). This technique gave simple summaries about the sample data and presented quantitative descriptions in a manageable form, Gupta (2004). Together with simple graphics analysis, descriptive statistics form the basis of virtually every quantitative analysis to data, Kothari (2004). The data was presented using frequency distribution tables, bar charts and pie charts for easier understanding.

RESULTS

Observation Schedule for Library

An observation was conducted using observation schedule in the school concerning library and responses indicated on Table 1

Table 1: Observation Schedule for Library

Issue	Frequency
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Has library	Yes
Permanent library	No
Has library assistant	Yes
Study materials are adequate	No
Library accessible	No
Library neat and spacious	No

Source, Primary data, 2022

From the observation schedule in the school, the researcher discovered that the school had a library with a library assistant but it was not permanent and the materials in the library are not adequate enough for the students since the researcher found some students sharing books, library was not accessible to all the students in the school since only candidate were allowed to be in the library and students without IDs were not allowed in the library thus affecting their performance academically, the researcher also observed that Duhaga secondary school had no library neat and spacious (Polycarp et al., 2023).

Sources of Funds for Physical Infrastructure

The researcher asked the students to indicate the source of funds for library in Duhaga secondary school and responses are in Table 2.

Table 2: Source of Funds for Library

Source of funds	Frequency	Percentage
Government and parents	25	50
Parents and fees donors	10	20
Constituency Development Fund	15	30
Total	50	100

Source, Primary data, 2022

From the study, 50% of the students indicated that library can be constructed from funds obtained from government and parents. This shows that with good will funds from government and parents are sufficient to build library in school (Faith et al., 2023).

Library Comfortable

The pupils were asked to indicate the state of libraries in their schools and their responses are shown on Table 3.

Table 3: State of the Library

State of library	Frequency	Percentage
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Very comfortable	2	
Comfortable	3	
Fairly comfortable	25	
Total	30	

Source, Primary data, 2022

From the findings, 5.7% of the pupils indicated that the library is fairly comfortable while only 1.1% of pupils indicated that the library is very comfortable. Therefore, the libraries require some improvement. Only one school has the library. Comfort in library lead to pupils concentrate well in their studies (Brighton et al., 2023).

Discomfort may defeat academic performance.

Effects of class room size on students' performance

Funds for Classroom Construction

The respondents were asked to indicate the source of funds for classroom construction and responses are shown on

Table 4: Funds for Classroom Construction

Source of funds	Frequency	Percentage
Government	15	30%
CDF and government	10	10%
Parents and government	25	50%
Total	50	100%

Source, Primary data, 2022

The findings have shown that 10% of the respondents indicated that funds for classroom construction is obtained from Government and Constituency Development Fund (CDF) while 50% of students indicated that funds for classroom construction is obtained from Parents and government while 30% indicated that funds for class construction is obtained from the government (Mercy et al., 2023).

Reason for Overcrowding in Schools

Table 5: Reasons for Overcrowding in Classrooms

Reasons frequency	Frequency	Percentage
Very many students in a classroom	25	50%
Inadequate desks	15	30%
Not crowded and thus comfortable	10	20%
Total	50	100%

Source, Primary data, 2022

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From the study, only 20% of students indicated that they are not overcrowded and thus comfortable in their classrooms. The study also indicated that the classrooms have very many students' (50%) and have inadequate desks (30%) (Sub-county et al., 2023).

This may lead to low academic performance.

Seating Arrangements

The teachers were asked to indicate the seating arrangement of pupils in the classroom and Table 6 shows the responses.

Table 6: Seating Arrangements

Arrangement	Frequency	Percentage
Mixed gender	25	50%
Mixed academic ability	25	50%
Total	50	100

Source, Primary data, 2022

The study has shown that 50% of the respondents indicated that 50% of the students are affected by mixed gender thus affecting their academic performance and 50% also indicated mixed academic ability as their seating arrangement affects their academic performance since clear students like seating separate thus segregating the weak students (Micheal et al., 2023).

Conclusion of the Study

The study concluded that, in general, infrastructure in Duhuga secondary school is poor. Though it had a library but it was not accessible to every student and had inadequate study materials. Also, most classrooms in the school were overcrowded with nearly all learners sharing desks in classrooms. While accepting that infrastructure is just one determinant factor, it would not be farfetched to conclude that infrastructure has been a key factor in the below average performance of students in national examinations over the years.

Recommendations

The Ministry of Education should ensure that school's infrastructure, including spacious and well-tendered classrooms with adequate number of desks should be availed to every public primary school.

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