

Physical Infrastructural Facilities and Students' Academic Achievement in Selected Government-Aided Universal Secondary Schools in Mbale City, Uganda

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ABSTRACT

This examination inspected an affiliation amid physical infrastructural facilities and learners' academic achievement under designated government funded universal secondary educational institutions under Uganda's Mbale City. The examination looked forward to addressing the following specific objectives; i) To examine the relationship between classroom infrastructural facilities and students' academic achievement, ii) To examine the relationship between laboratory & library infrastructural facilities and students' academic achievement, and iii) To examine the relationship between furniture & equipment infrastructural facilities and students' academic achievement in selected government-aided universal secondary schools in Mbale City, Uganda. The examination was steered through a research design for correlation following a quantifiable methodology. 50 individuals sample (head teachers and teachers) was picked from the designated schools under Mbale City. This study employed both analysis methodologies for correlation and descriptive to examine the quantitative primary data gathered. This examination found an existence of a statistically constructive and strong substantial affiliation amid classroom infrastructural facilities and learners' academic attainment under designated government funded universal secondary educational institutions under Mbale City, Uganda. This examination besides found an existence of statistically constructive and strong substantial affiliation amid laboratory & library infrastructural facilities and students' academic achievement under designated government funded universal secondary educational institutions under Uganda's Mbale City . Additionally, the examination realized an existence of statistically constructive and strong substantial affiliation amid furniture & equipment infrastructural amenities and students' academic achievement under selected government funded universal secondary educational institutions under Mbale City, Uganda. The study concludes that physical infrastructural facilities such as classroom infrastructural facilities, laboratory & library infrastructural facilities, and furniture & equipment infrastructural facilities are positively and significantly associated with learners' academic achievement whereby an improvement under diverse physical infrastructural facilities resultantly results towards an enhancement under learners' academic achievement under selected government funded universal secondary educational institutions under Uganda's Mbale City, . This examination proposes that schools must provide adequate furniture and learning materials such as ergonomic desks and chairs, textbooks, writing materials, and teaching aids which improves comfort, posture, and ability to participate effectively, resultantly influencing an increase in pupils' academic performance in a few government-funded universal secondary educational institutions across Mbale City, Uganda.

Keywords: Physical Infrastructural Facilities, Classroom Infrastructural Facilities, Laboratory & Library Infrastructural Facilities, Furniture & Equipment Infrastructural Facilities, and Students' Academic Achievement.

INTRODUCTION

Students' academic achievement is a key indicator of the effectiveness of the education system and contemplates the scope whereby learners acquire the abilities and knowledge intended in the curriculum (Budiarti & Solehudin, 2024). The attainability and quality of physical infrastructural amenities like classrooms, laboratories, libraries, furniture, and learning equipment act a critical character in shaping The instruction and comprehension environment and influencing students' academic outcomes (Rafik, 2021). Adequate and well-maintained facilities enhance student concentration, participation, and practical learning opportunities, which contribute to improved academic achievement (Edgerton & McKechnie, 2022). However, many schools in developing countries, including Uganda, continue to face infrastructural challenges due to increased enrollment and limited resources, resulting in overcrowded classrooms and inadequate learning facilities that negatively affect learning outcomes (Kipkemboi & Korir, 2019). In Mbale City, concerns have been raised about declining academic performance among students in government-aided secondary schools, characterized by poor subject mastery and inconsistent attendance (Mbale District Local Government, 2023). Therefore, this examination examines an affiliation amid physical infrastructural facilities and students' academic achievement under dessignated government funded universal secondary educational instituton across Mbale City, Uganda.

Historical Perspective

World wide, students' academic attainment has considerably been impacted besides shaped through improved school facilities or infrastructure such as classrooms, libraries, laboratories, which boost students' academic attainment throughout educational institutions (Edgerton & McKechnie, 2022). Early in the 20th century, educational thinkers started to acknowledge the effect of physical infrastructures on learning. The physical infrastructures shape students' ability to focus, retain information, and participate actively. Poor infrastructural conditions increase stress and absenteeism, which correlate with lower students' academic achievement. Progressive education movement promoted collective, learner-centered surroundings, stressing the infrastructural framework as vital towards learning outcomes and enhanced students' academic performance (Amsalu & Sintayehu, 2024). Throughout the period following self-sufficiency, fresh independent African nations aimed to increase entry towards edufication as an advancement instrument. Educational institutions growing awareness the significance of facilities and infrastructures for student inclusive. Nevertheless, quick growth frequently put a pressure on resources, resulting in congested class and debilitated social coherence. Physical infrastructures like classrooms, libraries, laboratories, sanitation facilities, and technological facilities, considerably impacted students' academic attainment (Kipkemboi & Korir, 2019).

Theoretical Perspective

This examination was oriented through Systems Resource Philosophy formulated in 1962 by Blau and Scott . The speculation proposes that physical and material resources are fundamental educational inputs that help produce desired outputs such as academic achievement (Zaatari & Maalouf, 2022). According to Mukasa (2018) within this view, school infrastructures such as classrooms, labs, libraries, utilities, etc. are treated as key resources that must be available and optimally used to support learning processes. When these infrastructures are properly provided and utilized, they contribute to improved student performance and achievement. The author asserts that availability and accessibility of physical infrastructure are essential inputs in the educational production process, influencing how effective learning occurs (Mukasa, 2018). As a result, this hypothesis applied to this investigation given that it provides a logical linked towards physical infrastructural facilities and students' academical attainment.

Contextual Perspective

The examination was conducted using a sample of government-funded universal secondary educational institutions across Uganda's Mbale City, inspecting the affiliation amid physical infrastructural facilities and academic success of learners. Mbale City was considered into account due to the low academic achievement of the students. in government secondary schools revealed by declining poor cognitive skills development, poor subject content mastery, students' academic performance, and irregular school attendance amongst others (Mbale District District Local Government, 2023).

Conceptual Perspective

Physical infrastructural facilities refer to the tangible, build, and material components of a school or learning environment that support teaching and learning activities. These facilities provide the physical spaces and amenities necessary for effective education (Mukasa, 2018). Students' academic achievement denotes the scope whereby learners attain the knowledge, skills, competencies, and understanding intended by a curriculum, usually measured through formal assessments, tests, examinations, or grades (Budiarti & Solehudin, 2024). In this study, physical infrastructural facilities were envisioned in form of classroom infrastructural , laboratory & library infrastructural, and furniture & equipment infrastructural facilities, whilst academic performance, classroom involvement, learning progression, application of cognitive skills, topic mastery, and interpersonal abilities were used to conceptualize students' academic attainment.

Statement of the Problem

Under an ideal world, secondary schools are expected to provide adequate physical infrastructural facilities such as well-constructed classrooms, equipped laboratories, functional libraries, and appropriate furniture and learning equipment to support effective teaching and learning. Such facilities create a conducive learning environment that enhances student concentration, practical learning, and active participation, which ultimately contribute to improved academic achievement (Rafik, 2021; Edgerton & McKechnie, 2022). Uganda's Ministry of Education and Sports has inaugurated policies into existence such as the Universal Secondary Education (USE) program and the Education Sector Strategic Plan (ESSP) aimed at improving educational quality through increased access to edification and advancement of school infrastructures and learning facilities (Ministry of Education and Sports, 2018).

Nevertheless, notwithstanding these initiatives, pupils' academic performance under numerous government funded secondary educational institutions across Mbale City remains a concern. Reports from the Mbale District Local Government indicate a decrease in learners' academic performances under national examinations, with the proportion of students passing in Division I and II dropping from 61.2% in 2018 to 54.8% in 2022 (Mbale District Local Government, 2023). This decline has been associated with challenges such as poor subject mastery, inadequate development of cognitive skills, and irregular school attendance among students. Although several factors may contribute to poor academic achievement, the adequacy and quality of physical infrastructural facilities in schools remain an important factor that may influence learning outcomes. While previous studies have inspected the general impact of school surrounding on academic attainment in different contexts (Kipkemboi & Korir, 2019; Harinarayanan & Pazhanivelu, 2018), there is limited empirical evidence specifically inspecting an affiliation amid physical infrastructural facilities and learners' academic achievement under government funded universal secondary educational institutions across Mbale City.

If the issue of inadequate or poorly maintained school infrastructural facilities is not adequately investigated and addressed, it may continue to hinder effective teaching and learning processes, contribute to declining academic performance, increase student dropout rates, and limit students' opportunities for progression to higher levels of education and skilled employment. Therefore, this examination seeks to inspect an affiliation amid physical infrastructural facilities and students' academic achievement under designated government funded universal secondary educational instututions across Mbale City, Uganda.

Objectives of the Study

General Objective

The main objective is to examine the relationship between physical infrastructural facilities and learners' academic achievement in selected government-aided universal secondary schools in Mbale City, Uganda.

Specific Objectives

The study looked forward to addressing the following study specific objectives;

- i. To examine the relationship between classroom infrastructural facilities and students' academic achievement in selected government-aided universal secondary schools in Mbale City, Uganda.
- ii. To examine the relationship between laboratory & library infrastructural facilities and students' academic achievement in selected government-aided universal secondary schools in Mbale City, Uganda.
- iii. To examine the relationship between furniture & equipment infrastructural facilities and students' academic achievement in selected government-aided universal secondary schools in Mbale City, Uganda.

Study Hypotheses

The goals specifically were managed through these succeeding alternate hypotheses;

H_{a1}: Classroom infrastructural facilities have a significant relationship with students' academic achievement in selected government-aided universal secondary schools in Mbale City, Uganda.

H_{a2}: Laboratory & library infrastructural facilities have a significant relationship with students' academic achievement in selected government-aided universal secondary schools in Mbale City, Uganda.

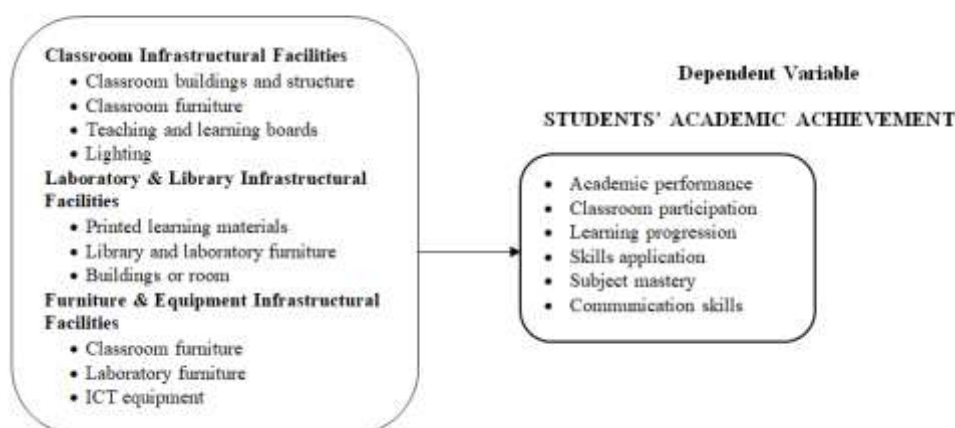
H_{a2}: Furniture & equipment infrastructural facilities have a significant relationship with students' academic achievement in selected government-aided universal secondary schools in Mbale City, Uganda.

Conceptual Framework

The conceptual structure on an affiliation amid Physical Infrastructural Facilities and Students' Academic Achievement.

Independent Variable

PHYSICAL INFRASTRUCTURAL FACILITIES



Source: Adopted from Kipkemboi and Korir (2019)

The conceptual framework shows an association between physical infrastructural facilities and students' academic achievement. Physical infrastructural facilities were imagined in form of classrooms' infrastructural facilities, laboratory & library, and furniture & equipment infrastructural facilities, whilst learners' academic attainment was envisioned in form of communication skills, subject expertise, cognitive skills application, learning progression, classroom participation, and academic performance. Hence, the above conceptual structure was built on the preposition that physical infrastructural facilities influence an improvement in students' academic achievement.

LITERATURE REVIEW

Physical Infrastructural Facilities and Students' Academic Achievement

Physical infrastructure creates the environment in which learning occurs. Adequate classrooms, libraries, laboratories, and proper seating arrangements help students focus and engage more effectively with lessons. Poorly ventilated, overcrowded, or noisy classrooms, on the other hand increase distractions, reduce concentration, and negatively affect learning outcomes. Therefore, the condition and adequacy of school infrastructural facilities like lighting, ventilation, and classroom size, are strongly correlated with students' academic achievement (Rafik, 2021).

As stated by Podiya, Navaneetham and Bhola (2025), specialized infrastructure such as science laboratories, computer labs, and libraries provide learners with access to practical experiences, hands-on learning, and self-directed study. These facilities help students internalize complex concepts, develop critical thinking, and improve problem solving capabilities, which all make a contribution towards high academic attainment.

Adequate physical infrastructure and facilities including clean, water, sanitation facilities, and hygienic classrooms directly impact students' health. Poor sanitation can increase absenteeism due to illness, while comfortable, safe classrooms reduce fatigue and stress, allowing students to participate more fully in learning activities. Schools with adequate sanitation and clean water facilities experience better attendance rates, which correlate with improved academic performance (Hasbullah, Ahmad & Fakhrol, 2023). Additionally, the authors assert that teachers perform better in well-equipped, organized, and comfortable learning environments. Availability of proper infrastructure allows teachers to employ effective teaching methods, manage classrooms efficiently, and facilitate interactive lessons. This, in turn, positively influences students' academic conclusions (Hasbullah et al., 2023).

As stated by Harinarayanan and Pazhanivelu (2018), proper physical infrastructure can promote inclusive education. For instance, ramps, accessible toilets, and wide corridors enable students with disabilities to participate fully in schooling. Overcrowded or poorly designed facilities, however, marginalized certain groups, widening achievement gaps. Additionally, the authors assert that comfortable seating, proper lighting, and good ventilation reduce fatigue and distraction. Students can focus better, which improves retention and understanding of lessons. Well-maintained classrooms with adequate space, lighting, and ventilation positively correlate with higher student performance in different subjects (Harinarayanan & Pazhanivelu, 2018).

Classroom infrastructural facilities are the physical elements and resources within the classroom that support teaching and learning. These include seating and furniture, lighting and ventilation, as well as teaching aids and technology. These facilities provide the environment where students interact with teachers, learning materials, and peers (Amsalu & Sintayehu, 2024). Additionally, the author asserts that proper classroom infrastructure allows teachers to organize lessons efficiently, use teaching aids effectively, and implement active learning strategies. A poorly structured classroom limits instructional methods and reduces teacher effectiveness, negatively affecting students' academic attainment (Amsalu & Sintayehu, 2024). As stated by Kassab, Rathan, Taylor and Hamdy (2024), classrooms with enough space and appropriate layout encourage group work, peer discussions, and hands-on activities. This active learning enhances Critical thinking and solving problems abilities are crucial for academic achievement. A well-structured learning environment with adequate infrastructures reduces disruptive actions and encourages concentration, allowing instructors to provide efficient training which resultantly influencing students' academic achievement.

Physical infrastructures like laboratory facilities allow learners to apply theoretical knowledge through experiments and practical demonstrations. This hands-on experience improves comprehension of complex concepts and fosters problem-solving skills. Laboratory activities also encourage learners to observe, hypothesize, test, and analyze results, promoting higher-order thinking skills that directly enhance students' academic attainment (Edgerton & McKechnie, 2022). More so, Rafik (2021) presumed that practical experiments make instruction more interesting, which increases motivation of learners besides reduces absenteeism, leading to better learning outcomes. Access to well-equipped science laboratories positively correlates with higher performance and academic achievement.

Proper physical infrastructures like desks and chairs allow learners to sit comfortably, reducing fatigue and improving concentration during lessons. Poor seating arrangements can lead to discomfort, distraction, and disengagement, negatively affecting performance. Adequate seating and furniture contribute significantly to student comfort and concentration, which correlates positively with students' academic achievement (Budiarti & Solehudin, 2024). The authors also assert that when furniture and equipment are adequate, students are less likely to be displaced during lessons, which reduces classroom disruptions. Reduce disruptions and a comfortable environment contribute to better attendance and consistent learning, which positively impacts students' academic achievement (Budiarti & Solehudin, 2024).

METHODOLOGY

Research Design

A research design correlation using quantifiable approaches served as the study's compass. In a specific study population, a correlational research methodology evaluates relationships between variables without establishing causality (Kassu, 2019). As a result, the researcher was able to ascertain whether physical infrastructure facilities and students' academic success are related, as well as the strength and direction of that link, thanks to this research methodology. The quantitative approach made it simpler to link, replicate, and assess results by allowing the investigator to measure and assess factors numerically.

Target Population and Sample Size

This examination encompassed a focal point populace of state funded universal secondary educational institutions across Mbale City, Uganda. However, putting in consideration, the investigator focused on two government-funded universal secondary educational institutions due to the time problem with a population size of 57 individuals (head teachers and teachers) from which a sample was selected (Mbale District District Local Government, 2023). The Sloven's formula was utilized to assess the sample size given as;

$$n = \frac{N}{1 + Ne^2}$$

Where, n = required sample size for the study, N = target population size, and e = permissible error (0.05).

$$n = \frac{57}{1 + 57(0.05)^2}$$

$$n = 50 \text{ individuals}$$

A model of 50 individuals (head teachers and teachers) was chosen from the chosen Mbale City schools to supply mathematical information which was utilized to explain this examination's goals.

Sampling Procedure

Towards choosing study participants, an investigator used convenience sampling as well as basic random selection. Convenience sampling, which was used to choose head teachers, involves the researcher selecting people who were undoubtedly accessible, ongoing, and prepared to partake in this examination. Basic random sampling had to be utilized to designate educators to take part under this examination based on the sample

frame or list that contained all teachers' names asked for from the different school administration body. Every member of a population has a comparable likelihood of getting chosen for the sample with simple random sampling, and the selection process is completely random (Elfil & Negida, 2017).

Data Collection Methods

Questionnaire Survey Method

The systematic series of transcribed questions is used by an investigator to assemble statistics from a group of respondents using a questionnaire survey approach (Mathiyazhagan, 2018). The questionnaire inquiries approach enables an investigator to assemble statistics utilizing closed end inquiries whereby statistics may be considerably examined to uncover trends, inter-correlations, and patterns. As a result, in the short amount of time available, this approach aided an investigator to attain organized, trustworthy, and quantifiable statistics from participants regarding this study's components.

Data Collection Instruments

Structured Questionnaire

A structured questionnaire could be a technique for gathering statistics from respondents that uses closed-ended queries to ensure consistency in responses, making data comparison and analysis easier (Acheung, 2019). As a result, To gather statistical numerical information from head teachers and teachers chosen from the different schools, the study employed structured questionnaires. In order to ensure consistency in responses throughout the examination, standardized questionnaires were employed, which improved the organization and quantifiability of data collection and facilitated comparison and analysis.

Validity and Reliability

The validation of the examination tools was guaranteed utilizing expert judgment by the help of a research professional. Validity of the instrument was measured using a Content Validity Index (CVI) given by;

$$CVI = \frac{\text{no of items declared valid}}{\text{total no of items}}$$

A Content Validity Index of 0.7 and above indicates the contents of the instrument are valid and therefore instrument is valid to be used in the study (Amin, 2005).

$$CVI = \frac{21}{26}$$

$$CVI = 0.808$$

The CVI value of 0.808 above 0.7 as recommended by Amin (2005) indicates that the questionnaires were valid for data collection.

Additionally, with respect to data, a Cronbach Alpha coefficient test was employed to inspect the study equipment' dependability. that was assembled from a pilot examination managed in one government aided universal secondary school in Mbale City, Uganda. As stated by Amin (2005) Reliability and more internal consistency of the questionnaire's questions are indicated by 0.7 or high Cronbach Alpha coefficient value.

Table 3.1: Reliability Statistics

Cronbach's Alpha	No. of Items
.844	21

Source: Field data (2026)

The Cronbach's Alpha coefficient value of 0.844 above 0.7 as recommended by Amin (2005) indicates that the questionnaires were reliable for data collection.

Data Analysis

The study examined the quantitative main data collected using both descriptive and correlational analysis approaches. Descriptive analysis was applied for assessing patterns, general trends, and the distributions in the responders' population information that was expressed in an comprehensible way utilizing frequency and percentage in order to create an orderly and transparent overview of statistics. To inspect an affiliation amid physical infrastructural facilities and students' academic attainment, the direction, size, and a 0.01 level of significance of the affiliation amid two variables were evaluated using Spearman's rank correlation analysis since a Likert scale of five was utilized to anticulate the factors. Whenever the statistics is numeral or not regularly disbursed, Spearman's Rank Correlation is the best method for assessing the affiliation amid 2 factors (Jerrold, 2016).

Ethical Consideration

Before beginning this examination, an examiner attained an introduction letter from the university in order to obtain permission from multiple schools' administrations to conduct the survey there.

People were allowed to leave the examination at any moment, and the researcher ensured that participation was entirely voluntary, free from coercion or improper influence.

Participants were also extensively told by the researcher on the purpose, nature, and importance of the examination.

Furthermore, the investigator ensured that what was collected was stored and reported in a way that guaranteed anonymity or confidentiality and protected people's private information.

Study Findings

Conclusions under this segment encompass the detailed findings on the profiling traits of the respondents and correlational findings on this examination goals.

Findings on the Demographic Compositions of the Respondents

Conclusions examined the demographical makeup for responders under designated government aided secondary educational institutions across Nangabo Sub County, Wakiso District and Tableau 1 presents the findings;

Table 1: Demographic Compositions of the Respondents

Category	Items	Frequency	Percentage
Gender	Male	31	62.0
	Female	19	38.0
	Total	50	100.0
Age	25-30 years	4	8.0
	31-35 years	9	18.0

	36-40 years	14	28.0
	Above 40 years	23	46.0
	Total	50	100.0
Education Level	Diploma	5	10.0
	Bachelors' degree	38	76.0
	Masters' degree	7	14.0
	Total	50	100.0
Marital Status	Married	37	74.0
	Single	13	26.0
	Total	50	100.0
Period of Work	1-5 years	8	16.0
	6-10 years	31	62.0
	Above 10 years	11	22.0
	Total	50	100.0

Source: Field data (2026)

Conclusions under Tableau 1 revealed that from 50 respondents, 31 (62.0%) of responders were men and 19 (38.0%) responders were women. This examination besides revealed that out of 50 respondents, 4 (8.0%) of respondents were 25-30 years, 9 (18.0%) of respondents were 31-35 years, 14 (28.0%) of respondents were 36-40 ages , and 23 (46.0%) of respondents were beyond 40 ages.

Additionally, this examination revealed that from 50 respondents, 5 (10.0%) responders possessed a diploma educational level , 38 (76.0%) responders possessed a bachelors' degree educational level , and 7 (14.0%) of responders possessed a masters' degree educational level . This examination also disclosed that from 50 responders, 37 (74.0%) of respondents were married and 13 (26.0%) responders weren't married. Further, this examination disclosed that from 50 responders, 8 (16.0%) responders had laboured for a span of 1-5 ages, 31 (62.0%) responders had laboured for a span of 6-10 ages, and 11 (22.0%) responders had laboured for a span of above 10 ages.

Findings on the Study Objectives

This subsection displays conclusions in line with specified examination goals.

Relationship between Classroom Infrastructural Facilities and Students' Academic Achievement in Selected Government-Aided Universal Secondary Schools in Mbale City, Uganda

This examination aimed towards examining the affiliation amid classroom infrastructural facilities and students' academic achievement under selected government funded universal secondary educational institutions across Mbale City, Uganda. An ffiliation was assessed utilizing the correlation analysis for Spearman Rank's and conclusions are presented under Tableau2.

Table 2: Correlation Analysis between Classroom Infrastructural Facilities and Students' Academic Achievement in Selected Government-Aided Universal Secondary Schools in Mbale City, Uganda

		Classroom Infrastructural Facilities	Students' Academic Achievement
Classroom Infrastructural Facilities	Spearman's Correlation Coefficient	1.000	.666**
	Sig. (2-tailed)	.	.000
	N	50	50
Students' Academic Achievement	Spearman's Correlation Coefficient	.666**	1.000
	Sig. (2-tailed)	.000	.
	N	50	50
**. Correlation is significant at the 0.01 level (2-tailed).			

Source: Field data (2026)

The examination disclosed an existence of a statistical constructive and strong considerable affiliation amid classroom infrastructural facilities and students' academic attainment under selected government funded universal secondary educational institutions across Mbale City, Uganda ($r = 0.666$, $P\text{-value} < 0.01$). This examination conclusions indicate that an advancement under classroom infrastructural facilities sturdily and considerably results towards an advancement under learners' academic attainment under designated government funded universal secondary educational institutions across Mbale City, Uganda.

Relationship between Laboratory & Library Infrastructural Facilities and Students' Academic Achievement in Selected Government-Aided Universal Secondary Schools in Mbale City, Uganda

This examination also aimed towards examining the affiliation amid laboratory & library infrastructural facilities and learners' academic achievement under selected government funded universal secondary educational institutions under Mbale City, Uganda. An affiliation was evaluated utilizing correlation analysis for Spearman Ranks and the conclusions are shown under Tableau 3.

Table 3: Correlation Analysis between Laboratory & Library Infrastructural Facilities and Students' Academic Achievement in Selected Government-Aided Universal Secondary Schools in Mbale City, Uganda

		Laboratory & Library Infrastructural Facilities	Students' Academic Achievement
Laboratory & Library Infrastructural Facilities	Spearman's Correlation Coefficient	1.000	.557**
	Sig. (2-tailed)	.	.000
	N	50	50
Students' Academic Achievement	Spearman's Correlation Coefficient	.557**	1.000
	Sig. (2-tailed)	.000	.
	N	50	50
**. Correlation is significant at the 0.01 level (2-tailed).			

Source: Field data (2026)

This examination disclosed an existence of statistical constructive and strong considerable affiliation amid laboratory & library infrastructural facilities and learners' academic attainment under designated government funded universal secondary educational institutions across Mbale City, Uganda ($r = .557$, $P\text{-value} < .01$). The examination conclusions indicate that an advancement within laboratory & library infrastructural facilities strongly and considerably results towards an improvement under learners' academic achievement under selected state funded universal secondary educational institutions across Mbale City, Uganda.

Relationship between Furniture & Equipment Infrastructural Facilities and Students' Academic Achievement in Selected Government-Aided Universal Secondary Schools in Mbale City, Uganda

This examination further aimed towards examining the affiliation amid furniture & equipment infrastructural facilities and learners' academic attainment under designated government funded universal secondary educational institutions across Mbale City, Uganda. The affiliation was scrutinized utilizing the correlation analysis for Spearman Ranks and conclusions are presented under Tableau 4.

Table 4: Correlation Analysis between Furniture & Equipment Infrastructural Facilities and Students' Academic Achievement in Selected Government-Aided Universal Secondary Schools in Mbale City, Uganda

		Furniture & Equipment Infrastructural Facilities	Students' Academic Achievement
Furniture & Equipment Infrastructural Facilities	Spearman's Correlation Coefficient	1.000	.555**
	Sig. (2-tailed)	.	.000
	N	50	50
Students' Academic Achievement	Spearman's Correlation Coefficient	.555**	1.000
	Sig. (2-tailed)	.000	.
	N	50	50
**. Correlation is significant at the 0.01 level (2-tailed).			

Source: Field data (2026)

This examination disclosed an existence of a statistical constructive and strong considerable affiliation amid furniture & equipment infrastructural facilities and learners' academic attainment under designated government funded universal secondary educational institutions across Mbale City, Uganda ($r = 0.555$, $P\text{-value} < 0.01$). The examination conclusions indicate that an advancement under furniture & equipment infrastructural facilities strongly and considerably results towards an advancement within scholars' academic attainment under designated government funded universal secondary educational institutions across Mbale City, Uganda.

CONCLUSION

The examination deduces that physical infrastructural facilities like classroom infrastructural facilities, laboratory & library infrastructural facilities, and furniture & equipment infrastructural facilities are positively and considerably affiliated with learners' academic achievement whereby an advancement in diverse physical infrastructural facilities resultantly results towards an advancement within students' academic attainment under designated government funded universal secondary educational institutions across Mbale City, Uganda.

RECOMMENDATIONS

The examination proposes that schools must provide adequate furniture and learning materials such as ergonomic desks and chairs, textbooks, writing materials, and teaching aids which improves comfort, posture, and ability to participate effectively, resultantly influencing an improvement in students' academic achievement under designated government funded universal secondary educational institutions across Mbale City, Uganda.

The examination also proposes that schools must provide adequate and well-designed classrooms as well as invest in libraries and learning resource centers as these enhance literacy, independent learning, better concentration, and academic performance, leading to an advancement in learners learning outcomes and academic achievement under selected government funded universal secondary educational institutions across Mbale City, Uganda.

REFERENCES

1. Acheung, A. K. (2019). *Structured Questionnaires*. Dordrecht: Springer. Retrieved from https://link.springer.com/referenceworkentry/10.1007%2F978-94-007-0753-5_2888
2. Amsalu, A. & Sintayehu, B. (2024). Analyzing the Contribution of School Climate to Academic Achievement Using Structural Equation Modeling. *SAGE Open*, 24(4), 117-121.
3. Budiarti, E. & Solehudin, H. (2024). The Influence of the Social Environment on the Academic Achievement of Early Children. *Journal of Early Childhood Education*, 1(1), 177-186.
4. Edgerton, E. & McKechnie, J. (2022). The Relationship Between Student's Perceptions of Their School Environment and Academic Achievement. *Journal on Environmental Psychology*, 13(1), 33-46.
5. Elfil, M. & Negida, A. (2017). Sampling Methods in Clinical Research: An Educational Review. *Journal of Academic Emergency Medicine*, 5(1), 52-69.
6. Harinarayanan, S. & Pazhanivelu, G. (2018). Impact of School Environment on Academic Achievement of Secondary School Students at Vellore Educational District. *International Journal of Education*, 7(1), 13-19.
7. Hasbullah, M. D., Ahmad, Y., & Fakhrul, A. A. K. (2023). Influence of the Social Environment on Development of Students' Morals and Characters: Future Issues and Challenges. *International Journal of Academic Research in Progressive Education and Development*, 12(2), 1245-1257.
8. Jerrold, H. (2016). *Encyclopida of Biostatistics: Spearman's Rank Correlation*. Berkshire: Open University Press.
9. Kang, X. & Wen-Jui, H. (2025). Exploring the Role of Ecological Systems and Intersectionality in Shaping the Academic Performance of Chinese Adolescents. *Children and Youth Services Review*, 172(1), 108-118.
10. Kassab, S. E., Rathan, R., Taylor, D. C. M., & Hamdy, H. (2024). The Impact of the Educational Environment on Student Engagement and Academic Performance in Health Professions Education. *BMC Medical Education*, 24(12), 127-142.
11. Kassu, J. S. (2019). *Research Design and Methodology*. London, United Kingdom: IntechOpen Limited.
12. Kipkemboi, F. & Korir, D. K. (2019). The Impact of School Environment and Peer Influences on Students' Academic Performance in Vihiga County, Kenya. *Journal of Education and Practice*, 5(11), 1-12.
13. Mathiyazhagan, T. (2018). *Survey Research Method*. New Delhi: National Institute of Family & Welfare.
14. Mbale District Local Government. (2023). *Mbale District Local Government Education Performance Report 2022*. Kampala, Uganda: Mbale District Local Government.
15. Ministry of Education and Sports. (2018). *Education System in Uganda: Policies and Regulations*. Kampala: Government of the Republic of Uganda.
16. Mukasa, S. (2018). Utilization of Physical Facilities and Academic Performance in Secondary Schools in Zombo District, Uganda. *Uganda Journal of Multidisciplinary and Professional Practice Studies*, 18(1), 124-146.

17. Podiya, K. J., Navaneetham, J., & Bhola, P. (2025). Influences of School Climate on Emotional Health and Academic Achievement of School-Going Adolescents in India: A Systematic Review. *BMC Public Health*, 25(54), 212-224.
18. Rafik, A. L. (2021). Influence of School Environment on Academic Performance of Students: A Systematic Review. *International Journal of Multidisciplinary Educational Research*, 10(6), 71-74.
19. Shahid, R., Ayesha, A., & Farrukh, K. (2022). Impact of School Environment on Students' Academic Achievements at the University Level. *VFAST Transactions on Education and Social Sciences*, 10(4), 19-30.
20. Singh, A. S. & Masuku, M. B. (2017). Sampling Techniques and Determination of Sample Size in Applied Statistics Research: An Overview. *International Journal of Economics, Commerce and Management*, 2(11), 12-22.
21. Zaatari, E. W. & Maalouf, I. (2022). How the Bronfenbrenner Bio-ecological System Theory Explains the Development of Students' Sense of Belonging to School? *Journal of Public Health Issues and Practices*, 12(4), 170-178.