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University Infrastructure Quality and Students Engagement at a Private University in Uganda

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Abstract: *This study assessed the influence of university infrastructure quality on students' engagement at the western branch of a private University in Bushenyi District, Uganda. Particularly, the study assessed the influence of lecture rooms infrastructure, university-level infrastructure and university utilities. Using the positivist approach, the study was guided by the correlational research design, collecting data using a questionnaire on a sample of 183 students. Descriptive analysis revealed that student engagement was high, and lecture rooms' infrastructure and university utilities good. However, the students rated university-level infrastructure as fair. Regression analysis showed that lecture rooms' infrastructure and university utilities were significant positive predictors of students' engagement. However, university-level infrastructure had a positive but insignificant influence on students' engagement. Thus, the quality of lecture rooms' infrastructure is imperative, university utilities are essential and improved university-level infrastructure is a requirement for enhancing students' engagement. Therefore, it was recommended that universities emphasise providing quality to classroom infrastructure, improve university-level infrastructure, and establish quality university utilities.*

Keywords: Lecture rooms infrastructure, Quality, Student Engagement, University Level Infrastructure, Utilities.

1. Introduction

The concept of students' engagement describes the degree of learners' involvement in a school's curricular and extracurricular activities, identification with and giving value to the goals of schooling (Wang & Hofkens, 2020). The concept explains behavioural, affective, cognitive and agentic characteristics of students (Montenegro, 2017). Behavioural engagement concerns matters regarding the learners' demeanour in class, involvement in activities with a link to the school, and attention to their learning activities (Nguyen, Cannata & Miller, 2018). Affective engagement is about the learners' attraction to schooling, their perceptions of school usefulness, and school-generated feelings (Yonezawa, Jones & Joselowsky, 2009). Cognitive engagement is the learners' thoughtful emersion in the learning process that involves the inner psychological feeling or their invisible characteristics that enhance the learning energy, comprehension, and grasping of the knowledge or skills put forward in their academic work (Nguyen et al., 2018). Agentic engagement is about the learner's useful personal contributions in the learning process as they share with teachers and fellow learners. Therefore, agentic engagement explains the learners' consistent, and persistent initiatives that contribute to the learning process (Montenegro, 2017).

It is imperative to note that the importance of student engagement has been recognised through the history of formal education. In the early years of the twentieth century, Dewey in 1933 called for active and engaged learning through inquiry (Fatou & Kubiszewski, 2018). In a seminal work on learners' involvement published in 1984, Alexander Astin indicated that student engagement described the level of physical and mental energy that learners devote to their learning (Moore & Woods, 2017). In the 1990s, learners' engagement was promoted by educationists as a tool to dissuade learners from misbehaving and being compliant. Different strategies to help make learners get engaged in their learning were suggested. Hence, learners' engagement became a classroom management strategy (Goodman, 2016). Since the 2000s, researchers and educators have given learners engagement great attention because of the understanding that it is a significant antecedent for numerous developmental and educational outcomes of a student (Lam et al., 2014). Student engagement is built on the desire to enhance the students' abilities to comprehend how to learn or become lifelong learners in a knowledge-oriented society (Taylor & Parsons, 2011).

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The concept of student engagement enjoys widespread popularity, especially in North America and the Australasia countries of Australia, New Zealand and some neighbouring islands. In these countries, student engagement is already firmly entrenched with large annual scale national surveys carried out (Trowler, 2010). However, in sub-Saharan Africa, policies and plans of governments rarely address factors that interact with student engagement (Nordstrum, 2015). Thus, in the context of countries in Sub Saharan Africa, student engagement remains a topic for further analysis. Studies suggest that school infrastructure factors, namely technology integration, library, lighting, purposeful design of the school and classrooms level infrastructure, relate to student engagement (Günüç & Kuzu, 2014; Kuh & Gonyea, 2015; Oliveras-Ortiz, Bouillion & Asbury, 2017; Yang, Badri, Rashedi, Almazroui, Qalyoubi & Nai, 2017). According to Cuesta, Glewwe and Krause (2016), these factors can be classified in terms of lecture rooms infrastructure, school level infrastructure and school utilities quality. While in Uganda institutions of higher learning such as Kampala International University (KIU), Kyambogo University (KYU), Makerere University (Mak) and Uganda Christian University (UCU) among others have made efforts to carry out infrastructure development (Kasozi, 2016; Mujuni, 2017; Ndyabahika, 2018; Tor & Jorun, 2017), there is lack of studies showing how infrastructure development has influenced student engagement. This attracted the attention of this study to examine how university infrastructure quality in terms of lecture rooms' level infrastructure, university level infrastructure and university utilities quality influenced students' engagement.

2. Review of Related Literature

This section presents the theory that underpinned this study and the review of related literature. The theory describes the linkage between infrastructure quality variables and student engagement, while the related literature shows the relationship between variables identifying gaps that were filled by this study.

2.1 Theoretical Review: The view of System Theory

The Systems Theory advanced by Von Bertalanffy in the 1920s (Drack & Pouvreau, 2015) was the basis for understanding the relationship between school infrastructure quality and students' engagement. The Systems Theory indicates that a system can be natural or physical such as university infrastructure, interconnected between various elements. The paramount unit of analysis is the whole system made up of many parts or structures (Mele, Pels & Polese, 2010) such as lecture rooms infrastructure, university-level infrastructure and utilities. Hence, the fundamental character of a vital phenomenon such as a university can be understood by understanding all parts of the phenomenon, including its infrastructure (Drack & Pouvreau, 2015). Therefore, in a university, the focus should be on the effects of the interrelationships of the different parts (Trochim, Cabrera, Milstein, Gallagher & Leischow, 2006), including the effect of the infrastructure. The focus should include looking at the structuring of and links between the parts and how they collaborate in an entity such as a university. The way the parts are organised and how they interact with each other determines the properties of that system and its effect (Chikere & Nwoka, 2015). Whereas the Systems Theory is a general theory not specifically focussed on schools infrastructure quality and its affects student engagement, it suggests the need to give attention to the system as a whole, including school infrastructure. Therefore, based on the Systems Theory, this study examined the influence of school infrastructure as an element of the system and how it is related to student engagement.

2.2 Lecture rooms infrastructure quality and Student Engagement

Different scholars (Aydoğan, Farran & Sağsöz, 2015; Castro, Guardino & Antia, 2017; Guardino & Antia, 2012; Günüç & Kuzu, 2014; Han, Kiatkawsin, Kim & Hong, 2018; Virtanen, Lerkkanen, Poikkeus & Kuorelahti, 2015; Yang et al., 2017) have tested the link between classrooms infrastructure and student engagement. For example, Aydoğan et al. (2015) revealed that the classroom was predictive of the learning engagement of children. Castro et al. (2017) established that engagement did not change while associated classroom variables, including emotional support, instructional support, and classroom organisation levels, increased over time. However, emotional support was the significant determinant of student engagement over time. Guardino and Antia (2012) reported that there was a relationship between the changes in the classroom

environment and student engagement. On ther part, Günüç and Kuzu (2014) revealed that the use of technology in class was an indispensable antecedent for student engagement. In addition, it was revealed that appropriate technology inclusion contributed significantly to student engagement and constituted an essential way of increasing student engagement.

Further, Han et al. (2018) found out that an ambient classroom environment highly increased the outcomes of cognitive and affective appraisal of the course. Virtanen et al. (2015) found differences in both classroom quality and learner behavioural engagement between the classrooms. Yang et al. (2017) established that students becoming affectivelly and mentally engaged with their school learning depended on the classrooms organisational environment. While the above studies had been carried out on classroom infrastructure and student engagement, there was a deficit in studies on the same in the context of Uganda. All the studies were done in educational instructions in other countries. Still, Castro et al. (2017) findings contradicted other scholars indicating that classroom infrastructure did not change engagement levels of students. This meant that there was no definite conclusion on the relationship between classroom infrastructure and student engagement requiring this study to further test whether lecture rooms infrastructure quality influences engagement of university students.

2.3 University level infrastructures quality and Student Engagement

A number of scholars (Chakacha, Iwu & Dakora, 2014; Gebre, Saroyan & Bracewell, 2014; Günüç & Kuzu, 2014; Kuh & Gonyea, 2015; Nepal & Maharjan, 2015; Smallhorn, Young, Hunter & da Silva, 2015; Schmidt, Rosenberg & Beymer, 2018) have related school infrastructure and student engagement. For instance, Chakacha et al. (2014) reported that a school that is well equipped is more operational and provides better learning prospects for learners' hence learners' engagement. According to Gebre et al. (2014), school technology strongly affected students' engagement. Günüç and Kuzu (2014) revealed that successful integration of technology in learning was highly associated with student engagement was a vital means of facilitating student engagement. Relatedly, Kuh and Gonyea (2015) found out that the library made students become academically engaged in tasks that were challenging and requiring higher-level thinking. Nepal and Maharjan (2015) reported that multiple factors such as lack of teaching materials, sports facilities, technology laboratories, library and different forms of teaching and learning media reduced learning outcomes.

The study by Smallhorn et al. (2015) revealed that redevelopment of the laboratories increased student satisfaction hence student engagement. Schmidt et al. (2018) found out that laboratory activities led to polarised engagement experiences by generally reducing pleasurable engagement with students emotionally engaged hence mentally and behaviorally engaged. The studies above suggested that scholars had significantly examined the influence of school-level infrastructure and student engagement, although contextual and empirical gaps existed. The contextual gaps were that the studies did not cover the situation in Uganda, while empirically some studies produced contradicting results. For example, Schmidt et al. (2018) indicated that laboratory activities provided polarised engagement experiences, yet all the other studies reported to the contrary, which suggested that the relationship between the variables was not universally confirmed hence a missing link that demanded further examination as to whether school level infrastructure quality influenced student engagement of university students.

2.4 Universities Utilities quality and Student Engagement

Scholars (e.g. Hansen, Nielsen, Georgieva & Schledermann, 2017; Hayat, 2017; Morrow & Kanakri, 2018; Nepal & Maharjan, 2015; Wadhwa, 2016) have examined the effect of university/ school utilities quality. For instance, Hansen et al. (2017) revealed that appropriate light in the school increased student concentration and promoted pro-social behaviour hence student engagement. Hayat (2017) reported that the presence of usable toilet facilities had a significant positive impact on enrolment, which implies student engagement. This relationship was stronger for schools in rural areas for female-only schools and for secondary schools. However, there was no evidence of a relationship between the availability of toilets and enrolment for boys-only schools. Morrow and Kanakri (2018) established that lighting appropriateness positively affected alertness levels of students, attitude, and learning vigour. Nepal and Maharjan (2015) indicated that lack of drinking

water and toilets in public schools contributed to low learning outcomes. Relatedly, Wadhwa (2016) reported that the presence of a usable toilet in a school and drinking water was positively related to test scores in English which suggested students' engagement. The literature above showed that significant effort had been made by scholars to relate school utility quality and student engagement. However, except for the study by Hayat (2017), none of the studies directly related utilities to students' engagement but related it to other outcomes such as students' scores and behaviour. Therefore, the relationship between utilities and students engagement has not been highly explored. This gap thus made it pertinent that this study in the context of a university in Uganda further tests whether university utilities quality influence student engagement.

2.5 Research Hypothesis

The following hypotheses were raised to respond to the above gaps identified from the literature, coupled with the researcher's observation:

H1: Lecture rooms infrastructure quality influences student engagement of university students.

H2: School level infrastructures quality influences student engagement of university students.

H3: University utilities quality influence student engagement.

3. Research Methods

Undergraduate students of Kampala International University Western Campus from the faculties of Education, School of Clinical Medicine, Pharmacy, Biomedical, ICT and school of nursing numbering 183 provided the study sample. The study adopted the correlational research design because of its strength to describe the existence of a relationship between the predictor and criterion variables precisely in a clear and easy way to understand. The design facilitated analysis of the relationship between infrastructure quality and student engagement. The study used the positivist approach to produce data for drawing statistical inferences. Scientific and ethical validity in terms of participant's informed consent, anonymity, confidentiality and privacy were given due attention.

The instrument was a self-administered questionnaire (SAQ) administered to undergraduate students. The questionnaire contained ordinal questions on the criterion and predictor variables, respectively. The criterion variable was student engagement covering affective, behavioural, cognitive (Lam et al., 2014) and agentic engagement (2013). The independent variable was infrastructure quality covering aspects that were lecture rooms infrastructure and university level infrastructure (Cuesta, Glewwe & Krause, 2016; Nepal & Maharjan, 2015) and university utilities (Cuesta, Glewwe & Krause, 2016; Wadhwa, 2016). The five-point Likert scale with code one (strongly disagree) as the lowest rating through code five (strongly agree) as the highest rating was used. Reliability was attained using Cronbach's alpha (α) as follow: affective engagement (α = 0.912), behavioural engagement (α = 829), cognitive engagement (α = 0.875) and agentic engagement (α = 0.858), lecture rooms' infrastructure (α = 0.878) university-level infrastructure (α = 0.901) and university utilities (α = 0.859). With all the Cronbach's alphas attained at above 0.7, which is the ideal benchmark (Souza, Alexandre, & Guirardello, 2017), the data collected was considered reliable.

The data collected were coded, entered into the computer using SPSS, and displayed using frequency tables for editing to remove errors. Since the study adopted the positivist approach, positivist methods of data analysis were used to analyse data. Specifically, data analysis was done at univariate, bivariate and multivariate. Data analysis at the univariate level involved the calculation of means. At the bivariate level, correlation analysis was carried out by relating the predictor (school infrastructure quality) variable with the criterion variable (student engagement). The criterion variable was regressed on the different infrastructure quality elements that are namely, lecture rooms infrastructure, university-level infrastructure, and university utilities at multivariate level.

4. Results

The results were presented in this section first at descriptive level and subsquently at inferential level basing on hypotheses.

4.1 Demographic Characteristics

The modal percentage of the students was of males (56.8%), aged 20-25 years (94.0%), from the faculty of education (42.6%), and third-year students (62.3%) as in Table 1.

Table 1: *Background Characteristics*

Item	Categories	Frequency	Percent
Gender	Male	104	56.8
	Female	79	43.2
	Total	183	100.0
Age Category	20-25 years	172	94.0
	Above 25 years	11	6.0
	Total	183	100.0
Faculty	Education	78	42.6
	SCM	24	13.1
	Pharmacy	23	12.6
	Biomedical	17	9.3
	ICT	17	9.3
	Nursing	24	13.1
	Total	183	100.0
Year of study	Year 1	26	14.2
	Year 2	27	14.8
	Year 3	114	62.3
	Year 4	16	8.7
	Total	183	100.0

4.2 Student engagement

Student engagement was studied as a multi-dimensional concept comprising of affective, behavioural, cognitive and agentic engagement. Table 1 presents means derived from the descriptive analysis of the data on the same.

Table 1: *Descriptive Results for Student engagement*

Affective Engagement (overall mean =3.95)	**Item means**
I am very interested in learning	4.18
I think what we are learning at is interesting	3.77
I like what I am learning at this university	3.84
I enjoy learning new things during lectures	4.05
Learning is interesting to me	4.21
I like my university	3.85
I am proud to be at this university	4.00
Most mornings, I look forward to going to the University	3.77
I am happy to be at this university	3.87
Behavioural Engagement (overall mean =3.86)	**Item means**
I try hard to perform well	4.26
In lectures, I work as hard as I can	4.15
When I am in lectures, I fully participate in lecture activities	4.10
I pay attention during lectures	4.26
When I am in lectures, my mind concentrates	4.21
If I have trouble understanding a problem, I go over it again and again until I understand it	4.10
When I run into a difficult study problem, I keep working at it until I think I have solved it	4.15
I am an active participant in university activities such as sports day	3.15
I volunteer to help with university activities such as sports day	3.05
I take an active role in extra-curricular activities in my university	3.21
Cognitive Engagement (overall mean =4.11)	**Item means**
When I study, I try to understand the material better by relating it to things I already know	3.97

When I study, I figure out how the information might be useful in the real world	4.15
When learning new information, I try to put the ideas in my own words	4.28
When I study, I try to connect what I am learning with my own experiences	4.10
I create my own examples to help me understand the important concepts taught	4.23
When studying my university work, I try to see how it fits together with other things I already know	3.97
When I learn new things, I often try to associate them with what I learnt in other lectures about the same or similar things	4.08
Agentic Engagement (Overall mean = 3.72)	**Item means**
I let my lecturers know what I need and want	3.48
I let my lecturers know what I am interested in	3.44
During lectures, I express my preferences and opinions	3.64
During lectures, I ask questions to help me learn	3.93
When I need something, I ask the lecturers about it	3.79
I adjust whatever we are learning so I can learn as much as possible	3.80
I try to make whatever we are learning as interesting as possible	3.97

Table 1 showed that students rated their student engagement as high (overall means for affective engagement = 3.95, behavioural engagement =3.86, cognitive engagement =4.11 and agentic engagement, overall mean = 3.72, all corresponding to agreed). Since all the means were close to code 4 denoting agreed on the five points Likert used, the results suggested that the students indicated that their engagement was high or good.

4.3 School Infrastructure Quality

School infrastructure quality was studied using three indicators: lecture rooms infrastructure, university-level infrastructure, and university utilities. Table 2 presents means derived from the descriptive analysis of the data on the same.

Table 2: *Descriptive Results for School Infrastructure Quality*

Lecture rooms infrastructure (overall mean = 3.58)	**Item means**
The desks in the lecture rooms enable me to write comfortably	3.51
The chairs in the lecture rooms are comfortable	3.40
The writing board in the lecture rooms is good, and it is easy to read what is written on it	3.61
The lecturer rooms have sufficient markers or chalk for lecturers to use to write on the boards	3.44
The roof of the lecture rooms is very good	3.72
The walls of the lecture rooms are very clean and clear	3.77
University level infrastructure (overall mean = 3.25)	**Item means**
Overall the University infrastructure is beautiful	3.62
The University library is spacious	3.22
The computers of the University are working	3.14
The University has various technologies such as television sets and projectors, among others used in teaching and learning	3.34
The University has a good playground	2.80
The University has enough lecture rooms for all lectures	3.25
In the University there are decent eating facilities affordable for students	3.07
The University has an assembly hall	3.57
University utilities (overall mean = 3.66)	**Item means**
The University is connected to sufficient electricity	3.80
The university has access to a source of water needed for different activities	3.61
The toilet facilities of the University are always clean	3.13
The toilets of the university have enough stances	3.36
There are separate toilets for males and females in the University	4.10
The University has a hospital that is accessible to students	3.98

Table 2 shows that students rated the different infrastructure variables variously by indicating that lecture rooms infrastructure (mean = 3.78) and university utilities (overall mean = 3.66) were good because the means were in the range of code four (agree). However, the students rated university

level infrastructure (mean = 3.25) as fair since the mean was in the range of code 3 denoting moderately agreed or average on the five points Likert used.

4.4 Correlation between University Infrastructure Quality and Students Engagement

To find out whether university infrastructure quality was linked to students' engagement, at the initial level, a correlation analysis was done. The results are displayed in Table 3.

Table 3: *Correlation between University Infrastructure Quality and Students Engagement*

	Student Engagement	Lecture rooms s Level Infrastructure	University level infrastructure	University Utilities
Student Engagement	1			
Lecture rooms Infrastructure	0.471** 0.000			
University level infrastructure	0.432** 0.000	0.562** 0.000	1	
University Utilities	0.489** 0.000	0.451** 0.000	0.541** 0.000	1

The correlation results above in Table 3 showed that all university infrastructure quality aspects namely, lecture rooms infrastructure ($r = 0.471$, $p = 0.000 < 0.05$), university level infrastructure ($r = 0.432$, $p = 0.000 < 0.05$) and university utilities ($r = 0.489$, $p = 0.000 < 0.05$) had a positive significant relationship with students engagement. Therefore, all the three hypotheses were supported.

4.5 Regression of University Infrastructure Quality and Students Engagement

To find out whether students engagement was influenced by university infrastructure quality in terms of lecture rooms', university level and university utility infrastructure, at confirmatory multiple regression analysis was done. The results are in Table 4.

Table 4*: Regression of Students Engagement on Infrastructure Quality*

University Infrastructure Quality	Standardised Coefficients Beta (β)	Significance (p)
Lecture rooms infrastructure	0.281	0.001
University level infrastructure	0.076	0.396
University utilities	0.322	0.000
$R^2 = 0.323$		
Adjusted $R^2 = 0.311$		
$F = 26.542$, $p = 0.000$		

The results in Table 4 show that infrastructure quality explained 32.3% of the variation in students engagement ($R^2 = 0.323$). This means that 67.7% was a result of university variables that this study did not consider. The regression model was significant ($F = 26.542$, $p = 0.000 < 0.05$). However, of the three infrastructure quality aspects, lecture rooms infrastructure ($\beta = 0.281$, $p = 0.001 < 0.05$) and university utilities ($\beta = 0.322$, $p = 0.001 < 0.05$) had a positive and significant influence students engagement. However, university level infrastructure ($\beta = 0.396$, $p = 0.076 > 0.05$) had a positive but insignificant influence on students engagement. The magnitudes of the respective betas (β) suggested that university utilities had a higher significant influence students' engagement.

5. Discussion

The findings revealed that the quality of lecture rooms infrastructure had a positive and a significant influence on students' engagement. This finding was consistent with the findings of previous scholasrs. For example, Aydoğan et al. (2015) revealed that the classroom was predictive of the learning engagement of children. Guardino and Antia (2012) reported that there was a relationship between the changes in the classroom environment and student engagement. Günüç and Kuzu (2014) indicated that appropriate technology inclusion contributed significantly to student engagement and constituted an essential way of increasing student engagement. Han et al. (2018) found out that an ambient classroom environment highly increased the outcomes of

cognitive and affective appraisal of the course. Virtanen et al. (2015) pointed out that there were differences in both classroom quality and learner behavioural engagement between the classrooms. Relatedly, Yang et al. (2017) established that how students became affective and mentally engaged with their school learning was dependent on the classroom organisational environment. With the finding of the study consistent with the findings of previous scholars, it can be deduced that the quality of lecture rooms infrastructure has a positive and a significant influence on students' engagement.

Contrary to the study hypothesis, the study revealed that university-level infrastructure had an insignificant influence on students' engagement. This finding concurred with the study by Schmidt et al. (2018), which found out that that laboratory activities led to polarised engagement experiences by generally reducing pleasurable engagement with students emotionally engaged. However, the finding was contradictory to the results of other scholars. For instance, Chakacha et al. (2014) reported that a school that is well equipped is more operational and provides better learning prospects for learners' hence learners' engagement. Gebre et al. (2014) established that school technology had a strong effect on students' engagement. Günüç and Kuzu (2014) revealed that successful integration of technology in learning was highly associated with student engagement was a vital means of facilitating student engagement. Relatedly, Kuh and Gonyea (2015) found out that the library made students become academically engaged in tasks that are challenging requiring higher-level thinking. In the converse but contrary to the finding of the study, Nepal and Maharjan (2015) reported that multiple factors such as lack of teaching material, sports facilities, technology laboratories, library and different forms of teaching and learning media reduced learning outcomes. Further, Smallhorn et al. (2015) revealed that redevelopment of the laboratories increased student satisfaction, increasing student engagement. With the finding contrary to the findings of previous scholars, it can be presumed that the lower level qulaity of university-level infrastructure reduced students engagement.

In agreement with the study hypothesis, the study revealed that university utilities influenced students' engagement confirming results of previous studies. For example, Hansen et al. (2017) revealed that appropriate light in the school increased student concentration and promoted pro-social behaviour hence student engagement. On his part, Hayat (2017) reported that the presence of usable toilet facilities had a significant positive impact on enrollment, implying student engagement. This relationship was stronger for schools in rural areas for female-only schools and for secondary schools. Morrow and Kanakri (2018) established that lighting appropriateness positively affected alertness levels of students, attitude, and learning vigour. In the converse, Nepal and Maharjan (2015) agreed that lack of drinking water and toilets in public schools contributed to low learning outcomes. Wadhwa (2016) reported that the presence of a usable toilet in a school and drinking water was positively related to test scores in English which suggested students' engagement. With the findings of the study confirming the finding of the study, it can be surmised that university utilities influence students' engagement.

6. Conclusion

The discussion above on lecture rooms' infrastructure quality and students' engagement led to the conclusion that lecture rooms infrastructure quality is imperative. Such classroom infrastructure includes the existence of desks in the lecture rooms that enable students to write comfortably, writing boards in the lecture rooms that are good and make it easy to read what is written on them, classrooms with good roofs and classrooms with walls that are very clean and clear. Improving university level infrastructure is a requirement to enhance students' engagement. The aspects that require improvement include spacious libraries, working computers, various technologies such as television sets and projectors among others, for use in teaching and learning. There is also a need for a good playground, enough lecture rooms s for all lectures and decent eating facilities affordable for students. It was concluded that university utilities are essential for enhancing students' engagement. Such facilities include sufficient electricity, access to a water source needed for different activities, separate toilets for males and females, and a hospital accessible to students. It is thus recommended that universities should give emphasis to providing quality to lecture rooms infrastructure, improve university-level infrastructure and quality university utilities should be established.

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