Optimization of teaching space potential: A Ghanaian tertiary institution educational leadership perspective

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ABSTRACT

This study examines educational leaderships' perceptions of utilisation of teaching space facilities at the University for Development Studies, Ghana. A qualitative case study design anchored in the interpretivist paradigm was employed. The population for the study consisted of 13 educational leaders who are directly involved in matters relating to teaching space facilities within the institution. A semi-structured interview guide was used for data collection, and thematic analysis was applied for data interpretation. The study revealed that punctuality, absenteeism, and time preferences of both students and lecturers, were identified as key influences on lecture facility usage. The study concluded that departmentalised timetabling and management-related issues such as inaccurate data for room allocation affect the efficient utilization of teaching space within a university context. The study recommended that centralized timetabling should be planned and provision of adequate seating capacities in the instructional rooms for efficient utilisation of teaching space facilities in the institution.

Keywords: Facilities, optimization, resources, space management, teaching space, utilisation.

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INTRODUCTION

Teaching facilities in institutions of higher learning are very important in enhancing the academic activities and experience of students. These include facilities like lecture halls, laboratories, libraries and other teaching and learning spaces which shape both the students' learning processes and educators' practices (Barrett et al., 2019; Kariippanon et al., 2018; Yakubu and Sowunmi, 2017). These spaces' availability, condition, and accessibility were reported to have a direct influence over students' total performances (Alghamdi, 2018). However, proper management of these teaching spaces is crucial in enhancing chances for education provisions and successes. The concept of utilizing lecture halls and laboratories involves controlling their accessibility, allocation and application for various programmes and courses (Abdullah et al., 2012; Valks et al., 2018). Similarly, Usman (2016) posited that efficiency in the

deployment of resources such as space for teaching capability is a major determinant of the success of tertiary institutions in achieving set academic goals. This connection highlights the significance of space optimization and resource distribution in addressing the educational needs of various learners. It is not solely about the availability of a room or other teaching space that can be used for instruction, but it is about the conditions necessary for instruction and learning to occur. This involves not only the management of these areas but also the appropriate equipment and making them easily accessible (Kolawole and Ogbiye, 2020). Immaculate and well-equipped facilities also enhance performance and overall satisfaction among students. Therefore, the management of these resources determines the capacity of an institution to achieve its mission and objectives (Alghamdi, 2018; Usman, 2016).

The effectiveness of teaching space utilization in tertiary institutions cannot be overemphasized, yet most institutions struggle with efficient ways of doing it. Some of these challenges include; The organizational timetable of classes and poor location and design of instructional rooms, limited avails within facilities, lack of flexibility within the provision of learning spaces, teaching approaches, and educational practices that limit the optimal utilisation of the teaching areas (Suleiman et al., 2021). Teaching space utilization cannot be an arbitrary affair but rather it needs to take into account the frequency of use, spatial distribution of activities, and strategic space allocation (Space Management Group (SMG), 2006; Abdullah et al., 2012; Jutaim et al., 2023). Optimization of the teaching spaces provides value to learners and instructors by directing resources in ways that meet academic needs (Adigeb et al., 2017; Barrett et al., 2019). Therefore, the aspect of teaching space management in improving academic facilities is of great importance.

This study is significant for educational leaders, policymakers, administrators, and lecturers at the University for Development Studies (UDS) and similar institutions since this current study attempt to establish a clear and comprehensive understanding of how teaching spaces are optimised. This insight would enable efficiency in the utilization of teaching spaces (Quansah, 2015; Jutaim et al., 2023). Earlier publications have primarily focused on the quantitative evaluations of teaching space utilization in tertiary institutions (Bosomtwe, 2010; Baidoo, 2011; Quansah, 2015; Jutaim et al., 2023). However, there is a paucity of information on educational leaders' perspectives regarding the qualitative exploration of the use of teaching space facilities in tertiary institutions in Ghana. This research seeks to fill this knowledge gap by presenting a qualitative approach to analyse the educational leaders' perception of the optimisation of teaching space in Ghanaian tertiary institutions.

LITERATURE REVIEW

The utilization of teaching facilities is influenced by a complex interplay of factors, including institutional policies, scheduling systems, academic program structures, fluctuations in student enrolment, preferences of students and lecturers regarding time slots, technological requirements, and the overall condition of the facilities (Turkson, 2006; Bosomtwe, 2010; Baidoo, 2011; Abdullah et al., 2012; Quansah, 2015; Salama, 2021; Jutaim et al., 2023; Jannah, 2023). Reports from organizations such as the Council for Educational Facility Planners, UNESCO, and the British Department of Education and Science have highlighted key aspects that impact the use of teaching spaces, including space allocation, timetabling, program structure, delivery methods, the nature of educational programs, and student enrolment patterns (Akinyemi and Gbenu, 2020). Guidelines from the National Audit Office

(NAO) and the State Council for Higher Education in Virginia (SCHEV) emphasize that management practices, user behaviour, and the physical characteristics of teaching spaces significantly affect utilization rates. Akinyemi and Gbenu (2020) confirm these findings, showing that the management of time, space, and resources plays a crucial role in utilization, as evidenced by prior research (NAO, 1996; Ahmadfauzi, 2000; SCHEV, 2004; SMG, 2006; Abdullah, 2012).

These factors are categorized as "3P factors": people, place and process. People refer to the behaviour of managers, lecturers, and students: place, to the physical state of teaching spaces, and process, to institutional policies guiding space management. Abdullah et al. (2012) also identified other influences on effective teaching space utilization, including strategic institutional goals, space management policies, and the adoption of sustainable management practices. Additional challenges include department-specific requirements, such as computer laboratories in information and communication technology departments, which must be equipped with specific software and hardware configurations, or health and medical departments, which require clinical simulation laboratories with specialized equipment for practical training, shortages in teaching and learning spaces, the absence of standardized timetabling systems, and the lack of trained personnel for space management. Furthermore, the preferences of lecturers and students for specific rooms, insufficient data on room capacities, and administrative inefficiencies also contribute to suboptimal space utilization. The Space Management Group (SMG), as cited by Alghamdi (2018), identified eight key factors that affect teaching space utilization: poor physical conditions, inadequate suitability for intended purposes, degraded environmental conditions, fragmented campus layouts, limited flexibility of specialized spaces and equipment, accessibility and safety concerns, availability of audiovisual equipment, and mismatches between projected and actual usage. Additionally, changing teaching and learning methods, as well as the adaptability of buildings to meet modern educational needs, further complicate effective space utilization.

Timetabling has emerged as a key factor in space utilization. Studies by Abdullah et al. (2012) and Quansah (2015) revealed that departmentalized timetabling, where specific departments are allocated certain rooms and time slots, negatively affects space efficiency. This practice often results in wasted time and space, leading to lower overall utilization rates (Akinyemi and Gbenu, 2020). Quansah (2015) identified departmental timetabling as inefficient, resulting in low frequency of use (time utilization rate), low space occupancy (space utilization rate), and the need for constructing new, costly teaching spaces. Critics of departmentalized timetabling argue that it restricts the flexible use of teaching spaces across departments, even when facilities are left unused due to cancellations or rescheduling, further lowering utilization rates.

Another critical factor affecting space utilization is the practice of holding lectures in unapproved or unassigned spaces. Quansah (2015) noted that when lectures take place outside their designated rooms, assigned spaces remain underutilized. This practice can also cause scheduling conflicts, disrupting the timetable and reducing the number of lectures that can be accommodated, further lowering space utilization. Off-campus activities such as field trips and practical exercises contribute to the underutilization of teaching spaces by leaving assigned lecture rooms vacant. The variety of academic programs offered by an institution also influences teaching space utilization. Baidoo (2011) observed that institutions offering a broader range of programs tend to achieve higher utilization rates. Bosomtwe (2010) similarly found that the availability, quality, and adequacy of teaching facilities, along with the diversity of programs, directly affect how frequently and effectively spaces are used. For instance, a large, well-equipped lecture hall that can accommodate multiple classes throughout the day can significantly improve utilization rates.

UNESCO, as cited in Akinyemi and Gbenu (2020), identifies several non-academic factors that impact the utilization of teaching spaces, including educational policies on funding, space provision, human resource management, student-to-lecturer ratios, and ergonomic standards. Soltaninejad et al. (2021) emphasized that ergonomic factors such as lighting, thermal comfort, acoustics, and furniture design significantly influence students' health or intellectual performance, and how effectively teaching spaces are used. Improving these aspects—such as ensuring proper lighting, regulating temperature, and optimizing acoustics—can enhance student attendance and engagement (Obeidat and Raed, 2012). A comfortable learning environment encourages student attendance and participation, which in turn leads to better utilization of teaching spaces. Conversely, poor environmental conditions, such as extreme temperatures or deteriorating infrastructure, can negatively impact the frequency and quality of space utilization, as they cause discomfort for both students and lecturers, reducing attendance and discouraging the consistent use of these spaces (Ssempebwa, 2011; Barrett et al., 2019).

Management factors, including institutional policies, space allocation guidelines, scheduling practices, and maintenance decisions, also play a crucial role in the efficient utilization of teaching facilities (Abdullah, 2012; Mohd Ali et al., 2015; Akinyemi and Gbenu, 2020). Senior management decisions on student intake and space allocation are particularly influential. For example, increasing student enrolment without expansion of teaching spaces can lead to overcrowding, while reducing enrolment without optimizing space allocation can result in underutilization. Middle management, including faculty heads and program coordinators, can also impact space utilization by creating more flexible timetables and ensuring that room allocations match class sizes. Effective

management practices can optimize teaching space usage and enhance learning outcomes (Bosomtwe, 2010; Baidoo, 2011; Quansah, 2015).

User behaviour also plays a significant role in the utilization of teaching spaces. The number of students and lecturers using the facilities, along with their preferences and behavioural patterns, directly influence space utilization rates. For example, misalignment between class size and room capacity can lead to either underutilization or overcrowding. Additionally, preferences for specific teaching spaces or time slots can create inefficiencies. Research by bin Abdul-Rahman (2009), Akinyemi, and Gbenu (2020) suggests that allowing lecturers and students to choose their preferred spaces and times may lead to suboptimal utilization rates. Lecturers' preference for morning lectures, for example, can leave afternoon and evening slots underutilized (Bosomtwe, 2010; Baidoo, 2011). Student attendance and registration patterns should also be considered when planning space allocation, as they can help ensure a better match between room capacities and actual needs (Akinyemi and Gbenu, 2020).

METHOD

The study employed a case study design rooted in the interpretivist paradigm, chosen for its ability to deeply explore subjective perceptions and experiences of individuals regarding a phenomenon (Flyvbjerg, 2011). This design allowed the researchers to investigate the experiences and perceptions of educational leaders concerning factors influencing the utilization of teaching spaces. The case study approach provided a robust framework for in-depth analysis, enhancing both the richness and validity of the qualitative research findings. A qualitative research approach was well-suited for this study, as it facilitated a deeper understanding of the factors affecting the efficient use of teaching spaces (Tracy, 2019). Through this method, the researchers were able to gather comprehensive information that could inform evidence-based strategies for optimizing the management of teaching spaces and improving educational outcomes.

A purposive sampling technique, specifically expert sampling, was employed to select participants for the study. This included two deans, seven department heads, and four faculty/school quality assurance officers, all of whom had held their positions for at least four academic years and were familiar with the trends in lecture room usage. These participants were selected to provide insights into the utilization of teaching spaces and effective management strategies at the University for Development Studies. Hennink and Kaiser (2022) suggest that qualitative studies typically reach data saturation with sample sizes ranging from 9 to 17 participants. Therefore, the sample size of 13 participants was deemed appropriate for this study. Permission was obtained from

the relevant authorities and participants, ensuring ethical compliance. Each participant provided informed consent by signing a consent form. Face-to-face interviews were conducted to collect the data, and permission was obtained to record the interviews using an audio recorder. This method facilitated accurate transcription of the discussions (Creswell, 2014). The interviews lasted between 30 and 50 minutes, and given the participants' busy schedules, the researchers conducted the interviews at times convenient for them.

The data were analysed using thematic analysis. After transcribing the interviews, the researchers familiarized themselves with the data by repeatedly reading and coding the transcripts to ensure accuracy and consistency. Themes were then identified from the codes, examined, and defined to generate the study's findings. Thematic analysis was chosen for its flexibility, accommodating the study's research objectives, sample size, and methodology (Clarke et al., 2016).

FINDINGS AND DISCUSSION

Research question: What factors affect the utilization of teaching space facilities at UDS?

The research question sought to investigate the factors that affect the utilization rates of general-purpose lecture rooms on the UDS-Tamale Campus. The data collected were coded manually and analysed thematically to answer the research question. The following themes emerged from the transcript and were subsequently grouped under four main thematic categories that evolved from the interview sessions and the research question of the study. The three main thematic categories and the six sub-themes are shown in Table 1.

Table 1. Thematic categories and sub-themes emerged from the interview.

Thematic categories	Sub-themes
Human factors	Lateness and absenteeism
	Behaviour and preferences
	Co-curricular activities
Timetable scheduling	Departmentalized timetabling
Management factors	Inaccurate data for room allocation
	Insufficient furniture and equipment

Human factors influencing time and space utilization rates

Thematic category 1 is the human factors that affect the utilization of the teaching space facilities at the Tamale campus. The sub-themes that emerged under thematic category 1 was: lateness and absenteeism, behaviour and preferences, and co-curricular activities.

Lateness and absenteeism

Lateness and absenteeism were themes voiced by the participants, as causing low utilization of teaching facilities as affirmed by the findings of the observation. Lateness and absenteeism, on the part of both students and lecturers, have a significant influence on the time and space utilization of the general-purpose lecture rooms. The participants noted that some lecturers did not adhere to their assigned lecture times on the timetable, especially during evening sessions, which affected the utilization rate. Thus, non-compliance with the timetable contributed to the overall low time utilization rate identified in the teaching space facilities. A participant mentioned that:

> *I believe that we can relate it to human factors, such as lateness and absenteeism on the part of both students and lecturers for lectures. This attitude of the space users would influence the time and space usage. For instance, late evening lecture schedules usually experience early closure and lecture cancellation. (Head of Department 1)*

Another participant added:

> *Many other lecturers have schedules, and people do not like afternoon and very late lectures. Also, when the sun is hot, people do not want to use the lecture halls so we are looking at the situation whereby both students and lecturers do not prefer afternoon and late evening lectures. From my observations, the late evening lectures are not effective and I think it is partly due to electricity problems and security issues so most of the lecture halls are underutilized during evening sessions. - (Quality Assurance Officer 2)*

The quotations from the participants revealed that both lecturers and students often absent or cancel lectures, particularly during evening and sometimes afternoon sessions especially when the rooms become uncomfortable due to the heat and lack of amenities such as fans, good lighting, and proper ventilation. This suggests the need for lecture rooms to have the necessary acoustics and lighting during all the sessions to facilitate attendance from morning to evening sessions. This aligns with the assertion that lecture rooms should be designed with features like comfortable seating, good lighting, and appropriate acoustics to promote attendance (Akinyemi et al., 2017). Similarly, Obeidat and Al-Share (2012) postulated that ergonomic factors such as lighting, thermal comfort, acoustics, and comfortable furniture are non-

academic elements that influence teaching space utilization rates.

Time preferences

Behaviours and preferences also emerged as a sub-theme for discussion. Participants highlighted behaviour of both students and lecturers in their time preferences as among the human factors that influence the utilization of teaching spaces. These can be seen from the following extracts:

In my view, one factor that significantly impacts the utilization of teaching space facilities is the punctuality of both lecturers and students. When lecturers arrive late or students enter after the lecture has started, it disrupts the effective use of teaching spaces. Such behaviours are clearly detrimental to maximizing the efficiency of our teaching spaces. As leaders, it is essential to emphasize the importance of timeliness and foster an environment where punctuality is both valued and expected. – (Dean 1)

The attitudes of lecturers and students toward lecture attendance play a critical role in how effectively teaching facilities are utilized. Frequent cancellations or poor attendance from students reflect a lack of commitment from both parties. It is vital to cultivate a culture of accountability and responsibility to ensure the efficient use of teaching spaces. This demands a concerted effort from both lecturers and students to consistently respect and adhere to their scheduled lecture times. – (Dean 2)

The time utilization rate is largely influenced by the actions of the lecturer. If a lecturer arrives late but still attempts to finish their slides, they end up encroaching on another lecturer's time. I believe that when lecturers do not adhere to their assigned lecture times, it negatively impacts the time utilization rate. – (Head of Department 6)

The main factor affecting the utilization of teaching space facilities is the attitude of both lecturers and students. When either party arrives late for a lecture or when a class is cancelled, it reflects their attitudes and contributes to lower time and space utilization rates for the teaching facilities. – (Head of Department 7)

A key issue is the disruptive behaviour of some students and lecturers. A lecture scheduled for 7:00 AM might be delayed by 30 minutes, and the lecturer may insist on completing the allotted hours without considering the next scheduled class. I believe such inactivity from lecturers contributes to

low space utilization rates. For instance, in afternoon and evening sessions, I've noticed that some lecture spaces remain empty. Additionally, some lecturers do not show up for their sessions, and lecture cancellations by both students and lecturers often occur without informing the space allocators. – (Quality Assurance Officer 1)

The quotations from these participants revealed that the utilization rate is contingent on students' and lecturers' behaviours, such as their attendance for lectures and the cancellation of lectures. Participants particularly emphasized that if a lecturer arrives late but aims to complete their slides, they end up encroaching on another lecturer's time. The participants reiterated that if lecturers do not adhere to their allocated lecture time, it could negatively affect the time utilization rates of the general-purpose lecture rooms. The data suggest that the low time utilization rates of the general-purpose lecture rooms were attributed to early lecture closures and lecture cancellations, particularly observed during the afternoon and evening sessions at the Tamale campus. This aligns with the findings of Bosomtwe (2010), Baidoo (2011), Abdullah et al. (2012), and Quansah (2015), which indicate that the behaviours of both lecturers and students towards lectures significantly influence the utilization rates of teaching space facilities.

The study additionally revealed that the preferences of lecturers and students for specific sessions especially during the afternoon and evening sessions significantly have an influence on the utilization rates of lecture spaces. This is evident from the transcription:

The preferences of both lecturers and students significantly influence the utilization of our teaching facilities. Lecturers and students often prefer to avoid scheduling classes in the afternoon or late evening for reasons known to them. I have observed that morning lectures tend to be much more effective, and as a result, afternoon and evening time slots experience noticeably lower utilization rates. – (Dean 2)

Many lecturers have specific schedules, and both students and staff generally prefer not to attend afternoon or late evening lectures. Additionally, the heat during the day discourages the use of lecture halls, so both students and lecturers tend to avoid these time slots. From my observations, late evening sessions are particularly underutilized, likely due to issues such as electricity problems and security concerns. – (Head of Department 5)

This quotation suggests that participants indicate lecturers have a preference for morning sessions and are not in favour of afternoon and late evening sessions for lectures. This is due to inherent inconveniences that may arise from

their busy daily routines and schedules. The preference for specific sessions among the majority of lecturers, especially in the early hours of the day, has a significant impact on the time utilization of teaching space facilities. This echoes the observations of Abdullah et al. (2012), Quansah (2012; 2015), and Turkson (2006), all emphasizing that lecturers prefer specific periods of the day, particularly in the morning hours.

Co-curricular activities

Co-curricular activities emerged as an influential human factor affecting the utilization rates of the general-purpose lecture spaces at the Tamale campus. Participants highlighted students' involvement in political activities, religious activities, association games, and out-of-class events as contributors to both time and space utilization of the teaching facilities. The Student's Representative Council (SRC) week celebrations and other co-curricular activities were identified as potential causes for the premature termination of lectures and vacant lecture rooms. This is visible in the interview extract:

> Student activities, such as political events, association games, and out-of-class sessions like physical education and field trips, impact time and space utilization. There are instances when I arrive for a lecture and find political groups holding campaigns in the same venue at the same time, particularly during SRC elections. This causes delays in instructional time. – (Quality Assurance Officer 4)

From the interview transcripts, participants expressed the influence of students' activities, including political activities and association games, as well as out-of-class events like physical education and field trips, on both time and space utilization rates of teaching space facilities at the Tamale campus. The participant indicated that political campaigns or meetings in lecture rooms and other activities of the students especially during SRC elections consequently affect the utilization rates of the teaching space facilities. This finding aligns with the conclusions drawn by Bosomtwe (2010) and Quansah (2015) that outside activities such as excursions, practical fieldwork, and various other activities outside the lecture rooms have a significant influence on space and time utilization rates of the teaching space facility.

Timetable scheduling influencing time and space utilization rates

Thematic category 2 is timetable scheduling and allocation issues that influence space and time utilization rates of teaching space facilities on the Tamale campus. The sub-

themes that emerged under this category include departmentalized timetabling, and clashes in timetable scheduling.

Departmentalized timetabling

Participants postulated that each faculty/school has its slots for accessing the lecture spaces. However, there are instances where there is no space for some of the faculties/schools that have large student numbers. This implies that the university is, to some extent, practicing departmentalized timetabling because when a particular faculty/school is not utilizing its slot, other faculties cannot schedule lectures in that space. This contributes to the low time and space utilization rates in some of the lecture spaces, as revealed in the study. This finding is visible in the following extracts:

> The university operates a faculty-based timetabling system, where some lecture spaces are allocated exclusively to certain departments. In my view, this influences utilization rates. If a block is reserved solely for one department and that department has activities outside the lecture rooms, such as during a departmental week, the halls remain vacant. In my opinion, these factors contribute to the low time and space utilization of lecture facilities. – (Head of Department 4)

From the participant's perspective, the interview highlighted issues related to the allocation of lecture spaces. Participants expressed the perception that the university's timetabling is departmentalized system, with certain lecture spaces exclusively designated for specific faculties/schools. This departmentalized approach could result in underutilization, especially when faculties/schools have activities outside lecture rooms, such as departmental weeks, leaving the halls vacant. These factors were revealed to affect the observed time and space utilization rates of the lecture spaces. This finding affirms the position that departmentalized or/and non-centralized timetabling influences the utilization rates of a teaching space facility (Quansah, 2015; Akinyemi and Gbenu, 2020).

Management factors influencing time and space utilization rates

Thematic category 3 is management factors. The sub-themes that emerged in this category include inaccurate data for room allocation, and insufficient furniture and equipment.

Inaccurate data for room allocation

Participants highlighted that inaccurate data on students'

course registrations hinders proper allocations and results in overcrowding. This is exemplified in the following extracts:

> *Room allocation is challenging because we sometimes do not receive accurate data on the number of students registered for certain courses. As a result, we occasionally allocate smaller lecture halls to larger classes, since the allocation is based on the available registration data. This often leads to overcrowded lecture halls, which affects space utilization rates. I believe that if accurate and timely student admission data were provided to examination officers, it would allow for better room allocations, avoiding both congestion and the underutilization of lecture spaces. – (Quality Assurance Officer 1)*

> *I am inclined to think that inaccurate data on newly admitted students also impacts space utilization. Allocations are made based on student registration numbers, the nature of courses, and the availability of lecturers. When a department has insufficient lecturers and relies on staff from other departments, it disrupts the timetable, as adjustments must be made to accommodate the schedule of the external lecturers. – (Head of Department 3)*

The quotation emphasizes challenges associated with room allocation and issues related to inaccurate data on the number of students registered for courses in the trimesters especially in the first trimester. One of the participants emphasized that the allocation process is governed by factors such as student registration and lecture room availability. Therefore, a lack of precise information on the number of students who have registered for certain courses occasionally leads to the assignment of smaller lecture halls to larger class sizes, resulting in congestion in the lecture rooms. The participant further expressed the desire for accurate and timely data on student's course registration history. This aligns with the suggestion that having complete and precise information would facilitate space planners' decisions, enabling well-informed allocations and mitigating issues of overcrowding that might cause discomfort for students in lecture rooms (Bosomtwe, 2010; Ssempebwa, 2011; Barrett et al., 2019; Akinyemi and Gbenu, 2020).

Participants further mentioned a significant concern regarding the accuracy of data on newly admitted students and its potential effect on space allocation issues. The continuous increase in the number of enrolled students has been observed to influence space utilization rates. The growing student numbers present practical challenges to the existing teaching spaces, including a mismatch between the increasing class sizes and the available lecture spaces. This finding correlates with the position of

numerous scholars, indicating that management factors such as students' enrolment and allocation of instructional time and teaching spaces are among the various elements affecting the utilization rate of teaching space facilities (NAO, 1996; Ahmadfauzi, 2000; SCHEV, 2004; SMG, 2006 Abdullah, 2012; Mohd Ali et al., 2015; Akinyemi and Gbenu, 2020).

Insufficient furniture and equipment

Participants also noted that the insufficient furniture and equipment in lecture rooms might contribute to lower utilization rates of general-purpose lecture rooms. They mentioned situations where students had to organize the lecture room before lectures, including tasks such as getting chairs from other rooms and setting up public address systems. These activities caused delays in the instructional period, resulting in inefficient use of instructional time. This finding is drawn from the transcribed verbatim:

> *As a leader, I understand that several factors contribute to the inefficient use of our teaching spaces. A major issue is the time students spend preparing for lectures, such as setting up projectors and sound systems. This preparation disrupts the scheduled use of the space and affects how efficiently it is utilized. To address this, we are committed to ensuring that all necessary equipment is pre-installed and ready for use in lecture halls. — (Dean 1)*

> *Sometimes, students have to arrange the room and set up equipment like projectors and sound systems, which takes time and impacts the efficient use of teaching spaces. I believe these facilities should be readily available and installed in the lecture halls. Management should also increase efforts to provide suitable furniture for teaching and learning. — (Quality Assurance Officer 3)*

> *Many lecture rooms are often overcrowded, making it difficult to teach. Students often have to rearrange chairs, which takes time before the class can properly settle and begin. This affects the efficiency of teaching space utilization. — (Head of Department 7)*

The interview voices revealed that students often need to arrange the room and set up equipment like projectors and public address systems, consuming valuable instructional time and influencing the utilization rates of teaching spaces. Therefore, it is imperative to have readily available and installed equipment and furniture in the lecture halls. This emphasizes the need for intense efforts by university management to provide suitable furniture for teaching and

learning purposes. The need for students to rearrange chairs and the subsequent time required for the class to settle down before the lecture begins were revealed to have contributed to a decrease in the utilization rate of teaching space facilities. This observation aligns with Baidoo's (2011) argument that addressing equipment and furniture requirements improves the efficiency of allocating and using instructional rooms.

CONCLUSION

The study concludes that human-related factors such as punctuality, absenteeism, behaviour, and preferences of students and lecturers, as well as the impact of co-curricular activities and departmental timetabling, are major factors influencing utilisation of teaching space. Additionally, management challenges, such as inaccurate room allocation data and insufficient furniture and equipment, further complicate space utilization. Addressing these factors comprehensively is crucial for improving the use of lecture spaces and enhancing the learning environment.

RECOMMENDATIONS

The study recommends that lecture rooms should be centrally managed, with a centralized timetable system that takes into account class sizes and seating capacities. This system would automate the process, considering factors such as class size, course requirements, and room capacity, thereby improving efficiency and accommodating diverse learner groups.

The study also recommends that university management implement a policy to discourage lecturers from selecting specific times or days for their classes. This should be accompanied by rigorous monitoring of lecture space usage to reduce the frequency of cancellations, late starts, and early dismissals.

The study further recommends that management adopt a computerized system or technology for real-time allocation and rescheduling of facilities. This approach would help maximize facility usage, particularly in cases of unforeseen circumstances, such as lecture cancellations. Finally, the study recommends that management provide essential teaching and learning resources, such as furniture, public address systems, better lighting, and additional fans, to ensure the efficient utilization of teaching spaces on the Tamale campus.

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