



Utilization of Teaching Space Facilities at Sunyani Polytechnic in Ghana

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This paper investigates how teaching space facilities were being utilized at Sunyani Polytechnic in the Brong Ahafo Region of Ghana. The essence was to ascertain information on the factors that militate against efficient utilization of teaching space facilities at Sunyani Polytechnic. Descriptive survey research design was adopted for the study. Lottery method of simple random sampling as well as purposive sampling were used in the selection of the sample size of 89 made up of 60 academic staff, 20 senior administrative staff and 9 technicians. Two sets of questionnaire and an interview guide were used for the data collection. The methods used in analyzing the data were frequencies, percentages and cumulative frequencies presented in tables. The key factors identified as constraints to efficient utilization of the teaching space facilities at the Polytechnic were departmentalized time tabling, inadequacy of computer laboratory and small size of instructional rooms. The major recommendations offered include the following: there should be centralized timetabling and computerization of the space allocation, provision of more general computer laboratories and provision of few large instructional rooms for very large class sizes.

Keywords: Utilization, General-purpose classroom, Specialized room, Departmentalization-time tabling, Tertiary and space allocation.



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1. Introduction

Education is regarded as an essential instrument through which human beings acquire skills and knowledge with a view of contributing to the development of the society. It is through education that the young ones are introduced to the belief and values of the society. Considering this significant role of education as a cornerstone for national development and as the 'life blood' of any nation, both the past and present governments of Ghana have embarked on extensive educational reforms at all levels (Primary, Secondary and Tertiary) in order to accelerate the development of the country. The massive educational reforms implemented in Ghana since 1987 and subsequent reforms in 2007 have greatly expanded enrolment at the lower echelons of the educational system (Basic and Secondary). This has resulted in high demand for tertiary education in the country. However, the capacity of the country to make tertiary education accessible to every qualified applicant is constrained by the seeming intractable problem of inadequate educational resources. Thus, the Polytechnics in the country are able to absorb only a fraction of qualified applicants due to the limited physical infrastructure and other educational facilities. This scenario is virtually similar in all the other tertiary institutions in the country. The effect is that large numbers of qualified people are not able to enter the tertiary institutions in Ghana. This state of affairs has made many prominent people in Ghana including heads of institutions, parents and individuals to have stated that the facilities in the tertiary institutions relative to the students' population are woefully inadequate. Hence, the only way to avert the situation is to increase the physical facilities and other educational resources of the institutions in the country.

This problem of inadequate teaching facilities at the tertiary institutions has prompted Government of Ghana, through the Ghana Education Trust Fund (GET fund), to improve and expand the academic infrastructure like lecture halls or classrooms, laboratories, workshops and other teaching and learning materials in the Polytechnics and other tertiary institutions. This improvement is to facilitate access to the Polytechnics and other tertiary institutions in the country. However, resources can be unnecessarily committed to providing more of educational resources (including teaching spaces) in tertiary institutions when the existing ones have not been put into maximum use. It has been suggested that one of the cost-effective ways to increase access to tertiary institutions is to promote efficiency in the utilization of the existing teaching spaces and other educational resources. According to [Kenny and Foster \(1983\)](#) the efficiency of utilization of teaching space facility is a cardinal factor of enrolment. [Owolabi \(1993\)](#) agreed with this statement by stating that if education services are to be expanded without a corresponding expansion in resources inputs, then available resources will have to be managed more efficiently.

To ensure that tertiary institutions in Ghana use their facilities with a reasonable degree of efficiency, the [Ministry of Education \(1988\)](#) has established minimum utilization standards for instructional facilities. These standards are important tools that will help the institutions to manage their facilities efficiently and give government and other stakeholders important information when making funding decisions about constructing new instructional buildings. Conforming to these standards may reduce the need to construct new buildings and allow scarce state resources to be devoted to other high priority needs in the country. However, since the inception of the Sunyani Technical Institute into the tertiary education system as a Polytechnic, there has not been any study to find out the utilization level of the teaching space facilities. This paper, therefore, delves into the factors that militate against efficient utilization of teaching space facilities at Sunyani Polytechnic and also suggests strategies to improve the utilization of the teaching space facilities at the polytechnic.

1.1. Objectives of the Study

The main objective of this study is to investigate the factors that influence the utilization of the teaching space facilities at Sunyani Polytechnic and to suggest strategies to improve the utilization of such facilities.

The specific objectives are to:

1. Find the factors that influence utilization of the existing teaching space at Sunyani Polytechnic
2. Suggest measures to improve utilization of the teaching space facilities at Sunyani Polytechnic.

1.2. Research Questions

The study addressed the research questions:

1. What factors influence the current state of utilization of teaching space facilities at Sunyani Polytechnic?
2. What measures can be used to improve utilization of the teaching space facilities at Sunyani Polytechnic?

1.3. Significance of the Study

The significance of this study is to contribution to the body of literature relating to facilities utilization in the tertiary educational institutions. Secondly, the findings from the study would be useful to educational administrators and planners in designing admission plans for the various departments of the Sunyani Polytechnic so as to forestall any inefficient utilization of instructional facilities. Further, the study could be used to indicate whether there is the need for new teaching spaces or not.

2. Literature Review

The Council for Educational Facility Planners ([Council for Education Facility Planners, 1976](#)), United Nations Educational Scientific and Cultural Organization ([UNESCO, 1984; UNESCO, 1985](#)) and [British Department of Education and Science \(BDES\) \(1992\)](#) listed timetabling and space allocation, educational structure, content and methods of delivery, educational programme being offered and student enrollment as major factors that influence teaching space utilization in institutions. UNESCO report went further to state that educational policies on funding, provision of infrastructure like teaching space, hiring and maintenance of human resources, norm on students to lecturer ratio and accepted ergonomic standards also influence space utilization but classified these as non-academic factors. [Rogers \(1993\)](#) argued that both academic and non-academic factors do influence Time and Space Utilization Rates, whose product is the Global Utilization Rates.

Rogers (1993) reports two main academic factors that affect time utilization rate of a teaching facility. They are timetabling and space allocation which can be done manually or with computers. The report described departmentalized and centralized timetabling as the main modes of timetabling. The allocation of teaching space facilities to year groups or programmes in a department or faculty is termed departmentalization by the report. Rogers lists students' patriotism, retention of permanent seats, storage of school materials and reduction of movement by teachers between classrooms in order to eradicate time waste during change over as some of the advantages of departmentalization. On the other hand, he states the disadvantages of the departmentalization of timetabling as boredom, inefficient use of space resources and the need for inexhaustible financial resource for the provision of teaching space facilities for any plan extension of further and higher education. He states that continued practice of departmentalized timetabling in an institution might lead to lower time utilization rate of the teaching space facilities. He explains that the reduced time utilization associated with departmentalized timetabling and space allocation result from the limited use of available space allocated to year groups or programmes in departments or faculties. Rogers (1993) therefore, recommends the use of centralized timetabling and the use of computer in order to ascertain optimum utilization of teaching space facilities.

Centralized timetabling as defined by the BDES (1992) is the pooling of all teaching space facilities suitable for use by a variety of course together and scheduling them for use by learning groups on hourly basis. Rogers (1993) states that when centralized time tabling is used for teaching space allocation, indicators such as class size, space need by each class, content of course, method of instruction delivery and contact hours between students and lecturers should be considered and care taken so that classes do not clash unnecessarily. He concluded by attributing the increased use of centralized timetabling in higher educational institution in Britain to its costs-effective use of teaching space and the accommodation of more students within the existing teaching space facilities, which increase their time utilization rates. Kenny and Foster (1983) support the idea of centralized timetabling as a measure of efficient use of time.

Owolabi (1998) explains that centralized timetabling is based on the principle of efficiency in the utilization of scarce resources. He suggests that the introduction of centralized timetabling in our higher educational institutions would result in efficiency in the utilization of teaching space facilities. According to Owolabi, efficiency is the optimal relation between inputs and outputs. An activity is performed efficiently if a given quantity of inputs is used to obtain maximum quantity of outputs.

Peat, Marwick and McIntock (1992) as cited in Apori (1997) studied how educational policies could be used to increase time utilization rate of teaching spaces in Britain. They discovered that educational policies dictate the extent of use of teaching space facilities in an educational institution, level of funding, number and types of programmes, permissible student enrolment, formal and informal use of teaching space facilities by the educational institutions owning them and others in a coordinated manner. They report among other things that higher educational institutions in Britain had plans to increase the time utilization rate of their teaching space facilities by restricting to themselves few teaching space facilities that they owned and hiring out their unused teaching space facilities to needy organizations to make use of them.

A survey carried out by United Nations Educational Scientific and Cultural Organization (UNESCO) (1985) listed condition of teaching spaces, ergonomics and the auxiliary spaces provided alongside with teaching space facilities in an institution as the non-academic factors that influence time utilization rate for teaching space facilities. The report also identified hot environment with extreme variation in temperature, rusts, decay from corrosion prevalent in coastal areas, oxidation and erosion which accelerate deterioration rate of building as elements which give rise to high rates of depreciation to teaching space facilities. The report indicated that teaching space facilities with high rate of depreciation should be maximally utilized to reduce to a minimum, the unit cost of education, which arises from maintenance cost. The optimum utilization of the teaching space facilities leads to increased time utilization rate.

According to occupational health experts reported of a reduced performance of sedentary, physical and mental tasks, as human physiological responses to heat stress outside the preferred zone of 20°C to 25°C. The report suggests the need to restrict working hours to periods of the day when workers (students) would not be subject to stress in the absence of environmental modifiers, which would lead to reduced time utilization rate, in respect of teaching space facilities.

The survey by UNESCO (1985) found out that the use of environmental modifiers and acoustically designed buildings and materials were prevalent in the economically developed countries, where the public subvention for education and other stakeholders of education could pay for acquisition of modifiers, energy and maintenance costs of gadgets used to provide the congenial environment for teaching and learning purposes. In the under- developed countries with low per capita income, UNESCO (1985) reports that most of the costs of tertiary education were borne by the small public funds which cannot meet the cost of providing and maintaining environmental modifiers. The report concluded that educational administrators in the developing countries were therefore compelled to schedule lectures mainly within the day time with adequate thermal, acoustic and illumination comfort to reduce the cost of providing or maintaining those things which led to low time utilization rates for teaching facilities.

With regard to acoustics, the UNESCO (1985) survey reports that acoustic influence time utilization rate by predetermining size and shape of a teaching space facility to ensure that sound does not hinder verbal communication. The report further stated that the size and shape of the teaching space in relation to the student flow and class size for various academic programmes determine the frequency of use of the space facility when other factors are held constant. Chanduri (1973) on his part found in his studies that the optimum permissible sound level in a teaching space environment without acoustic design and materials was 60 decibels. He recommended that a student in a discussion group, student in laboratory or lecture room should not be at a distance greater than seven metres (7m) from the teacher in the absence of audio-visual teaching aid.

On the use of furniture, it has been suggested that the teaching spaces should have furniture that can be moved around without difficulty. The CEFP (1976) states in its report that furniture provided in teaching spaces should be

movable to provide flexibility, so as to enable available teaching spaces to be put into multipurpose use. The report was of the view that putting teaching spaces into multipurpose use will increase their time utilization rate. UNESCO (1985) recommends that furniture for the teaching space should be a suitable chair, which would allow students to sit with their feet flat on the floor without any pressures on the underside of the thigh. The organization report concluded that such chairs will enable students to perform mental task better by sitting for long hours to have contact with their teacher and this will increase the time utilization rates of teaching space facilities. UNESCO (1985) corroborates Pratt (1980) the recommendation on the use of furniture by stating that seats and tables at which students work in classrooms often result in an angle between trunk and thigh degree producing pressure on the lower back and intestines (Scriven, 1975). School furniture, the report concludes should therefore be designed to produce healthier and more comfortable posture.

Regarding the kind of building, Ukeje (1992) found out in his studies that the educational programme influenced to a large extent, the kind of school buildings available. This calls for greater attention to the planning, construction and maintenance of school buildings. He further states that in constructing school buildings, certain educational specifications ought to be considered in the plan. These include the educational philosophy, nature of various activities to be provided, class size, aims and method of teaching and learning envisaged, how broad and how valid the curriculum will be, learning laboratories and libraries needed, the possibility of using the school for adult education or for other community service.

Pratt (1980) also posits that flexibility of the physical facilities is an important criterion in modern school design. Ideally, schools need to be designed so that they can subjectively be extended upwards or outwards and also that the interior spaces can be altered without major rebuilding. He concludes that almost any teaching environment can be modified with respect to five main elements, each of which is significant for learning. These are personal space, spatial organization, noise, illumination and aesthetic quality. Halstead (1974) however, states that the design of the physical environment of the learning task is often neglected yet science has established a close correlation between the amounts of work people do and where they do it. It stands to reason that a student sitting in an unbearably hot, stuffy room listening to a lecture on cryogenics would not learn as much as he would in a cool, comfortable space. Unfortunately, most college buildings have been planned to impress people from the outside, not necessarily to provide comfort of the users (p. 485).

2.1. Research Design

The objective of this study is to investigate the time utilization rate of the teaching space facilities at Sunyani Polytechnic. The researcher adopted descriptive survey approach, which is primarily concerned with looking at the phenomenon under consideration in order to determine the existing state of affairs. According to Best and Kahn (1998) the descriptive study describes and interprets what is. It is concerned with conditions or relationships that exist, opinions that are held, processes that are going on, effects that are evident, or trends that are developing. Fraenkel and Wallen (2000) re-echo that, obtaining answers from a large group of people to a set of carefully designed and administered questionnaire lies in the heart of survey research. Cohen and Manion (1989) on their part, reiterate that data in descriptive survey are usually collected through the use of self-completion or postal questionnaire interviews (structured or semi-structured), standardized tests of attainment or performance, attitude scales, and observations.

Like all forms of research designs, certain weaknesses are associated with descriptive survey design. Respondents can sometimes supply false and careless responses to some of the questionnaire items. This is especially true where the values or attitudes being measured are not approved by the society or where respondents feel that their private lives are delved into. Aware of this reality, the researcher tried to avoid questions that delved into the respondent's private life which do not have any bearing on the study.

Notwithstanding these limitations, the descriptive survey design is considered the most appropriate for investigating time utilization of teaching space facilities at Sunyani Polytechnic. This is because taking the purpose of this study, the research questions and the magnitude of the population into consideration, the researcher found it as the best design that could lead him to draw meaningful conclusions from the study in order to achieve the purpose of the study.

2.2. Population for the Study

The population for this study consisted of the academic staff, senior administrative personnel and technicians of Sunyani Polytechnic. There were at the time of the study, 138 academic staff, made up of 36 full-time lecturers, eight full-time assistant lecturers, seven principal instructors, 18 full-time senior instructors, 54 full-time instructors, five assistant instructors, four part-time lecturers, two part-time assistant lecturers and four part-time instructors. There were also 48 Administrative staff (including the Principal and the Vice Principal) and 16 technicians (Sunyani Polytechnic Planning Unit, 2006/2007). Hence, the total population size for this study was 202.

Ideally, to enhance generalization of the outcome of the study, the researcher should have used the entire target population in the Polytechnic. However, Best and Kahn (1998) posit that to undertake a research with a large population and arrive at generalization would be impracticable, if not impossible. Hence, the researcher deemed it appropriate to make the study more manageable and practicable by using unbiased sample of the population.

2.3. Sample and Sampling Procedure

In order to establish credibility and ensure that the study was broadly representative, the data on the use of teaching spaces were collected from a sample of the academic staff in the various departments who were primarily users of the teaching space facilities under study. The researcher deemed it necessary to have representatives from all the 10 departments as the original intention of using the total population was found to be too ambitious. A sample size of 60 out of the 138 academic staff, which forms 43% of the academic staff was therefore selected. The selection of this sample size was based on the suggestion of Nwana (1992) that "in selecting a sample size, if the population is

a few hundreds, 40% or more will do”. The method used was a lottery method of simple random sampling to select six academic staff from each of the 10 departments. In the case of the administrators, a total sample size of 20 senior administrative personnel, comprising the Principal, Vice Principal, Finance Officer, Planning Officer, Polytechnic Secretary, Estate Officer, Deans, timetable committee chairman as well as Heads of Department were chosen. They were purposively chosen to express their candid opinions and intentions regarding the factors that influence the time utilization of teaching space facilities at Sunyani Polytechnic. These administrators were those who are responsible for the day-to-day administration and maintenance of the teaching space facilities and therefore their views on utilization of the teaching space facilities at Sunyani Polytechnic could help put in place effective mechanisms for optimal utilization of the instructional facilities at Sunyani Polytechnic. Out of the 16 technicians, nine who are in direct contact with the specialized classrooms (laboratories, workshops) in their various departments were purposively sampled for interview in order to elicit information from them for the study. The interviewees came from the Electrical/Electronic Engineering, Building & Technology, Mechanical Engineering, Hotel, Catering & Institutional Management (HCIM), Painting & Decorating and Furniture & Joinery, Commercial and Liberal Studies departments. The data collected centred on the working conditions prevailing at the specialized rooms, level of utilization during practical lessons and what should be done for optimal utilization of the specialized rooms at the Sunyani Polytechnic. Altogether, 89 respondents made up of 60 academic staff, 20 senior administrators and nine technicians participated in the study.

2.4. Research Instruments

To achieve the purpose of this study, the researcher used an integrated approach of data collection in order to reap the advantage of each method. Data were gathered through primary and secondary sources. Three instruments were used to collect data for the study. The instruments used for the collection of data were adapted after a careful review of time utilization studies instruments. The first instrument was questionnaire modified and administered to academic staff who use the teaching space facilities for teaching purposes at Sunyani Polytechnic. The aim of this questionnaire was to solicit information from the academic staff on the number of hours they put in for teaching per course, class size, availability of teaching aids and possible factors that militate against or enhance the optimal use of the teaching spaces at Sunyani Polytechnic. The next instrument was also questionnaire, which was administered to the senior administrative staff who were purposely selected for the study. It was meant for the administrators to express their views on academic programme, educational administration and factors that may influence the time utilization of the teaching spaces and the prioritizing of the present and future educational facility needs of the Sunyani Polytechnic. Another instrument was an interview guide used in interviewing the nine technicians, who are closely associated with the specialized rooms (laboratories and workshops) at Sunyani Polytechnic. These technicians were interviewed to solicit information as regards time spent for preparation before practical lessons at the specialized rooms as well as time used to clean up after practical lessons. The interview conducted also helped the researcher to know the frequency of use of the laboratories and workshops in a week at Sunyani Polytechnic. The interview technique has the advantage of flexibility. The researcher had the chance to observe the subjects and clarify any misunderstanding. Personal contacts made the subjects to participate and provide the desired information. For instance, the researcher was able to probe into the condition of the specialized rooms. The interview guide was structured with advance-planned questions that were slightly modified and adapted.

2.5. Data Analysis Procedure

Quantitative descriptive method was used to analyse the data collected for the study. The responses to the various items in the two sets of questionnaire and the interview guide were coded, tabulated and analysed statistically with the help of a computer software programme called Statistics Package for Social Sciences. Since the study adopted a descriptive survey design, the results were mainly in frequencies, percentages and cumulative frequencies presented in Tables.

3. Results and Discussions

3.1. Factors that influence Time Utilization of the Teaching Space Facilities

The Researcher’s casual observation of the utilization of the instructional rooms were seen to be generally high during the morning sessions than that of the afternoon and evening sessions but generally low in some of the days, especially on Fridays. In order to comprehend this trend, the researcher tried to find out the view of academic staff, administrators and technicians for the factors that influence the level of utilization of the instructional rooms at Sunyani Polytechnic. The findings are presented in [Tables 1 to 9](#).

3.2. Factors that influence Time Utilization of the Specialized Rooms at Sunyani Polytechnic

One of the factors that influenced the time utilization of the specialized rooms is the time taken to prepare the specialized rooms for practical work and clean up after practical lessons. In order to understand this situation, the researcher tried to find out the number of hours technicians used to prepare the specialized rooms for practical lessons and hours used to clean up after practical lessons.

Table-1. Time Taken by Technicians to Prepare the Specialized Rooms for Practical lessons at Sunyani Polytechnic

Time	Frequency	Percentage %	Cum. Freq.%
Less than 1 hour	4	44.4	44.4
1 hour	3	33.3	77.7
2 hours	2	22.2	100
3 hours	-	-	-
Total	9	100	

Field survey, 2008

Table-2. Presents data on the time taken by technicians to clean up the specialized rooms after practical lessons.

Table-2. Time used by Technicians to clean up Specialized Rooms after Practical Lessons

Frequency	Time	Percentage	Cum. Freq %
2	Less than 1 hr	22.2	22.2
6	1 hours	66.7	88.9
1	2 hours	11.1	100
-	3 hours	-	-
9	Total	100	

Field survey, 2008

Tables 1 and 2 present information on the interview session conducted with technicians who have direct contact with the use of the specialized rooms, 77.7% (Table 1) expressed the view that they usually use one hour or less to prepare the specialized rooms for practical lessons. As many as 88.9% (Table 2) also expressed the opinion that they used the same time (one hour or less) to clean up the specialized rooms after practical lessons at Sunyani Polytechnic. The time used to prepare and clean up the specialized rooms contributed partly to the low time utilization of the laboratories. This factor support earlier reports by Kenny and Foster (1983) that an hour or more used for setting up a place for practical lessons and tidying up the place after practical work can be used to increase the hours (periods) used for practical lessons.

It can also be said that the low time utilization recorded for specialized rooms during the study might be partly due to the Building department workshop that was not in use in the second semester coupled with power outages". Sunyani Polytechnic has no working standing power and so anytime, there is power outage all practical lessons that are making use of the power must come to a halt. This implies that only few hours would be used for practical lessons during days of power outage at Sunyani Polytechnic campus.

Table-3. The Opinion of Academic and Administrative Staff about the Quality of General-Purpose Classroom at Sunyani Polytechnic

Responses	Frequency	%	Cum. Freq. %
Very good	5	6.3	6.3
Good	17	21.2	27.6
Satisfactory	42	52.5	80.1
Poor	13	16.2	96.4
Very poor	3	3.8	100
Total	80	100	

Source: Field survey, 2008

Table-4. Academic and Administrative Staff impression as to the Quality of Specialized Rooms

Responses	Frequency	%	Cum. Freq. %
Very good	3	3.8	3.8
Good	18	22.5	26.3
Satisfactory	34	42.5	68.8
Poor	19	23.8	92.5
Very poor	6	7.5	100
Total	80	100	

Causal observation of the instructional rooms shows overcrowdings during instructional period. This is in contrast with the popular opinion of the respondents that the quality of instructional rooms at the Institution was satisfactory. As shown in Table 3 and 4, as high as 52.5% of academic staff and administrators indicated that the general-purpose classrooms were satisfactory and 42.5% of the academic staff and administrators also indicated that the specialized rooms were satisfactory. The observation revealed a contrary scenario of overcrowding in the instructional rooms. However, majority of the respondents might not be aware of the poor nature of some of the instructional rooms. This is evidenced by the fact that only 20% and 31.3% of the respondents indicated that the general-purpose classrooms and specialized rooms respectively were poor and very poor. This supports Halstead (1974) who opined that most college buildings have been planned to impress people from the outside, not necessarily to provide comfort of the users (p. 485). He further states that, the design of the physical environment of the learning task is often neglected yet science has established a close correlation between the amounts of work people do and where they do it. It stands to reason that a student sitting in an unbearably hot, stuffy room listening to a lecture on cryogenics would not learn as much as he would in a cool, comfortable space.

Concerning the kind of educational facilities to be expanded for increased students' enrolment, Table 7 provides useful information to support the low time utilization rates obtained during the observation.

Table-5. Academic Staff and Administrators Ranking of Educational Facilities to be expanded for Increased Students' Enrolment at Sunyani Polytechnic

Facilities	Mean score	Rank order
Personnel (academic staff)	2.65	1
Teaching/learning materials/equipment	2.91	2
Workshops/laboratories	2.94	3
General-purpose classrooms	2.95	4
Halls of residence	3.18	5

Source: Field survey

As shown in Table 5, the facility with the lowest mean score is the first priority area to be considered for increase in students' intake. This makes the academic staff as the first priority area and general-purpose classrooms as the fourth priority area to be considered for increase in students' intake. General purpose classrooms were not a high priority area to be expanded for increase student intake because of the low time utilization in those rooms. This is in support of Midjaas (1982) opinion that planners of the 1980s and beyond should be more concerned with making efficient use of existing educational resources. This is because instructional rooms cannot be provided immediately when there is the need to increase student intake due to financial constraint (Russel and Doi, 1957; UNESCO, 1992). The view that Personnel (academic staff) are the first priority area to be considered for increase in students' intake can be inferred that there is inadequate academic staff at the Institution.

With regard to academic staff's view on preferred days for teaching in the week at Sunyani Polytechnic, Table 8 presents useful information to buttressed the low utilization recorded during the observation on Fridays.

Table-6. The views of Academic Staff on Preferred Days for Teaching at Sunyani Polytechnic

Days of week	Frequency	Percentage (%)	Cum. Frequency
Mondays	13	21.7	21.7
Tuesdays	22	36.7	58.4
Wednesdays	17	28.3	86.4
Thursdays	6	10.0	96.4
Fridays	2	3.3	100.0
Total	60	100	

Source: Field survey

As shown in Table 6, as many as 96.4% academic staff chose teaching from Mondays to Thursdays as their preferred days compared to teaching on Fridays. The remaining 3.3% of the academic staff chose Fridays as their preferred days. This implies that most academic staff do not prefer to teach on Fridays. This was because of the fact that excursions or educational trips, project work or long essay supervisions and other co-curriculum activities usually take place on Fridays. This explains the reason for low utilization recorded on Fridays during the observation. This study confirms earlier studies carried out in other Polytechnics by Akomaning (2001) on utilization of teaching space facilities at Takoradi Polytechnic and Turkson (2006) on utilization of teaching space facilities at Cape Coast Polytechnic that lecturers prefer to lecture from Mondays to Thursdays. Hence, in all the studies including the current study, utilization were low on Fridays.

Academic staff preferred time of teaching is another factor that influences utilization of the instructional rooms. Table 7 presents useful information on academic staffs' Preferred Time of Teaching at Sunyani Polytechnic which supports the high in the morning sessions and low utilization recorded in the evening session during the observation.

Table-7. Academic Staff's Preferred Time of Teaching at Sunyani Polytechnic

Time	Frequency	%	Cum. Freq. %
7:00am-9:00am	17	28.3	28.3
9:00am-12:00noon	33	55.0	83.3
12:00noon-3:00pm	7	11.7	95.0
3:00pm-6:00pm	2	3.3	98.3
6:00pm-8:00pm	1	1.7	100
Total	60	100	

Source: Field survey

According to the Polytechnic Principle, the non-HND programmes are supposed to be held after 2:00pm in the afternoon as cited in Akomaning (2001). Unfortunately, this is not strictly adhered to in Sunyani Polytechnic because some academic staff whose teaching times fall after 2:00pm rescheduled their meeting times with their students to the morning session creating clashes in the Instructional rooms. It is obvious, therefore, that academic staff's preference for teaching in the morning session contributed to the congestion or over-crowding in the morning sessions. Table 7 shows as high as 83.3% of the academic staff indicated their preference for lecturing in the morning sessions (7:00am-12:00non), and only 16.7% of the academic staff, indicated hours after 12:00noon (12:00noon-8:00pm) as their preferred time for teaching. The high percentage of respondents presented in Table 9 choosing morning session is in line with high rates for the morning sessions during the observation. This confirms earlier studies by Owolabi (1993) on space management in some tertiary educational institutions in Ghana as well as the Ministry of Education (1988) on utilization of instructional facilities that teachers preferred to teach in the morning sessions to teaching in the afternoon sessions. Also studies by Apori (1997); Akomaning (2001) and Turkson (2006) show that lecturers prefer to lecture in the mornings to afternoon and evening sessions. Hence, in all cases including the current study, utilization were higher in morning sessions than in the afternoon and the evening sessions.

Table-8. Problems Faced by Academic Staff in the use of the specialized rooms at Sunyani Polytechnic

Responses	Frequency	Percent (%)	Cum. Freq. %
Inadequate/obsolete equipment and materials	18	46.2	46.2
Inadequate qualified technicians	10	25.6	71.8
Inadequate / unsuitable furniture	2	5.1	76.9
Limited space	9	23.1	100
Total	39	100	

Table 8 presents the various problems faced by academic staff who use the specialized rooms at Sunyani Polytechnic. A high percentage of 46.2% of the respondents indicated inadequate or obsolete equipment /materials

as the main problem. Approximately 23% of the respondents also stated limited space as their major problem in the use of the specialized rooms. These might have contributed to the high utilization during the observation. Hence, it can be inferred that in a situation where modern equipment /materials and more space are provided the utilization level of the specialized rooms especially the laboratories would be improved.

With regard to academic staff's views on problems they face in the use of the instructional rooms which affects the utilization of the specialized room, Table 11 provides useful information to support the high utilization rates obtained during the observation at the general-purpose classrooms.

Table-9. Problems Faced by Academic Staff in the use of the General-Purpose Classrooms for Effective Teaching at Sunyani Polytechnic

Problems	Frequency	%	Cum. Freq. %
Inadequate/unsuitable furniture	11	18.3	18.3
Lack of public address system	9	15	33.3
Limited space	16	26.7	60.0
Poor lighting system	10	16.7	76.7
Poor ventilation	14	23.3	100
Total	60	100	

Table 9 presents the various challenges that academic staff face in the use of the general-purpose classrooms for effective teaching. Out of the 60 respondents 15% especially those teaching large number of students at a time stated lack of public address system as a problem. As much as 23.3% of the respondents indicated poor ventilation as the problem, they faced in the use of the general-purpose classrooms especially during the afternoon periods. This might partly contributes to the academic staff preference for teaching in the morning periods. As high as 26.7% of the respondents indicated limited space as a problem they faced in the use of the instructional rooms.

4. Findings

The low frequency of use of the teaching space facilities might be partly due to departmentalization of the teaching space facilities during the period of study and organization of classes under unapproved teaching spaces, excursions, outside practical work among others. The large class sizes as a result of inadequate academic staff had also contributed to the low time utilization rates in the instructional rooms.

There were generally low utilization rates for all the instructional rooms on Fridays. This was mainly because such days are mostly used by both academic staff and students for excursions, field trips, sports, writing of long essays/project and travelling among others.

5. Conclusions

Based on the findings of the study, a number of conclusions were made. One obvious conclusion is that the general-purpose classrooms were generally under-utilized contrary to the speculation by both students and the Polytechnic authority that the general-purpose classrooms are being overstretched. This means the Polytechnic agitation for more general-purpose classrooms cannot be justified. This does not however preclude the need to construct a few large general-purpose classrooms for very large classes to save teaching time and costs.

However, the laboratories were grossly over-utilized due to their small sizes especially, the general computer laboratory which can accommodate only 18 students at a time (according to the URC Report norm for laboratory) but the place was accessible to almost all the students at the Polytechnic. This means the agitations from the Polytechnic for more laboratories are justifiable.

Finally, it could also be concluded that the low utilization rates on Fridays and the low utilization rates during the evening hours of the day recorded in all the instructional rooms are clear evidence of inefficient use of the teaching space facilities at Sunyani Polytechnic.

6. Recommendations

In the case of the small sizes of instructional rooms which often times create over-crowding in the instructional rooms which led to over-utilized laboratories especially the general computer laboratory, it is recommended that more of such facilities should be provided to cater for the large number of students who use them.

It is recommended that few large classrooms should be provided to cater for the very large class sizes to ease congestions and also save teaching time and costs. However, very large classrooms could be partitioned instead of permanent walls for it to serve dual-purposes. The rooms could be utilized by small class sizes when partitioned and be used by large class sizes if the partition is removed.

Allocation of teaching spaces for classes should be based on class size, course requirements in respect of teaching materials, equipment and furniture needs. This will make the instructional rooms to be used more often by different groups of learners based on their needs. This means rigid definition of teaching facilities within the confines of individual departments should be avoided with the exception of the specialized rooms.

The low utilization on Fridays and during the evening sessions for the instructional rooms could be reduced by even spreading teaching load throughout days of the week and the periods of the day. This means academic staff must be implored to stick to the dictates of the timetable so as to avoid congestions in the mornings. There must be a policy to prevent academic staff from preferring certain specific times of the day and days of the week. Thus, academic staff should be made to strictly adhere to time and day allocated to them on the timetable.

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