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Original Paper

Factors Influencing the Utilization of Instructional Time in Technical Universities in Ghana: Implications for Adult Learning

Edison Dehley Pajibo, PhD[1*]

[1] Senior Research Fellow, Centre for Educational Policy Studies, University of Education, Winneba

[*] Edison Dehley Pajibo, PhD, Senior Research Fellow, Centre for Educational Policy Studies, University of Education, Winneba

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Abstract

The primary intent of this study was to investigate factors that influence the utilization of instructional time in public technical universities in Ghana. The study was essentially a mixed method where descriptive survey was used. The target population was made up of classroom lecturers and heads of departments in Technical Universities in Ghana. Out of 10 public technical universities, 5 were selected. A sample size of 168 comprising 154 lecturers and 7 Vice Chancellors and 7 heads of departments was used. Sample selection method used was the multi-stage sample; cluster random sampling, simple random sampling, and purposive sampling techniques were employed. Questionnaire and interview schedules were used to collect data from participants. Percentages and frequencies were used to analyze all the responses from the questionnaire. Interview data were analyzed thematically. The findings revealed the technical universities lacked Teaching Learning Materials (TLMs) to facilitate teaching and learning and this posed problem for instructional time. It was concluded that the level of time utilization efficiency on the part of universities, management and lecturers was pertinent in achieving efficient time utilization. It was recommended that lecturers in technical universities particularly should establish instructional time management routines in their classrooms that are in line with improving teaching and learning.

Keywords

instructional time, technical university, utilization of instructional time

1. Background Literature and Problem Context

It is generally accepted that the main purpose of education is to equip the individual with skills, attitudes, knowledge, and values so that he will be able to fit into the society in which he lives, thereby contributing to societal needs and aspirations. There can be little doubt that a nation can develop through the knowledge its citizens acquired through schooling, and Ghanaian technical universities cannot be left out in this equation. Education is a process of development that takes place in an individual. It is a process of learning to live a useful and acceptable life.

Currently, in Ghana, every effort is being made to educate young adults, men and women for the challenges of the 21st century. Present actions (various educational reforms and policies) of the government towards educational delivery can be seen from what had taken place since Ghana's Independence in 1957. Education at the university level cannot be properly delivered without the commensurate number of academic staff who generally are referred to as lecturers and research fellows. This brings to the fore the importance of lecturers to the educational delivery process in tertiary institutions. But much to be emphasized is the fact in order to ensure quality education, lecturers need to understand the subject enough to convey its essence to the students. Ayodele (2014) stresses that, besides knowing the subject area, it is very important the lecturer is well versed with planning and time utilization in the classroom to achieve the goal of teaching and learning. To this end, efficient utilization of classroom instructional time plays a significant role.

It is widely accepted that the inputs of education can be categorized into labour (teachers and non-teachers), capital (buildings, furniture, and equipment), raw materials (pupils), and other educational goods and services such as water, electricity, postal, and telephone services. The importance of teachers as inputs of education cannot be underestimated. Nathan (2012) supports this view by stating that all educational efforts depend on them lecturers/teachers.

Jones (2009) clarifies that in universities, lecturers as the greatest aid to learning and are some of the most important resources in the university system. The direct personal contact between students and lecturers remains the linchpin of the educational process in universities. It is therefore imperative that lecturers utilize efficiently available instructional time to produce the desired results. Implicitly, and as it relates to adult learning, the success of any programme of education for adults such as those in university settings will depend on the degree to which learners are made central to the learning process. This takes cognizance of the time made available to both learners and facilitators to interact and share experiences of facilitation. This stresses the significance and adequacy of instructional time utilization.

One important aspect of lecturers' work is managing instructional time. In keeping with the most current literature, Abillo (2012) establishes that the concept of instructional time utilization is gaining much attention owing to the enormous benefits it adds to students' academic achievements. In order to deliver what is in the curriculum effectively as it pertains to universities, certain mechanisms need to be put in place by lecturers' as regards the use of instructional time. Most lecturers feel that they have too much to do and do not enough time. They blame lack of time for their poor finances, unachieved goals,

stress, bad relationships, and not exercising their bodies. Whatever the merit of this argument, wise time utilization can help one find the time for what he/she desires to do. Time is an important variable in the quest to improve students' achievements. The propositions above are congruent with the argument of Nathan (2012) who suggests that increased level of instructional time, if used wisely, contributes positively to students' achievements and vice versa. Arguably, while expanded and improved use of instructional time will benefit all students, more instructional time is particularly beneficial for low performing and disadvantaged students. In Ghana, universities have established minimum standards for the amount of instructional time through the modular or course credit system. For example, in many institutions lecturers take between 15 to 18 credit hours a week.

Time is an aspect of a lecturer's job that deserves special attention. The length of time required to achieve organizational goal is a matter of considerable significance and an important indicator of effective teaching (Nathan, 2012). Time utilization can also be efficient and effective only if all the human and material resources are well managed.

A clearly attested fact by the literature (Abadzi, 2009) is that time utilization is the thread running through all aspects of academic life-organizing the day, organizing the classroom, deciding how long and how often to teach various subjects, assessing students' work, recording their progress, and keeping time-consuming behaviour problems to a minimum. Within this sort of scenario, lecturers are to engage in all these and many more to help in the running of the school. Efficient use of school time begins with effective classroom organization and management and vice versa. Implicitly, much of the essentials of classroom life involve time management. By implication, the adult learner in a university setting must have adequate time to put his knowledge and skills into practice. Because adult learners do not have a great deal of time, practical work is often essential and this requires a lot of instructional time. This proposition is especially applicable to technical universities where hands-on-practical work is the order of the day.

Theoretically, the study adopted Wright's (2002) Pickle Jar Theory which dilates order of priority in organizational life. It is a theory of efficient time management which likens organizational activities to rocks, pebbles and sand. It states that if one puts rocks in a Pickle Jar followed by pebbles and sand the rock will fit more into the jar than the pebbles and sand. The rock in the context of this study will be teaching or instructional activities which are the main business of the university, followed by pebbles (co-curricular activities) and sand (other activities such as meetings). Essentially, instructional time must be given the highest priority.

2. Setting and Context

What is known today as Technical Universities of Ghana were the Polytechnics that were upgraded to tertiary status in 1992 (PNDC Law 321). The upgrading of the polytechnics conferred on them the authority to award Higher National Diploma (HND) beginning 1992. Accordingly, the mission of the polytechnics is to provide tertiary education in the fields of manufacturing, commerce, science,

technology, applied social science, applied arts and other fields approved by the Ministry of Education. In the course of time the polytechnics by an Act of Parliament, Act 745 (in 2013) were upgraded to the status of technical universities. This gives them the mandate to offer Bachelor of Technology (B-Tech) degrees. Conceptually, the Technical Universities are to be skill and technologically—oriented. They are to apply strategic research with focus on solving practical problems (National Council for Tertiary Education, 2014, pp. 4-6).What needs stressing here is that in order for these technical universities to achieve their goals, lecturers must take instructional time very serious especially as it pertains to practical subjects.

Instructional time and how it is utilized has attracted much attention owing to how it influences teaching and learning in technical universities in Ghana. Some technical universities have reportedly had problems with teaching and learning of which several factors are responsible including mismanagement of instructional time. Reference to the work of Feneh (2011) reveals that, lecturers and their heads are acting contrary to instructional time policies of the National Council for Tertiary Education (NCTE), the body that regulates universities in Ghana.

Despite the opportunities available to adhere to instructional hours utilization in Ghanaian technical universities, educational researchers (Akanle, 2007; Anderson, 2005; Asiedu, 2012) have demonstrated that stating credit hours in university brochures alone will not significantly and automatically improve teaching and learning unless the instructional hours are well utilized. Even though, some researchers (Abadzi, 2009; Asiedu, 2012) have identified some internal and external college-related factors that have contributed to this state of affairs in certain parts of the country, the NCTE and significant others have expressed great concerns about the continuous poor quality of teaching and learning in technical universities (NCTE, 2014). A connection to adult learning regarding this development can be gleaned from the fact that in a university classroom in which there are adult learners, the facilitator often submerges his identity and identified with the learner-playing the role of a guide while at the same time learning. This requires adequate instructional hours since both learners and facilitators will share knowledge and experiences.

Making reference to activities that can influence instructional time or disrupt classes, Feneh (2011) and Nathan (2012) mentioned programmes either for school or national functions, statutory national public holidays, school holidays, lecturer absenteeism, lateness, sports and games. They added that it becomes clear that within sixteen weeks in university that encompasses a semester, less than ten weeks teaching actually takes place in the classroom. Adding his voice to this, Anderson (2005) reveals that a lot of teaching and learning time is also dissipated on other activities such as staff meetings and refresher courses. Acquah (2003) states that more work could be done in less time, if time is properly managed. This means, with the little time left after all these holidays, lecturers can effectively impart knowledge if they really plan and make very efficient use of the time available. Although the concerns expressed by the NCTE and educational stakeholders on the reported poor utilization of time have been given attention through time management workshops and seminars in technical universities for the efficient

utilization of time by lecturers, instructional time utilization is still problematic. In the light of the circumstances expressed, this study, therefore, investigates the factors influencing the efficient utilization of instructional time in selected public technical universities in Ghana and the implication it has for the adult learner.

3. Purpose and Objectives

The primary intent of this study was to investigate factors that influence the utilization of instructional time in selected public technical universities in Ghana. Specifically, the study sought to achieve the following;

1) In what ways have university-related factors inhibited the efficient utilization of instructional time in public technical universities in Ghana?

2) How have management-related factors hampered the efficient utilization of instructional time in public technical universities in Ghana?

3) How do lecturer-related factors impede the efficient utilization of instructional time in public technical universities in Ghana?

4. Anticipated Outcome of the Research

A study of this nature is significant for a number of reasons. Firstly, the findings of the study will help lecturers and technical university authorities identify some of the problems hindering the efficient utilization of instructional time in public technical universities in Ghana and the identification of such problems will be the first step towards finding solutions to them. Secondly, the results of the study will be useful as resource materials for policy makers in the NCTE who may want to research into performances of lecturers. Thirdly, the findings of the research will bring forth relevant suggestions and recommendations that may help heads of technical universities and the NCTE improve upon their supervisory skills and strategies for effective and efficient monitoring of teaching and time utilization.

5. Limitation of the Study

A key limitation to the study was in the area of data collection. The study was conducted at the time that the technical universities had been transiting from polytechnics to technical universities. Consequently, most of the respondents were apprehensive; harboring the fear that evaluation and monitoring data were being required of them. However, the researcher, himself a lecturer was able to alley their fears by indicating to them that the study was meant solely for academic purposes.

6. Delimitation

The research was delimited to only public technical universities that were upgraded from polytechnic level beginning 2013. Private technical universities were not included. Only lecturers who were actively involved in teaching (and not research faculty who were not teaching) were selected.

6.1 Definition of Terms

Head: In the context of this study the word head here means the vice chancellor of a technical university or one of the heads of a teaching department in the technical universities.

6.2 Research Design

The study was essentially a mixed method, utilizing descriptive survey design. The rationale for using this approach was based on Gay's (1987) argument that, it is wise to collect multiple sets of data using different research approaches in such a way that the resulting mixture or combination has complementary strengths and limited overlapping weaknesses. The research was largely qualitative as percentages were the only statistical tools used in the analysis.

6.3 Population and Sampling

The target population for this study was made up of technical university lecturers, interim vice chancellor and heads of departments. The population of the lecturers/academic staff at the time of the study was 1,600. Seven public technical universities were selected out of a total of 10. Out of these 7 universities, a sample size of 154 lecturers, 7 Vice Chancellors and 7 heads of departments were used. Hence, a total sample size of 168 was selected. This number forms 10.5% of the total population of academic staff in the technical universities. This number was considered adequate for this study because according to Gay (1987)), a sample size between 10 to 20% of a population in a survey research is considered appropriate.

The sample selection method used was the multi-stage sampling technique. This method was used because a combination of sampling techniques such as systematic and random sampling was used. Firstly, the ten regions in which the universities are located in Ghana were seen as a single unit. Then from a list provided by the NCTE, 7 universities were randomly selected. From the list of lecturers in the 7 universities systematic sampling technique was also used to select 154 lecturers with twenty-two lecturers from each university. Simple random sampling technique was used in selecting the universities because it gave all of the 10 universities equal chance of being selected for the study (Gay, 1987). From each of the universities, one University Vice Chancellor each was purposively selected. Relative to the heads of departments one head of departments was systematically selected from a list of heads of departments provided by the Human Resource Department of each of the seven Universities. For the lecturers, in terms of the systematic sampling technique, the researcher selected the name of a lecturer on a list after every three counts until he got the 154 lecturers.

6.4 Research Instruments

The data collection instruments for this study were structured questionnaire and a structured interview schedule. The questionnaire was used to collect data from the lecturers, while the interview schedule was used mainly for heads of the institutions. The research instrument was divided into three sections in accordance to the research questions, namely, university-related factors, management-related factors and lecturer-related factors.

6.5 Pre-Testing of Research Instruments

In order to ensure reliability of responses from the questionnaire for the lecturers, it was pre-tested in one public technical university which was not part of the study. This university had 77 lecturers and 15 heads of departments, and out of that, 15lecturers and five heads were used for the pre-test process. Reliability of the questionnaire was obtained by using the Cronbach Coefficient Alpha. The reliability coefficient was 0.73, which according to Gribich (2007)) was adequate given the fact that the upper acceptable limit was 0.99 and the lower unacceptable limit was 0.599 and below. Concerning the interview schedule, validity was ensured by asking clear questions, reducing bias and subjectivity during data collection. The instrument was also given to fellow researchers to examine the items in order to ensure that the responses were relevant for the study. The interviews were scheduled on 14th, 17th, 21st, 23rd, 28th, 30th March, and 4th May, 2018. These dates were agreed on by the participants for the interviews such that it would not conflict with their itinerary for the day. The interviews were recorded with a tape recorder. Participants were made fully aware that their responses would beaudio-taped. In conducting the interviews, English language was used.

6.6 Data Analysis Procedures

All items of the questionnaire were coded. Items in the form of Likert-type scale were rated between 1-3, with 3 being the highest and 1 being the lowest. The questionnaire was edited to ensure that clear, legible, relevant, and appropriate responses were provided. As regards the interview schedule, the data collection and analysis procedures were thematic. In using this strategy, the researcher organized the data gathered and got immersed in the data while transcribing it. After this was done, themes generated were coded and described. The first stage was preparatory by which analyzing the interview data began with the organization and transcription of the audio-tape recordings. The transcription of the interview responses involved listening to each tape repeatedly by the researcher to familiarize himself with the conversations and carefully writing them down in the words of each interviewee. The interview data were then categorized into themes of responses for effective management and comparisons. The development of the themes was guided by the research questions and the literature review. The participants were coded to avoid identification. For the coding process, HD—was used for heads of departments while VC was used for Vice Chancellors and L was used for lecturers. Contributions and responses, made were not attached to names but to the codes.

Research Question One: In what ways do university-related factors inhibit the efficient use of instructional time in technical universities in Ghana?

Table 1. University-Related Factors That Inhibit Utilization of Instructional Time (Responses from Lecturers)

Factors	Agree		Undecided		Disagree		Total	
	F	%	F	%	F	%	F	%
University functions and activities	144	93.5	-	-	10	6.5	154	100
Lack of TLMs to facilitate teaching and learning	154	100		-	—		154	100
Lecturers reporting time to class too late	77	50	32	20.8	45	29.2	154	100
Large class sizes	142	92.2	-	-	12	7.8	154	100
Time is often lost on co- curricular activities	153	99.4	—	%	1	0.6	154	100
Structural problems with buildings (and public address system)	154	100					154	100

Source: (Field work, 2018) F-frequency %-percentage.

6.7 Structural Problems with Buildings and Lack of Teaching Learning Facilities

All the respondents, 154 (100%) agreed that some school buildings had structural problems and ineffective public address systems in classes especially the large ones. Deductively, this could be true as in some cases; students were told that classes were suspended due to leakages and other logistical and structural problems. The rains often disturbs most of the classes and this apparently affected instructional time in the situation where students' attention is disrupted as they focus much on the rains dripping on them. But a very disturbing factor often was the malfunctioning of public address systems (especially microphones) in large classes.

In addition to the quantitative data, there were responses from the interview data. For example, VC-1 lamented:

You are in the school and you can see certain things for yourself. The roofing is very poor which affects the teaching and learning process when it rains. It is sometimes interesting when it rains. The pupils sit at a particular side of the classroom for a while and then adjust to another side. They play hide and seek with the rain till it finally stops. This affects the teaching and learning process. At times too, the microphone and even the projector break down, and for very large classes, the lecturer is compelled to suspend classes. The Limiting factor to solving these problems is the procurement system and prompts release of funds (Field interview data, 2018).

A head of department (HD-1) shared her bitter experience:

The school buildings are not in good shape at all. Sometimes we fear they may collapse. I am personally not comfortable when teaching in such classrooms, neither do my students. So you see the level of seriousness and concentration is zero since we feel unsafe under these structures (Field interview data, 2018).

Another head (HD-2) supported the sentiments of (HD-1) and said:

Some of the buildings used as classrooms are in bad state and do not encourage serious academic work at all. The rooms have poor ventilation; we cannot stay in them when it rains. This to the best of my knowledge affects efficient use of instructional time often times too, we have troubles with our public address system (Field interview data, 2018),

Regarding both questionnaire and interview data, it is true as corroborated in Ayodele's (2014) study, that thousands of educational institutions still have poor physical infrastructure and many are dilapidated, dangerous, and unfit for human habitation. There is often inadequate water at university sites resulting to poor sanitation. Such conditions restrict the teaching and learning activities of the school as well as the health of students and lecturers. The state of affairs is unhealthy, especially for technical universities in which the population constitutes adults students who may have come from comfortable homes and who abhors the slightest disruptions of their learning. Equally, all lecturers teaching in public technical universities are adults who possess dignity and self-esteem. These adults should be treated as adults and with respect by providing a conducive teaching environment for them (Abillo, 2012). There is therefore, a connection between the use of instructional time and the quality of the structures and facilities available in the school.

Several tertiary institutions in Ghana lack adequate laboratories and the situation simply means learners or students learn science and other practical subjects by rote learning (Feneh, 2011). Implicitly, the lecturer has to spend extra time in helping students understand facts that could have been easily understood if laboratories were available. An example is the absence of Information Communication Technology (ICT) laboratories in most institutions of higher learning in Ghana. The data do not fit into the Pickle Jar Theory which specifies that the major responsibilities of one's life or goals are represented by the "rocks" that occupy most of the space. This infers that, one should dedicate more time to such prioritized goals. Implicitly, to achieve efficient utilization of instructional time, universities must prioritize to provide adequate structures and facilities.

One stands to reason that the infrastructural and logistical status of technical universities must be lifted if the goals of full employment must be attained, and for maximum and competitive productivity of the adult graduate to be achieved. Indeed, education for the world of work attained in technical universities will not achieve its goal if adult learners in these technical universities are not given the needed time and logistical support.

6.8 Loss of Instructional Time as a Result of Co-Curricular Activities

The results show that 153 (99.4%) of the respondents agreed that time was often lost on co-curricular activities. Again, university functions and activities impeded the efficient use of instructional time. This statement was agreed to by 144 (93.5%) of the lecturers. This implies that activities such as sports, physical training, and seminars contributed to loss of instructional hours. It can also be inferred that either the activities were not well planned or lecturers found it difficult to get students ready after non-curricular activities. Responses from a head of department supported responses from others: from the teachers. This was evidenced by statements from HD-6:

I have personally observed that some activities and functions in the university negatively influence the efficient use of instructional time. There are lots of moments where time is wasted during school periods. For example, during sports and other university programmes, Independence Day celebration, and preparation for faculty days, classes would have to be skipped to make way for rehearsals and the events as well (Field interview data, 2018).

Another view was also raised as regards how university functions and activities influence instructional time, particularly regarding meetings. This was said by HD-3.

There are certain times we (heads) call for staff meetings as and when the need arises without due reference to the time table or university calendar. At other times it may faculty meetings for subject teachers. Some of these meetings are called for during instructional times. The impact felt is that, the respective lecturers only occupy their pupils with assignments. Here, lecturers and students lose instructional time which could have been used for effective teaching and learning (Field interview data, 2018). VC-2 complained:

1 blame heads of departments very often for loss of instructional time as they call for meetings even in the middle of the school day. This affects lecturers' completion of lesson for an instructional period (Field interview data, 2015).

These interview results and the quantitative data are in conformity with the research conducted by Nathan (2012) that, Independence Day, sports and games, preparation for congregations and convocation meetings are important, but too much of them waste teaching and learning time. Co-curricular activities are important in university settings, but where and how they are positioned matter and affect instructional time. If co-curricular activities are well planned or positioned on the university time-table as posited by Wright's (2002) Pickle Jar Theory, much could be achieved. Efficient time management in relation to the Pickcle Jar Theory is that, if the university concentrates on the most important activities for the day, then work on relatively quiet less important activities, and then finally fill in with the least important activities, then time will be efficiently managed. In a larger context and as it relates to world of work requires, competence (measure to which knowledge is applied) and not only content knowledge. This will require adequate learning time for learners.

Research Question Two: What impediments do management-related factors have on the efficient utilization of instructional time in public technical universities in Ghana?

Table 2. Management-Related Factors Impede Instructional Time Utilization

Factors	Agree F	%	Undecided F	%	Disagree F	%	Total F	%
Directing activities in the university	154	100	- -	-	-	154	100	
Organizing activities in the university	142	92.2	- -	12	7.8	154	100	
Controls to ensure decisions taken are	153	99.4	- -	1	0.6	154	100	

achieved							
Appraising curriculum implementation/instruction	143	92.8	- -	1 1	7.1	154	100
Provision of student personnel services	142	92.2	- -	12	7.8	154	100
Provision of staff personnel services	154	100	- -			154	100
Supervision of instruction	150	97.4	- -	4	2.6	154	100
Ensuring facilities and TLMs are adequate and in good shape	154	100	- -	-	-	154	100
Good university community relationship	153	99.4	- -	1	0.6	154	100

Source: (Fieldwork, 2018) F-frequency %-percentage.

From the quantitative field data, majority of respondents (lecturers) agreed that the variables (indicated in the extreme left column) impeded instructional use of time. Deductively, this is retrogressive to the teaching and learning process. As much as these are very vital to the smooth running of the technical universities, however, the excesses involved with providing these services can be avoided. For example, too many heads count in our universities for payroll audit services are uncalled for.

7. Lateness to Lecturers

All the respondents 154 (100%) strongly agreed that lateness to class impeded the efficient use of instructional time. During the interview session, VC-2questions the extent of non-instructional activities in the universities.

We VCs require that each and every lecturer should be present at lecture in accordance with the time-table. But do they do this? Lateness to lectures has been hindered to efficient use of instructional time in this university (Field interview data, 2018).

Similarly, there was a contribution by another VC (VC-7) that *the heads of departments do not often performed very well in terms of making sure lecturers report to lectures on time. Several initiatives should be taken in consultation with the faculties, academic board and lecturers to ensure prompt reporting to lectures (Field interview data, 2018)*

In a similar view shared in relation to the heads of department's management skills and its effect on efficient use of instructional time VC-4, explained:

Some heads of departments' characteristic as heads have not been perfect to the best of my assessment. They are slow to implementing certain initiatives or decisions. This has generally affected instructional time utilization. Lecturers and students all delay as regarding school time (Field interview data, 2018).

These responses from Table 2 and the interview data support Anewu (2011) opinion that the head, as a manager, has to direct the affairs of his or her institution in ways that balance instructional and

non-instructional time. He/she has to initiate actions and show the way activities should be carried out. As earlier stated, the influence may take the form of giving out clear and enforceable instructions for carrying out tasks. Instructional time has to be efficiently used, and for that matter, the head (manager) has to ensure that lecturers are in class during instructional periods and are doing what is required of them. This is in conformity with the Wright's (2002) Pickle Jar Theory that the direct characteristic of the head of department will have negative impact on lecturers' use of instructional time. As the head of department, he must offer perfect directions to his subordinates and students in regards to managing time efficiently and this will help lecturers in their use of instructional time.

8. Supervision of Instruction

One hundred and fifty (97.4%) respondents agreed that inadequate supervision of instruction hampered instructional time. This implies that, heads of departments in the course of their duties must ensure things are done right. This was supported in the interview by some of the VCs that head of department must be very much involved in supervision. Two of the VCs made statements. (VC-4) said:

Some of the heads of department are not very effective, efficient and time conscious, especially when it comes to ensuring regularity and punctuality of lecturers in class. They perform this task in ad-hoc manners and sometimes often call the lecturers from the classrooms for discussions (Field interview data, 2018).

Another (VC-3) said:

The head must know his roles and responsibilities as a head and rightly performs them. He should not interfere with Lecture/class time (Field interview data, 2018).

The view also demonstrates some amount of resistance of lecturers that may be inherent in heads of department's exercise of supervision over lecturers. One head of department (HD-4) said:

Lecturers always complain among themselves that we (Heads) exhibit autocratic leadership style even in supervision but that's not the case; we only want things to be done right. This issue has come under discussion during several staff meetings (Field interview data, 2018).

The information from the interview attests to the fact that lecturers were of ten supervised. Making known his view on the extent of heads' supervision, HD-5reported:

Some lecturers are not happy with the way some heads of departments go about with their supervision. They are always on us. But I must admit that supervision in my department has been tremendous. This is because not a single day will pass without me going round to supervise teaching instruction (Field interview data, 2015).

Analytically, the nature of supervision contained in the responses is what Owusu-Ansah (2010) points to as "informal supervision". This is characterized by unplanned and occasional supervisory acts which reflect how teaching is going on. By further implication, heads have to move round to observe the various components of the instructional school time as adhered to. Writing on internal supervision in technical universities. Jones (2009) explains that internal supervision is a situation by which

departmental measures are taken in the department to bring about improvement and accomplishment of set goals and objectives. Ayodele (2014) also points out that departmental supervision deals with all the necessary activities that are carried out by teachers and lecturers in the school to enhance effective teaching and learning. Feneh (2011) in a study of 60 schools from peri-urban (29 schools) and rural (31 schools) areas in Ghana found that academic performance is better in private schools than public schools because of more effective departmental supervision of instructional time. As specified by the Pickle Jar Theory, important things must be arranged and considered first. That is, basic facilities or amenities must be provided to foster academic time. This will help lecturers' use their instructional time efficiently.

Relative to the issue of supervision by heads of departments, it must be borne in mind that caution should be taken especially when supervising fellow colleagues. The purpose of such supervision is to assist them develop a clearer understanding of their own responsibilities, and not by coercion. It should recognize the integrity and mental diversity of individual adult worker so that the work environment is seen as viable, joyful and beneficial experience that builds self-belief.

Research question three (3): How do teacher-related factors impede the efficient use of instructional time in public technical universities in Ghana?

Table 3. Lecturer-Related Factors That Impede Instructional Time Utilization

Factors	Agree F	%	Undecided F	%	Disagree F	%	Total F	%
Planning class lectures according to time-table saves instructional time	154	100	-	-	-	-	154	100
Lecturers' preparation before lesson delivery	154	100			—	—	154	100
Interferences from other lecturers and visitors to the university	144	93.5			10	6.5	154	100
Teaching experience, certification, and qualification	149	96.8	2	1.3	3	1.9	154	100
Lecturers' workload	154	100	-		-	-	154	100
Lecture motivation and interest	146	94.8	4	2.6	4	2.6	154	100
Lecturers' understanding of time and how it is efficiently used	153	99.4			1	0.6	154	100
Transition time from break often delays in beginning new lessons	143	92.8			11	7.1	154	100
Lecturers spend time on slow learners	124	80.5	11	7.1	15	9.7	154	100

Source: (Fieldwork, 2018) F-frequency %-percentage.

All the contextual variables in the column on the extreme left impeded instructional hours. This is a disincentive to effective educational delivery in technical universities whose main function is imparting practical and employable skills. But of vital significance to the researcher were the issues of lecturers' workload.

8.1 Lecturers' Workload

The responses gathered in Table 3 indicate that, 154 (100%) of the lecturers agreed that lecturers' workload impeded instructional time. This implies that, as alecturer's workload increases beyond flexible limits, there will be high possibility that 'they may not be able to make adequate use of instructional time. These data were supported in a statement from the HD-7 that:

as lecturers' workload increases, they get tired quickly and may shed off the rest of the period to make room to relax. Similarly, increased workload has adverse impacts on lecturers' ability to deliver well as this will cause more harm than good to students (Field interview data, 2018).

VC-5 commented:

Sometimes, lecturers' workload makes some lecturers ineffective and inefficient since they may not be able to make enough use of instructional time. They will be in university alright but cannot do what is expected of them. In technical universities, we have problems with recruiting as many lecturers as we required due to budgetary constraints Moreover, many prospective academics are in disciplines not related to technical universities. And as per the requirements, some of them do not have the requirements some of them do not have industrial experience (Field interview data, 2018).

VC-6mentioned in view:

I believe a lecturer's workload has direct relationship with the use of instructional time because if one plans his time very well, much can be achieved (Field interview data, 2018).

These findings agree with Amoah's (2009) studies on *professionalism* that lecturers' workload has a significant effect on the use of instructional time. Departments in which individual lecturers have more than 20 credits per week registered stress-related illnesses compared to departments in which lecturers have less credits. The findings agree with Nathan's (2012) position that lecturers' workload is one of the factors that inhibits instructional time. The apparently exhausted lecturer will need more time to rest hence, time is wasted. Wright's (2002) Pickle Jar Theory states that, in order to manage time effectively one needs to make room for relaxation. In the course of relaxation, some amount of instructional time will be lost. Arguably, heavy workload lowers lecturers' efficient use of instructional time.

9. Conclusions

The study investigated factors influencing efficient utilization of instructional time in technical universities in Ghana. The findings of the study implied that heads of departments were not very watchful at times regarding instructional time, and this could endanger the future of the adult learners. Some heads were not setting right examples on time management for the adult clientele to appreciate.

Heads were not utilizing instructional time efficiently and this apparently brings in its trail problems of lack of completion of syllabus, low lecturer-student interactions and ineffective teaching. It can also be concluded that although educational advancement is a step in the right direction, however, the level of efficiency on the part lecturers and heads in universities is pertinent in achieving efficient time utilization at the department and this will in turn affect teaching and learning.

Putting in place and ensuring proper administrative structures is a major area departmental heads and university management can ensure things are done in accordance with achieving efficient instructional time utilization. The functions and responsibilities of the management of the technical universities must be properly carried out in ensuring all loopholes are covered for the purpose of improving teaching and learning.

10. Recommendations

Based on the findings and conclusions drawn, the following recommendations have been made.

1) Based on the findings that numerous staff meetings impeded infrastructural time it is recommended that emergency staff meetings should be reduced; and even regarding the time they will take place, lecturers teachers should be informed by heads of departments in advance on what is to be discussed by sending memoranda round before the meeting.

2) Based on the result that the universities encountered supervisory challenges that influenced the efficient utilization of instructional time, it is recommended that lecturers should assist in the development and implementation of university supervisory and management improvement plans. The NCTE must provide them with logistics, in-service training, workshops, seminars, and conferences to improve their skills in time management.

3) Concerning the result that within the technical universities time was lost on co-curricular activities, deans of faculties should examine the time-tables of departments, to ensure that co-curricular activities do not encroach upon instructional time.

4) Based on the result that some departments in the technical universities lacked TLMs which affected efficient utilization of instructional time as well as teaching and learning, the NCTE should as a matter of urgency, provide technical universities with the needed teaching and learning resources in order to facilitate the teaching and learning process.

5) It was found that some heads of departments' management skills were factors that affected instructional time utilization. The NCTE should improve departmental management through improved training for heads and other lecturers with substantive management skills in order for them to function more effectively and efficiently in their respective positions.

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