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A **Scenario, Workshop and Recommendations for implementation of a Course Management System (CMS) in a University FUTY - Nigeria.**

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Summary

Computer knowledge and ICT related skills; flexibility and effective self-management are crucial concerns for today's lecturers working in higher education and universities in particular. These skills are essential in order to optimize lecturers' performance and also in order to compete in a world where needs and ways of learning change almost on a daily basis. Almost all instructors in America and Europe and a few in developing countries are using a Course Management System (CMS) to create, organize and deliver their courses for increased flexibility, creativity and interactivity among learners, this is far fetched in Nigerian institutions today. This informed my decision to design a New-Style Lecture Scenario (NSLS), particularly in terms of some activities in which lectures would be supplemented by the use of a CMS and lecturers and students of FUTY would be engaged in the use of CMS as a support for teaching, learning and research activities if the scenario is implemented. This design reflects a way to reduce the problem of poor lecture attendance and also the problem of lack of up-to-date primary resource motivating materials among others for teaching, learning and research activities. By this, students will be encouraged and motivated to be engaged in lectures, even if they can not be present. This scenario is only feasible with the kind of large number of students at FUTY if supported by the use of a CMS.

1. Introduction to the Problem Statement and Research Questions

In this chapter an introduction to the problem statement (Section 1.1) is given; the general and sub-research questions that will guide the procedure of the study are stated (Section 1.2); the goal and specific objectives of the study are delineated (Section 1.3); and a general outline which describes the overview of the study (Section 1.4) is stated.

1.1. Introduction and Problem Statement

With the advent of the new information and communication technology evolution, academic institutions are enabled to provide a flexible and more open -learning environment for students. Indications are that with an increasing number of enrolments at all levels of education, distance or blended learning shall continue to grow in Nigerian universities. This calls for an immediate technological support, so that Nigerian higher institutions can develop a culture and of course a society that places a high value on education and training. An e-learning related technology has great potential to supplement the traditional face-to-face method of teaching. The ICT-enhanced learning can provide new opportunities to explore a high level of cognitive activities such as self study, creativity, problem solving, and team work, while providing teachers with the means to take into account the individual needs of students, as occurs with the use of the TeleTOP course management environment in the University of Twente, the Netherlands.

According to the executive secretary of the National Universities' Commission (NUC) quoted by Aragba-Akpore (2004, October 18th), "Nigeria as at now has 181 higher institutions (Universities, Polytechnics and Colleges of education) with students enrolment at 1.4 million, and that, this figure is expected to triple by the year 2011" (para.1).

The implications of this statement (combined with other information about current conditions in Nigeria, see Chapter 2) are:

1. That the Nigeria universities are overcrowded with students, with few lecturers attending to them, yet they only use the old traditional lecture method without technology support.

2. That lectures are usually poorly organized and in most cases not well attended by both the lecturers and/or the students.

3. That lecturers are overloaded so much that they become inefficient

4. That most of the Nigeria youth do not get required higher education since most of the secondary schools' graduates are not usually admitted to the tertiary institutions as it is highly competitive. For instance, it has been pointed out by the then Minister of Education quoted in Col International (2001), that "over 700,000 candidates qualified for university entrance in 1999, but only 80,000 ultimately gained admission" (p. 17).

With the introduction of e-learning related technology, these graduates could enroll directly and/or without leaving their homes, in online colleges and /or universities in and around the country (Mercy & Adibe, 2003). Also, students who attend a campus-based university could be more flexible about their lecture attendance but at the same time have the benefits of the lecture, via the support of technology.

Nigeria in her plans to combat this situation of overcrowding recommitted herself to re-establish a Open -University system with a view to complement the continuous demand for distance education that has been in practice by some Nigerian universities which is still based on the traditional method and paper print of materials for teaching and learning, characterized by poor coordination (Col International, 2001; Ogunsola, 2004). However, Col International (2001) indicates that Nigerian universities are still "enrolling more students than their physical facilities and human resources can handle" (p.18). This means the problem of overcrowding in Nigerian universities is not solved even with the practice of distance learning and the re-introduction of an Open-University system. The likely reason could be due to lack of the use of an e-learning related technology support.

In Nigeria there has been a persistent lack of up-to-date primary source motivating materials (such as journals, periodicals, and recent research articles), for teaching-learning delivery and /or knowledge acquisition and research work. This is so because most of the Nigerian higher institutions lack ICT facilities such as the Internet/intranet connections, while on the other hand institutions that have ICT facilities such as cyber cafés use them for commercial gains and so only few lecturers and students (who can afford it) patronize these. Furthermore the Nigerian universities' libraries are not offering digital access but mainly store documents and materials (such as books, journals, periodicals) which are obsolete (Col International, 2001; Ogunsola, 2004). This was further confirmed by the recent statement made by the NUC Executive Secretary that the academic journals made available to university academicians are of low quality (Okonedo, 2005, Feburary 28th).

In accordance with the above observations, the Federal University of Technology Yola (FUTY) being one of 25 Federal universities in Nigeria is overcrowded with students more than the physical facilities and human resources of the school can accommodate. This could be one of the reasons why most of the students are not living on campus, but very far away from the school and because of this some students are either late or miss morning lectures. Sometimes lectures are poorly organized and overcrowded, for lack of enough space in lecture halls to accommodate all the students at a lesson, so much that some students end up receiving lectures outside the hall, and while standing. Sometimes lectures are cancelled without prior notice to students only for them to discover on entering the lecture hall. In most cases missed lectures are never compensated only by provision of handouts to students. This scenario has further contributed to poor attendance at lectures as students depend too much on the handouts, and because of that some are not keen about the lecturers' attendance. Thus students developed the attitude of what I may call 'I can stay away and when examination is near I just get the handouts, read, and pass.'

Another contributing problem to poor lecture attendance and disruption of the entire academic calendar of the university is the frequent strikes of the Nigerian universities' academic staff (Olujuwon, 2002.). This has made the university calendar unstable, and with nothing for the students to study during these periods of strikes.

As observed earlier, this lack of up-to-date primary source motivating materials for teaching-learning delivery and research work is also true for FUTY. It suffers most from this lack of up-to-date primary- sources material being an institution in the rural area. FUTY has four cyber cafés, but because they are not free, most students do not patronize the cyber cafés, and lecturers only patronize them for materials that would assist them in developing their handouts, and not for research work (Olujuwon, 2002).

FUTY in addition to her regular programme, runs part-time (i.e evenings/ part-time teaching) and distance education programmes for award of Bachelor degrees, Masters Degrees and diplomas using the traditional face-to-face lecture methods without any technological support,

even though it has ICT facilities that could have be used to support the distance and part-time leaning activities. Workers who cannot afford to come to campus regularly for the evening part-time teachings because of one official engagement or another can enroll if e-learning is introduced as a support (as online learning materials through the Web can be made available).

The use of e-learning related technologies to deliver learning materials vis-à-vis virtual classroom, computer-and networked based systems (www, or otherwise such as video conferencing, satellite broadcast, CD-ROM, both on campus and/or on blended mode, which support and facilitate effective teaching- learning related activities is still far fetched in most of the Nigerian Universities and in particular FUTY. Emphasizing this, the Executive Secretary of NUC quoted by Aragba-Akpore (2004, October 18th) said "only a few of the tertiary institutions have begun to implement e-learning systems in their schools" (para. 4).

The immense contribution of learning through the web-based technology cannot be over emphasized, as there are a lot of relevant information materials on education and research that are always massively available on the Internet but not usually readily gotten from either lectures or books from the library.

This situation however has posed a lot of concern to Nigerian educators, because the problem is not a lack of technology or of funds for the implementation, but rather a lack of will and determination on the part of the Government and the Governors of higher education (Itegboje & Okubote , 2002).

The use of technology such as a Course Management System (CMS) would greatly support or complement the teaching-learning related activities and research work that is inadequately done in FUTY.

1.2. The Research Questions

Given this context, the general research question for this thesis is: How can a "New-Style Lecture Scenario" supported by a CMS be implemented as a potential solution for the support of teaching –learning related activities in FUTY, Nigeria?

This question can further be divided into the following sub-questions:

1. What are major problems related to lectures and learning in FUTY?
2. Will a new lecture scenario supported by a CMS help improve lecture and learning in the university?
3. How can a CMS technology be used to support the New-Style Lecture Scenario?
4. What is the implementation plan for the Scenario supported by a CMS from the various stakeholders' perspectives of the university?
5. What strategies can be used to present these ideas to the main stakeholder groups?
6. What are the expected responses of the various stakeholders' to the proposed strategy?
7. What are the recommendations to the university and beyond (other universities in Nigeria)?

Findings to these questions will guide towards making appropriate recommendations for the implementation of a relevant Scenario supported by a CMS technology that fits and will support teaching-learning/training related activities in FUTY and beyond (within Nigeria).

1.3. The Goal/objectives of the Study

The general goal for this project is to develop a scenario, a workshop, and recommendations that would support the adoption of a CMS as an e-learning tool.

The specific objectives shall include among others:

1. To encourage and steer FUTY to use its ICT facilities for the promotion and transformation of teaching-learning activities,
2. To identify factors responsible for the non-implementation of an e-learning related technology in FUTY,
3. To motivate stakeholders through a workshop and a pilot demonstration of the use of a CMS in a learning environment.
4. To recommend to the FUTY management the deployment of e-learning related technology in the university and beyond.
5. To suggest to National universities' Commission (NUC) of Nigeria to see the need for the deployment of e-learning related solution in all the Nigeria Universities.

1.4. A General Outline of the Study

In this chapter the introduction to the research problem, questions and the objectives are mentioned.

In Chapter 2, a general introduction to Nigeria (Section 2.1) is given, the Nigerian culture particularly as it relates to learning is discussed (Section 2.2), characteristics of Nigerian universities are noted (Section 2.3), FUTY and its serious problems are described (Section 2.4), and a conclusion (Section 2.5) is drawn.

In Chapter 3, a review of literature related to the following topics is discussed: Technologies for supporting lectures and learning (Section 3.1) are explained, CMSs, overview and examples (Section 3.2) are described; CMS as a support or substitution for lectures (Section 3.3) is discussed; Issues related to use of a CMS in higher education (Section 3.4) are explained; characteristics of a scenario for using CMS for the identified problems (Section 3.5) are discussed; a conclusion (Section 3.6) is drawn.

In Chapter 4, a design of a scenario for new style lecture supported by a CMS (Section 4.1) is described, a design of a workshop for the stakeholders of the new style lecture at FUTY (Section 4.2) is outlined and explained, the design of the before-and-after the workshop evaluation instruments (Section 4.3)are explained, experiences of the pilot version of the workshop and evaluation instruments(Section 4.4) are summarized, a revision of the scenario, workshop and evaluation instruments on the New-Style Lecture Scenario (Section 4.5) is described, a conclusion is (Section 4.6) drawn.

In Chapter 5, the research procedures as they relate to the specifics of organizing and communicating the workshop(Section 5.1) is explained, the respondents (Section 5.2) are described; administering of the pre-workshop questionnaire (Section 5.3) is explained, description of the workshop as it actually happened (Section 5.4) is discussed, administering the post-workshop questionnaire (Section 5.5) is explained, data presented and compared before and after the workshop from each evaluation instrument (Section 5.6) are described, and interpretation of the data (Section 5.7) is made, a conclusion (Section 5.8) is drawn.

In Chapter 6, recommendations and conclusions related to the following are made: Reflections on the New-Style Lecture Scenario and the suggested uses of the CMS (Section 6.1) are given; reflections based on the evaluation of the results (Section 6.2) are made; recommendations to the university and NUC (Section 6.3) are made; a review of the research questions and recommendations for other researchers (Section 6.4) are discussed; and implications for further research (Section 6.5) are mentioned, the thesis concludes with some personal reflections by the researcher(Section 6.6).

2. Context Analysis

In this chapter, a general introduction to Nigeria (Section 2.1) is given, the Nigerian culture particularly as it relates to learning is discussed (Section 2.2), characteristics of Nigerian universities are noted (Section 2.3), and FUTY and some of its most serious problems are described (2.4), a conclusion (Section 2.5) is drawn.

2.1. Introduction to Nigeria

"The Federal Republic of Nigeria is 10 00 degree N, 8 00 degree E. It is located along the west cost of Africa. It shares its borders with Benin, Niger, Cameroon, Chad and the gulf of Guinea. It is made up of 36 states with Abuja as the capital city. Nigeria is home to more than 130 million people with 250 ethnic and religious groups and more than 500 spoken languages. More than 40 percent of the population is below 15 years of age" (SIFE Nigeria, 2004).

Figure 1 shows the political map of Nigeria including the town of Yola, in which FUTY is situated.

Figure 1. The Nigerian political map showing the town Yola in which FUTY is situated. (Adapted from the World fact book, 2005)

This population combined with its diverse ethnicity has adverse effects on the Nigeria economy, health, education and social lives despite the fact that Nigeria is one of the leading countries in oil production which however is her main source of revenue. This is to say that the Nigerian economy is monoculture, although before independence (1960) agriculture used to provide 98% of her GDP but today only a negligible percentage comes from it.

Despites Nigeria's rich income from oil, it is interesting though disheartening that almost 70% of the Nigerians live below poverty level. According to this website's

(http://www.oxfam.org.uk/what_we_do/resources/downloads/) description, Nigeria's per capita income which was around US$1000 in the 1980s dropped down to US$10 in 1999. Further more, Amoguo (2003) observed and reported, that the national poverty rate is 70%. This is to suggest that almost 80 million people in Nigeria live on less than $1 a day, and it may be worst by now, perhaps this explains why there are civic disorder every now and then among the Nigerian workers for more increase in salaries(universities lecturers in particular).

Thus Nigeria presently is under a critical level of economic and social deprivation, even in the midst of abundant natural and human resources. This, in my own opinion, may largely be attributed to mismanagement and/or corruption that operates at the high echelon of the Nigeria government officials, a situation where by a minister of education gives bribe for increase to his ministry's allocation budget to senators in collaboration with the senate president and also a situation where former inspector general of police was involved in million of dollars scandal (Aluko, 2005; Irin, 2005; Shirbon, 2005). So one can rightly say that the Nigerian's major problem is bribery and corruption and not lack of adequate resources. This could explain perhaps some of the problems militating against education today despites good policies on ground but yet nothing to show for its implementation.

The good news however, is that the Nigeria president has taken upon himself to improve the situation and needs every Nigerian's cooperation if he is to succeed with the fight against this epidemic disease that affects every sector of Nigeria, and education in particular.

2.2. The Nigeria Culture

The need for attaining effective, flexible, more efficient and meaningful learning activities in Nigeria higher education suggests the need to understand Nigerian culture and in particular the higher-education learning culture. Hofstede(1984) quoted in Ogunbase (2003), observed that it takes quite some times to understand a particular cultural system even when one is born there. Also Brown(1995) quoted in Syque (2005), observed that, "if one can understand a culture of an institution then one has a chance to interact successfully with it and could have the opportunity to even change it, though it is sometimes difficult"(para. 5). This is true of Nigeria, a country that is both multi religious and multi-ethic. It is said to be "the most populous of all African countries and the largest black nation in the world" (SIFE Nigeria, 2004; Jibril, 2003). This is to say that the Nigeria culture is complex and thus it is sometimes difficult to give a precise description; however before attempting this it would be proper to understand first what culture and/or learning culture are. In this section, culture in general is briefly discussed (Section 2.2.1), what learning culture is (Section 2.2.2) is described, the Nigeria culture and learning (Section 2.2.3) is discussed.

2.2.1. What is culture?

Culture has been defined in many ways. Barnouw (1963) quoted in Al-Najjar (2002), defined culture as "the particular system of art, thought and customs of a society, the collective programming of the mind, which distinguishes the members of one group or category of people from another, the set of shared norms and values which influence the behavior of a group of people, the result of a historic of shared learning, which is anchored in a group of people, the way we do things around here" (pp. 21-22).

Hofstede (1983), quoted in Al-Najjar (2002), gives a further definition of culture as:

> "The collective programming of the human mind that distinguishes the members of one human group from those of another, in this sense it is a system of collectively held values. It consists of the patterns of thinking that parents transfer to their children, teachers to their students, friends to their friends, leaders to their followers and followers to their leaders. Culture is reflected in the meaning people attach to various aspects of life, their way of looking to the world and their role in it, in their values, in what they consider as 'good' and as 'evil', in their collective beliefs, what they consider as 'true' and as 'false', in their artistic expressions, what they consider as 'beautiful' and as 'ugly'. Culture, although basically resident in people's minds, becomes crystallized in the institutions and tangible products of a society, which reinforce the mental programs in their turn" (p. 22).

From the forgone definitions of culture one can conclude by saying that the Nigerian's culture is basically characterized by ethnicity and religion.This is because every Nigerian's behavior in most cases is patterned and tailored either by his tribal beliefs or by his religion or both. Although there are very few individuals who still practice their African traditional religion particularly in the southern part, Nigeria is noted with two major religions namely Islam and Christianity. The north though is said to be dominated by Moslems practice both religions while in the south it is predominately Christians. Perhaps that could explain why there are less religious crisis in the south than in the north where most conflicts arouse due to religious clashes. This is to say that Nigerians are religious yet corrupt, and one wonders whether this religion is from the heart or politically motivated.

For instance in the Northern part of the country where most are regarded to be Hausas/Fulains, they do things along the Islamic beliefs while in the southern part most people do things according to Christian faith. Perhaps this would suggest why the western education is more embraced in the southern part of the country faster than in the north. In fact up to this moment there are two types of education practiced in the northern part of Nigeria the westerner education (the normal education world wide) and the koranic education (i.e Islamic education), and because of these, the learning culture in the north may slightly defer from that of the south. Further more because of these religious beliefs there are also two kinds of laws the sharia law practiced along side with the common law in some few states in the north and the common law (English law) in middle and southern parts of the country. This may explain why over the years there has been a religious conflict in Nigeria particularly in the northern parts of the country where both the Christians and the Muslims are and every side would always like things to be done according to each others' belief, which is not always easy. There are also differences along ethical beliefs within every region but this has no serious effect on the Nigeria economy or its co-existence as every tribe can practice its belief without much interference, more so that the religion has over shadowed everything including educational practices as described and explained in section 2.2.3

This description goes to suggest that Nigeria culture as observed is characterized by beliefs values and practice that are usually acquired over time, and these beliefs, values and practices vary from one ethnic group and/ one's religious inclination.

2.2.2. What then is learning culture?

Campus Culture (n. d.), describes a learning culture and a learning organization as "accepting a set of attitudes, values and practices which support and encourage a continuous process of learning for organization and its members. Thus organizational culture is the system of shared meaning, values, beliefs, and mental models that distinguishes one organization from another and provides a sense of identity for her members" (para. 1).

A University 's culture for example, is reflected in how a faculty and administrators' offices are arranged, how parking spaces are allotted, how curriculum decisions are made, how campus information is shared, who comes to what meetings, how teaching and learning are conducted and managed, how students and institutional success are measured (Campus Culture, n.d.). Thus a learning culture in this context would mean the way teaching-learning activities; social interaction and school administration are done within an institution. Again this various from region to region based on those belies discussed above, although all over, the same curriculum is used, but the social interaction and conduct on campuses differ widely. For instance while in the south there is extremely freedom of behavior and so it does not matter what kind of dresses a student wears or how she/he conducts himself/herself, in the north it is not so, there are restrictions as to how a student dresses and how he/she conducts himself/herself (which is based on religion), as everything an individual does would always be interpreted along one's religious beliefs. This suggest that males and females interaction in schools in the north is very low (except among the Christians north) while it is not so in the south. It is interesting to note however that with much exposure and socialization from the NYSC schemes there has been a lot of changes along these religious beliefs particularly at the urban areas.

2.2.3. The Nigeria culture and learning

The Nigeria culture and its implications for learning are hereby discussed based on Hofstede's (1997) five cultural dimensions as quoted and summarized in Ogunbase (2003). These are: "Power-distance, Collectivism versus individualism, Femininity versus masculinity, Uncertainty avoidance, and Long-term versus Short-term time orientation" (p. 15).

1. **High Power-distance versus Low power-distance**

Power-distance can be defined as the extent to which the less powerful members of institutions and organizations within a community expect and accept that power is distributed unequally. Centralized power and large differences in status within an organization or institution suggest high power-distance cultures, while less difference occurs in low power-distance cultures (Ogunbase, 2003). Thus power- distance describes the extent of power sharing and control, for instance in high power-distance cultures power is usually centralized, i.e., top-down control, whereas in low power-distance cultures there is greater equality and empowerment. Ogunbase (2003) observed that Nigeria could be rated as "a high power-distance culture, where practice is usually based on class distinction, social mobility or both. He went further to suggest that in organizations, "there are strong formal centralized hierarchies where subordinates seldom use their own initiatives but always expect to follow what they are told by their superiors" (p.20).

Furthermore, according to Ogunbase's summary of Hofstede, in Nigerian educational organizations and in particular higher-education institutions, teachers/lecturers are considered and regarded as people who have wisdom and knowledge in their respective courses, and are usually held in high esteem during teaching-learning sessions. Students dare not ask their teachers challenging questions or make suggestions outside the information given to them. Furthermore as a high mark of respect, students hardly address a teacher by his or her name except "sir or madam". Thus, the two groups see themselves as existentially unequal. This suggests that there is gap between the instructors and students in the Nigerian learning culture, which invariably affects their expected roles in teaching - learning activities (Ogunbase, 2003). This means, students are passive in teaching-learning processes and cannot offer a suggestion as a correction to the teacher's mistake(s). This could explain why if a lecturer fails to come to a lecture without prior notice to students, students cannot ask him/her why, even when he/she fails to show remorse for that behavior.

2. **Individualism versus Collectivism dimension**.
According to Hofstede as quoted in Ogunbase (2003), "Individualism pertains to societies in which the ties between individuals are loose: everyone is expected to look after himself and his or her immediate family", while "Collectivism as its opposite, pertains to societies in which people from birth onwards are integrated into strong, cohesive in-groups, which through people's lifetime continue to protect them in exchange for unquestioning loyalty. Collectivist cultures are believed to value harmony and silence, while individualist cultures value freedom and personal time, Personal opinions not emphasized in collectivist cultures but a predetermined opinion by the group" (Ogunbase, 2003, p. 15). Hofstede in Ogunbase (2003) went on to suggest that "in an individualized culture, the individual person and his/her rights are more important than groups that he/she may belong to, while the opposite is the case with the collective cultural practice where family, tribal or religious and/or communities' loyalties are paramount"(p. 15).

In Nigeria, family, tribe and religion are very important to individuals, groups, and the society. This means in Nigerian culture, people are dependent on in-groups and extended families with patriarchal structures where family heads exercise unquestionable strong moral authority. Thus Nigeria practice reflects a pure collectivist culture where harmony, silence and display of desired behavior are practiced and valued highly. The implication is that in organizations, the individual is enculturated to value training (lifelong learning) at the workplace and to achieve more skills. In the Nigerian learning culture, group responsibility for learning tasks is valued and encouraged. Although the collectivist culture maintains high power-distance with the teacher-centered learning approach, students usually form themselves into sub-groups for major assignments and/or discussion such as preparation towards examinations.

3. **Femininity versus Masculinity dimension**
This describes the degree to which "traditional" gender roles are assigned in an organization or society (culture), for instance men are considered and believed to be more aggressive and more competitive, while women are considered to be more gentle and believed to be concerned with the family and /or domestic affairs. "The distinction between these roles in the masculine cultures is observed while the distinctions tend to collapse in the feminine cultures with more concern for the quality of life overall" (Hofstede, 1997 quoted in Ogunbase, 2003, p. 16).

In the Nigerian context, the masculine-feminine dimension relates to how men and women make choices of what to study, which in most cases are strongly based on career opportunities with little intrinsic interests. It has been observed (Ogunbase, 2003) that in Nigeria "more male students are found in law and engineering studies compared with female students, which are interested in other studies such as Medicine, Agriculture, Education and Social sciences, and that the sexes are more or less evenly distributed in some other areas" (p. 24). Although I agree with Ogunbase's observation, however I wish to say that in most parts of Nigeria, particularly north and middle belt, females generally prefer to read education, arts/humanities, social sciences and law courses with the belief that courses like mathematics, sciences, engineering, and medicine are difficult, and so they are for men. Only a negligible percentage of females read sciences, engineering, mathematics and technical courses. This perhaps explains why most working-class females in the Nigerian workforce are teachers.

4. **Uncertainty avoidance (from strong to weak).**
This describes "the extent to which the members of a culture feel threatened by uncertain or unknown situations" (Hofstede, 1997, quoted in Ogunbase, 2003, p. 18). Ogunbase went on to suggest that "uncertainty avoidance varies from one culture with the other, having different approaches to formality and tolerance for ambiguity. Hence, cultures with strong uncertainty avoidance are more formal in approach to things/issues for more interpretable and predictable events" (p. 16). Thus it describes the extent to which a culture's values are predictable. With

strong uncertainty avoidance, cultures have strong traditions, beliefs and rituals and tend toward bureaucratic structures and roles.

With respect to the cultural dimension relating to uncertainty avoidance "Nigeria can be rated high, as Hofstede's Uncertainty avoidance Index (UAI) score of 54 for West Africa ranked 34 out of 50 countries and 3 regions shows" (Ogunbase, 2003, p. 23).
Organizations and institutions in Nigeria have strong formal structures that are adhered to, making events more predictable and interpretable. In the teaching-learning process, the teachers are regarded and seen as experts with high knowledge of their disciplines and possessing the sole answers to problems. The students are placed in a structured learning situation and are only concerned with the right answers. The implication is that Strong uncertainty avoidance, with preference for a structured learning situation, attempts to reveal or forecast the results of learning before the participants act. "This type of situation has a positive influence on the process of learning compared with its effects on weak uncertainty avoidance cultures" (Ogunbase, 2003, p. 18). Thus learning is more dependent than self-directed or personalized as flexible learning theorists advocate.

5. **Long-term versus Short-term time orientation**.

The Long-term orientation according to Tylee (2001) quoted in Ogunbase (2003), "believes that older people have more authority than younger people in the society, thus at workplace, people should try to acquire knowledge and skills, and be hardworking, frugal, patient and persevering" (p. 16). With respect to the Long-term versus Short-term time orientation cultural dimension, Ogunbase observed that "Nigeria combines the two poles; persistence, ordering relationships by status and observing this order, thrift, having a sense of shame; and personal steadiness and stability, protecting one's face, respect for tradition, and reciprocation of greetings, favors and gifts. In this dimension, the Nigerian cultural situation tilts a bit to the short-term time orientation with strong values and respect for tradition, reciprocation of greetings; and as well shares the values on the pole of the long-term time orientation i.e. ordering relationships by status and observing this order, this is a true reflection of the Nigeria culture along this dimension" (p. 16).

In organizations, values and beliefs are shared and older people have more authority than younger people. Thus Nigeria can be described as in-between long and short term cultural orientations. Ogunbase went further to say that, "Long-term time orientation cultures promote practical learning values, while short-term time orientation cultures give room for desired results and achievements" (p. 24). The implication is that in teaching-learning processes, lecturers' and the students' values of this cultural dimension make the students to be more obedient and committed towards learning, even though it is not for better understanding or for the knowledge it involves, but rather for passing examinations.

2.3. Nigerian University Education: Current Situations

In this section the structure of the Nigeria education system (2.3.1) is stated, teaching, learning and research in Nigeria universities (Section 2.3.2) are described, distance and open-university education in Nigeria (Section 2.3.3) is discussed, ICT facilities and the level of computer literacy in Nigerian universities (Section 2.3.4) is explained.

2.3.1 The structure of the Nigeria education system

The structure of the Nigerian educational system is 6-3-3-4. This means 6 years primary education, 3 years junior secondary education, 3 years senior secondary education and 4 years higher education (this includes colleges of education, polytechnics and universities). The 4 years

indicates the number of years a secondary-school graduate is expected to spend before he/she can obtain a first degree (UESCO quoted in Col International, 2002).

According to the Nigerian National Universities Commission (NUC)'s website (http://www.nuc.edu.ng/Universities/Universities.htm), Nigeria as of May 2003 has 47 universities; of which 25 are federal, 15 are state and 7 are private; in addition there are 5 university centres. Despites this number, the universities are generally over populated with few lecturers. Another NUC (2001) website (http://www.nuc.edu.ng/Publications/) states that the total number of universities' lecturers as of 2001 was 5799, while students' enrolment was 116,413. Yet there are still quite a number of qualified Nigerian youth not admitted for university education.
One of the major objectives of Nigeria national policy on education is the provision of "equal educational opportunities to all citizens at different levels of education" (Ali, 1999a, p. 1). Accordingly, the Nigerian higher education institutions are expected to embark on teaching, learning, research and development of programmes, and to establish inter-institutional cooperation and dedicated service to the community, and to ensure that minimum educational standards is maintained (Olujuwon, 2002). This has some implications, among which are:

1. That knowledge acquired should be contributive towards community development and capacity building rather than their mere acquisition,
2. That the universities are suppose to expand access to education to those qualified,
3. That the universities are supposed to promote and facilitate research activities so that knowledge could be up-to-date.

It is sad to note that this laudable policy has not gotten its desired implementation, as observed and reported by Olujuwon (2002), who said that there is "a gap between the policy makers and operators of education that has permeated the entire education system in Nigeria" (p. 4).

This has posed some concern to the federal government so much so that it has to revisit the issue of distance and open-learning education as part of the universities' main agenda (Agboola, 1999; Ali, 199a; Col International, 2001). For this to succeed there would be the need to support this distance education with ICT-related technology not only with multimedia such as television, radio, and video, but also with e-learning solutions (such as CMS).

2.3.2. Teaching, learning and research in the Nigerian universities.

A lot of crises have over the years have bedevilled the Nigerian universities as a result of periodical strikes by the academic staff due to non- payment of salaries coupled with the youthful exuberance of the students, which to a large extent have disrupted the academic calendars of all the Nigerian universities. As a result, there has been a high increase in examination malpractices, cultism, theft, and drug addiction among students (for not being fully engaged in academic activities). Most lecturers are not really into research work, but rather have resorted to the production of handouts and commercial activities instead of writing scholarly books and journals for leaning (Olujuwon, 2002). This is so because, morally a lot of lecturers have been affected and destroyed because of the non-payment of their salaries and/or low payment as compared to their counterparts in developed countries, hence lack motivation to be committed to academic gains. Students have to depend on print handouts in order to pass examinations.
According to Ali (1999a), "facilities for teaching, learning, research and development have not kept pace with the increased demands arising from large student enrolment, public service functions and university consultancy; and that between 1982 and 1995 Nigerian universities lost 793 professors of different disciplines in addition to the unknown number of non-professorial

academic staff. This resulted in a serious brain-drain leading to considerable decline in human and material quality and quantity" (p. 1).
This may explain why some of the Nigerian universities went on to start new distance-learning programmes via what is called the "satellites/extension centres" (Ali, 1999b, p. 2). However observations by educators are that the quality of teaching as well as that of students admitted into these satellite campuses (distance-learning programmes) are poor, this is because of poor facilities such as teaching classrooms which are usually over-crowed with small studios and laboratories; also most of them including the regular distance learning centres have no library; no materials such as pictograms, instructional/teaching modules, maps, video tapes, reference books, course outlines, or computers (Ali, 199a). In order to provide an equitable, cost effective, enhanced access to national resources for sharing locally available resources and libraries all over the world, so as attain equitable development in Nigerian societies as indicated in the Nigerian policy on education, the NUC, through a programme called the Quadrangle-Concept has accepted the responsibility to ensure the implementation of digitizing the Nigerian universities in phases through what it calls the National Virtual Library Project as a component of the Quadrangle Concept. E-learning will also be implemented by delivering teaching and learning through electronic media (http://www.nuc.edu.ng/Quadrangle-concept/Quadrangle-Concept.htm). The good news is that with the implementation of this, it is expected that teaching, learning and research activities through access to up-to-date primary resources materials world wide will be enhanced in the Nigerian universities and the country as a whole. However the problem with Nigerian education has not been the issue of policy but rather with implementation.

2.3.3. Distance and Open University education in Nigeria

What is distance education? According to Col International (2001), "distance education is the provision of education by a mode other than the conventional face-to-face method but whose goals are similar to and just noble and practical as on-campus full-time, face-to-face education"(p. 108). It is characterized by

- a cost-effective system of instruction,
- flexibility, related to time, distance, pace and space,
- being used for a variety of learning situations such as full-time, part-time graduate and undergraduate, certification and continuing education,
- it accommodates diverse learning styles, as it provides access to remote and normally inaccessible underrepresented groups such as women, as well as persons in rural and remote locations via multimedia such as radio, television, video and/or paper printed documents.(Ali, 1999a; Col International, 2001).

In the Nigerian context, distance or Open-University education means a situation whereby people learn by correspondence through print mail, only to come to campus for face-to-face contacts for a few lectures as preparatory towards examinations. "The focus was to make higher education available to working class so that they can study and earn honors at their spare time", (Olujuwon, 2002, p. 4). According to Col International (2001), much is left to be desired in terms of benefits and organization. This is because they still practice the traditional distance education economics, "the economics of scale, meaning distance education units are characterized by over-abundance of course options and under-supply of students" (p. 7). It is important to note that, the success of any educational system hinges not only on policy making, but implementation as well as proper planning, efficient administration, adequate funding, and motivation. For Nigeria universities to attend to its desired goals, government has to re-access and reinforce that:

1. Nigerian Universities must have information and communication technology (ICT) facilities so as to be abreast with the latest information and be in tune with development. This may enhance good academic proficiency and excellence.

2. The inter-institutional cooperation among institutions must be strengthened and reinforced by putting in place a platform or a framework where universities can pull together the resources and expertise of their respective institutions, this will create the desired understanding, cooperation, and good academic outcomes in various issues of teaching, learning and research. This cooperation and interlinkages can in this age be achieved through embracing ICT for academic activities like libraries services, teaching and learning (Olujuwon, 2002).

2.3.4. ICT facilities and the level of computer literacy in Nigerian universities.

There are many definitions or descriptions of ICT. In this context Information and Communication Technology means "Computing and communications facilities and features that support teaching, learning and a range of activities in education (such as administration). The focus is on the subject being taught or studied or the organization being administered, rather than developing pupils' skills with and knowledge of the technologies themselves", (http://www.google.com/search?hl=en&lr=&oi=defmore&q=define:ICT, para. 7). However for one to effectively use and apply ICT facilities appropriately and efficiently, one needs Information Technology (IT). Accordingly, the University of Jos has been designated a Cisco Regional Academy area and will use its installed ICT infrastructure and existing manpower resources for capacity building nationally. The plan is to have ten organizations (sister universities and other institutions as local academies) working with Jos to train technicians for the Nigerian University System and other interested partners (ICT @ UNIJOS, 2002).

Already, FUTY is one of those universities where this plan is implemented. Presently there is a Cisco computer network academy, and it has four Cyber café centres. Furthermore there are some universities like Benin, which has an e-learning centre project which became functional in March 2004. It provides "training for all University staff, access to the Internet and has a network of twenty-two computers, a dedicated Compaq Proliant Server, and relevant software and accessories. In addition to staff training the centre has started developing some educational software programs such as an online course-assignment program, Web-based course assessment program, Web-based computer-aided learning packages, a Web-based course evaluation program, and a Web-based test-questions program" (e-Learning Centre university of Benin, 2005, n. p.).The university has plans to collaborate in developing their facilities and e-Learning programmes in other institutions (http://213.181.87.55/academics/centres/elearning/).

Despite these, it has been observed and reported (Uwadia, 2003) that even as of March 2003, distance education at many Nigerian universities did not include IT education because of the dearth of ICT facilities and personnel. He attributed the problem to IT not being an examinable subject in secondary school, and so most students pass through the high school without any exposure to IT.

In sum, there is general awareness among higher-education communities in Nigeria of the relevance and the uses of ICT-related technology as there are quite a number of Nigerian universities that have some number of Internet access facilities and in addition there are many privately–owned cyber cafés in most of the Nigerian cities and towns. As earlier said, the federal government through the NUC is working on a distributed on-line library system to service higher-education institutions.

2.4. FUTY in Context

In this section after an introduction to FUTY (Sections 2.4.1 and 2.4.2) the problem of lecture attendance (Section 2.4.3) is discussed, the lack of updated primary source materials for teaching, learning, and research (Section 2.4.4) is explained, and the level of computer and network knowledge of lecturers and students (Section 2.4.5), is described.

2.4.1. FUTY's Structure and Programmes

The Federal University of Technology Yola is one of the 25 Nigerian federal universities. It was established in 1981 along with five other similar universities. The aim was to promote the teaching-learning of science and technology related which was in line with Nigerian higher-education's goals as indicated in Section 6 of the National Policy on Education (NPE, 1998) quoted in Olujuwon (2002). These include:

a. "Contribute to national development through high-level relevant manpower training.
b. Develop and inculcate proper values for the survival of the individuals and the society.
c. Develop the intellectual capability of individuals to understand and appreciate their local and external environments.
d. Acquire both physical and intellectual skills, which will enable individuals to be self-reliant and useful members of the society
e. Promote and encourage scholarship and community service
f. Forge and cement national unity and promote national and international understanding and interaction"(p. 2).

The implication of these is that universities should embark on teaching, research and development programmes and maintain minimum educational standards. They are also expected to establish an inter-institutional co-operation and dedicated service to the community (Olujuwon, 2002). That explains why the need for digitalizing the Nigerian higher-education institutions' libraries for the fulfillment of this noble national goal.

For the realization of these goals and to be more of community goal oriented, FUTY is structured into schools as follows:

- School of Agricultural Technology,
- School of Engineering and Engineering Technology
- School of Environmental Technology
- School of Management and Information Technology
- School of Pure and Applied Sciences
- School of Technology and science Education.

This structuring suggests the kind of courses run for the awarding of degrees, although recently, in addition to science, technical and engineering-oriented courses the institution runs programmes such as: Masters in Management and Public Administration studies (MPA), consultancy in computer studies and public administration for awarding of diplomas both on regular and part-time bases.

2.4.2. Teaching and learning activities in FUTY

The number of teaching staff in FUTY is less than 400 while the total number of students both regular and part-time is slightly more than 16,000. This confirms my earlier assertion that FUTY is overcrowded with students more than what the physical and human facilities can accommodate. Teaching in the school is usually organized around the lecture method, on a face-to-face- basis, with practical work in the laboratories for science- oriented courses, small and

major assignments like seminar or term papers or report presentations, and tests and examinations at the end of each semester. This suggests how students are assessed whereby the continuous assessment (CA) is 30% and the examination is 70%. Teaching materials are obtained from library and sometimes from the Internet, but the quality of some these materials is sometimes questionable as the library has no primary and recent resource materials but rather obsolete books and low-quality journals (as explained in Section 1.1) and it is not connected to other libraries as the case in Europe and America, for example the library of the University of Twente, which has connections with other sister universities' libraries and big international libraries for related and relevant teaching and research materials. Furthermore access to the cyber cafés is sometimes difficult for a lecturer as he has to pay for it before he can browse; another problem is that most of the time the computers in the cyber cafés are never free but occupied, this means the computers are of limited number.

This situation could explain why lecturers relay too much on giving handouts to their students in fact students relay more on the handouts than anything else. This is in line with what is explained in Section 2.2.3 above. Because of this situation of poor teaching and inadequate facilities in the school, the lecture attendance is poor and again there is a lack of update primary source teaching, learning and research materials. These are discussed in the subsequent sub-sections

2.4.3. Poor attendance of lectures in FUTY

It has been observed (Olujuwon, 2002) that there have been series of strikes in Nigerian universities. Lecturers as a result of non-payment of salaries, sometimes resort to either becoming contractors, (that is, supplying goods or services to schools) or becoming engaged in commercial business within and/or outside their schools' environments at the detriment of their primary assignments which are teaching and research. In fact some lecturers have gone to the extent of turning their offices into commercial centres either for typesetting services, for private teaching/coaching for extra pay (outside their primary job), or for the buying and selling of items such as cars, and other goods. These practices have caused a lot of disruption in academic calendars which on a larger scale affect lecture attendance by lecturers and/or students. This might be a true situation of FUTY as far as lecture attendance is concerned. Furthermore, even in the absence of strikes some lazy lectures don't attend to their lectures as required and are usually never compensated, except by the giving of handouts which students are forced to read without explanations as they have nothing to depend on for examination in that course, and failing to read the handouts means failing the course. Some students who are workers yet not on study leave find it difficult to be regular in class attendance even if they desire to, this is because of clash of the lecture schedule with some of their official work. Furthermore because the number of students admitted to the regular programme is more than the physical capacities (such as the hostels, lecture halls) of the school can accommodate, most regular students stay off campus and as they live very far away from the school, as a result some of them miss their morning-hours lectures, while in some courses the lecture halls can hardly accommodate students at a lesson. This means some attend lectures outside the lecture halls, and while standing. This usually discourages some students from attending the lecture the next time. The consequences of these are:

- Students result to examination malpractices so as to pass courses where lectures were not well attended.
- Learning is made very expensive for students as they have to depend on photocopying of handouts if they are to pass, and also responsible for their Internet accounts.
- Reports are that some students are sometimes caught in criminal activities such as armed robbery, theft, rape.
- Workers, who would have like to further their studies (lifelong learning) while attending work, can no longer enroll for university's programmes for fear that lecture schedules

might clash with their working hours as there is no provision for distance learning supported by technology.

The implication of these (consequences) is that FUTY as a university established to promote intellectual excellence and the good virtues as stated in the National Policy on Education (NPE, 1998 quoted in Olujuwon, 2002) is not offering the requisite teaching-learning environment for the realization of this noble objective, despite the fact that the institution has four cyber cafés (Internet services). This poses a lot of concern to educators of the school and in particular to the community they are serving, hence a call for an intervention. This is treated in detail in Chapter 4 of this study.

2.4.4. Lack of up-to-date primary source materials for teaching-learning and research

As mentioned above, lecturers obtain materials from library, use old notes from their previous studies, old (outdated) association or societal journals and from recent local journals that were said to be of low quality as most of the items may contain repetition of ideas from either the old books, or old journals from the library or with a few from the Internet. This is in line with Itegboje and Okubote (2002), who observed that there has been a persistent lack of up-to-date primary source materials such as journals, periodicals, and recent research articles both for teaching and research work in most of the Nigerian universities, and even if there are some available they are of low quality. This is largely due to the lack of Internet connectivity in most of the universities, lack of motivation on the part of lecturers, and the fact that students don't have access to the Internet either that of the school to which they belong even if it has Internet and/or to the ones outside the school, because they cannot afford to pay for access to the cyber café.

FUTY has four cyber cafés, but lecturers and students have to pay before they can browse, this has affected a lot of students who cannot afford to access the Internet as desired, and that lecturers only go for materials that would equally be used for commercial reasons like sourcing materials for handouts, private coaching, and not necessarily for research purposes. Furthermore because of the limited number of computers connected to the Internet most lecturers are discouraged about browsing as the computers are always engaged.

2.4.5. Level of lecturers' and students' computer and network knowledge

In this section the lecturers' and students' levels of computer and/or network knowledge as it relates to the use of ICT-related technology is described (see Section 2.3.3). FUTY has four cyber cafés with 10, 31, 20, and 20 computers (respectively) using VSAT with KuBand and CBand. In addition it offers degrees in computer science and information technology. Also in FUTY there is a Cisco six-month part-time network course where lecturers, students and other people could register. This situation may suggest that quite a number of the lecturers are computer and possibly network literate. However, the Cisco programme appears to be expensive, and so only a few lecturers (those from computer science and information technology) have attempted to do the course.

Though most students may not have an idea of networking, they should be able to know how to e-mail and how to browse except perhaps the few who could not afford access to the cyber cafés, but this number is negligible. It might not be wrong to conclude that generally the stakeholders are computer literate in their own rights. What is certain is that the knowledge of how to use an e-learning-related technology like CMS may be considered very low as there is no evidence of experience with it at the current time.

2. 5. Conclusion

From this contextual description of FUTY, it is clear that there are many problems with teaching-learning activities in the school for the following reasons:

1. The lecturers are few attending to many students
2. Because of poor organisation of lectures as a result of inadequate lecture halls, hostels, accommodation, ICT facilities and the non-use of any multi-media as technology support, lectures are not well organized and sometimes not well attended.
3. There are not enough primary motivating resource materials for assignments, teaching-learning and research work.
4. Lecturers and students are responsible for their Internet accounts which make it difficult for students to access the cyber café available in the school
5. That as a result of 1-4 above, learning is of low quality in the school, and this means production of low sub-standard candidates for the Nigerian labor markets.
6. Perhaps these reasons could explain in addition to other reasons why most of the Nigerian universities' graduates are not employed.

This situation calls for immediate intervention if learning is to attain its basic goals and to be part of the "Knowledge age" and of course of the world economy society, hence the need for the school to adopt the use of e-learning related technology like CMS for the support of her teaching-learning activities. The benefits, the whys, and the hows of CMS technology are discussed in Chapters 3 and 4 respectively.

3. Review of Literature

In this chapter a review of literature as it relates to the following is made:
Technologies for supporting lectures and learning (Section 3.1) are explained, CMSs, overview and examples (Section 3.2) are described, CMS as support or substitution for lectures (Section 3.3) is discussed, issues related to the use of a CMS in higher education (Section 3.4) are discussed, characteristics of a scenario for using CMS for the identified problems (Section 3.5) are described, a conclusion (Section 3.6) is drawn.

3.1. Technology for Supporting Lectures and Learning

In this section a brief description of technology and in particular ICT and the various types of ICT related technologies used in some other higher institutions of learning for the support of teaching-learning related activities are noted.

3.1.1. What is technology?

According to Soanes (2001), technology "is the application of scientific knowledge for practical purposes or a branch of knowledge concerned with applied sciences" (p.860); on the other hand the World Bank Group (n. d.) considered technology as "a mechanism for distributing messages, including postal systems, radio and television broadcasting companies, telephone, satellite and computer networks" (para. 15). Furthermore the National Institutes of Health U.S. (2004), website (http://www.nlm.nih.gov/nichsr/hta101/ta101014.html) describes technology as the "application of scientific or other organized knowledge--including any tool, technique, product, process, method, organization or system--to practical tasks" (para. 55). Accordingly, in the light of the above definitions and in the context of this study, technology would mean an electronic (multi/hyper media, computer networked) application or procedure or a tool that can be used to support teaching and learning activities. In a nutshell, it would mean the integration of ICT in education.

3.1.2. Technologies for supporting lectures and learning

Over the years and on a continuous basis, efforts have been made by many researchers and practitioners of education to develop means by which learning can be made more simple, effective, affordable and accessible to all categories of learners independent of their geographical locations, time and pace. This is meant to encourage those who for one reason or the other (as nature may have it) might not be physically present at lectures (sometimes or at all times). From literature the following are some examples (a few out of many) of some electronic media/hypermedia used in some higher institutions at different times and in different countries for the support of teaching and learning activities.

The UWA iLecture

This is an automated "lecture recordings system" developed over time by the University of Western Australia (UWA) for capturing live lectures and delivering the same over the Internet so that students could access recordings of lectures on the Internet via the iLecture. The goal was to make learning more flexible and in ways that individual learner's changing needs /expectations are met with ease (Fardon & Ludewig, 2000). These researchers carried out a survey study in order to find out the efficiency of this tool, as a result of their study the following were discovered:

-That although students (who for instance had timetable clashes, illness, or other barriers) increased their access to course information, and their efficiency in Internet use for other activities, not all students were able to use it effectively. This is so because it was reported that about fifty percent of those who for one reason or the other could not access the recordings

lectures via the iLecture due to some technical reason (such as not able to download the recordings of lectures).
On the other hand the lecturers indicated that the iLecture was valuable for teaching and learning as it increased students' access to lectures' materials particularly for those who might be absent (due to either time-table clashes, illness or other barriers), and also they use it for discussion lists, PowerPoint presentation and getting web references. However they expressed their inabilities to embrace the technology with its opportunities for lack of time and financial constraints, and also for the fact that the recordings could not provide all visual material used in the lectures (Fardon, & Ludewig, 2000).

Rethinking Education at Delft University of Technology

This was an expression of how an ICT project adopted by the University for the Support of teaching and learning was experienced. Rethinking education implies "have to think of completely other means of education" (Santema & Genang, 1998, para.17).
The first instrument developed by the university was the e-mail as a means of having an interactive communication with its students, later they used video conferencing so that discussion with the remote students became possible, then after the university developed a web site in which a course was put on the Internet (on-line) using the old WebCT version (Santema & Genang, 1998). By this, students participating in a course could access learning materials of a subject of their interest on-line anywhere on the site. This made the students very enthusiastic, interested and motivated, so much so that students' performance increased tremendously. On the part of the teachers they became more active as they had to respond to students' e-mails at any time unlike before where they would wait until during lecture sessions when they had to meet with the students. It also made the teachers to be more creative or else they might not get their students' attention. As a result of this, the teachers were also challenged to seek for more ideas and knowledge of the courses they were teaching. This is because knowledge was made available any time and anywhere to their students, so a teacher must know much or else he/she could be challenged by a student in lecture sessions by a question or comment that might throw him/her off balance. The implications were that students took more responsibility for their learning/studies, while on the other hand the role of a lecturer changed more and more from being an instructor towards being a mentor or a coach or both in learning. Furthermore examinations became old fashioned by this new approach as students had to make cases and write a report at the end of a course.
Thus learning became more flexible and fruitful (Santema & Genang, 1998).

Internet Teaching by Style

This was a use of on-line teaching by lecturers at the University of Black Hills in the USA.
Fuller, Norby, Pearce, and Strand (2000) carried a pilot study on the effect of the use of the profiling instrument called "Internet Teaching by Style" on users particularly teachers and also to find out the success of focusing on different teaching styles for on line courses, with a view to develop programs that would assist others in successfully transitioning them into the cyber-teaching and learning environment.
The results of their study show that more than 50% of the respondents were excited, stimulated but also frustrated yet admitted that the time and efforts invested in using the video, or satellite, or television delivery system and/or the Internet to deliver their lectures was worth it. However, the results further indicated that the use of media for on-line teaching might not be suitable for all categories of lecturers particularly the extreme extrovert (who would always like to interact and socialize with his students through face –to-face contact) and also for some other courses (English language, communication skills).

There are many other examples not mentioned here of how other institutions started the use of technology to support teaching-learning process, but from these few examples, it can be seen that

the advantages of the use of technology for the support of teaching and learning outweighed its disadvantages (although depending on which type of the ICT used, how it is designed, used and for what). This informed the researcher's decision to discuss in the subsequent sections more on Course Management Systems (CMS) as an alternative technology tool that would be fit for support of the teaching and learning activities in a university and in particular FUTY-Nigeria.

3.2. CMSs, Overview and Examples

Many educators are attracted to teaching because they want to communicate excellently about the subjects they are passionate about; yet, there has never been enough time to cover all they want in a semester (this is true of the Nigerian universities where strikes have become the order of the day which then adds to the problem of poor lecture attendance). With the advent of e-learning related technologies like Course Management Systems (CMSs) much has been improved with respect to access (time & distance), and quality and cost factors in teaching and learning related issues in institutions and organizations alike(Ullman & Rabinowitz, 2004; Westhead, 1999; WebCT, 2003a). The implication of this statement with respect to FUTY's problem of poor lecture attendance by students and sometimes by lecturers which is largely attributed to lack of time on the part of students who are at the same time workers and also those who stay off-campus, the adoption of a CMS as a tool for the support of teaching –learning would to some extent alleviate this problem. Furthermore it would also serve as a means for providing up-to-date primary source motivating materials for teaching and learning. This is discussed in the subsequent sections of this chapter, and in particular in Chapter 4, in which the New-style Lecture Scenario supported by a CMS is described and discussed. In this section, a further definition of CMSs is given and some examples shown.

3.2.1. What is a CMS?

According to Ullman and Rabinowitz (2004), a CMS is "Internet-based software that manages student enrollment, tracks student performance, creates and distributes course content and that in this way instructors are enabled to extend their classroom teaching beyond its traditional boundaries of time and space", (p. 1). Collis and Moonen (2001) describe Course Management Systems (CMSs) as:

> "World Wide Web (www)-based systems which are comprehensive software packages that support some or all aspects of course preparation, delivery and interaction, and allows these aspects to be accessible via a network. Such systems in broad terms offer tools for Computer-mediated communication, tools for manipulation and navigation within course content and around various features of the System, and tools for available learning support, tools for course management, tools for keeping tracks of students and their records and to management security and access; tools for students assessments and feedback , authoring tools, tools for communication between instructors to students and vice versa, student to their peers. All these tools for students and instructors are made available via a uniform www-based user interface" (p. 78).

From these definitions one can say that CMSs are some of the e-learning solutions designed for the purpose of course materials' preparation, organization and delivery; tracking of students' records and performance, and support of feedback; facilitation of collaborative learning and /or task based learning among students either through asynchronous and /or synchronous communications. Thus it supports on campus, blended and/or pure online modes of education.

3.2.2. CMSs used in higher institutions, and their general characteristics

According to Leslie (2003), "the edu tools website: http://www.edutools.info/course/ compare/all.jsp as at September 2002, has a web-based database containing independent reviews of 45 CMSs with 41general features" (p.1). However for the purpose of this study, four of these CMSs will be considered as examples, not because they are the most important, but rather because they are the most popularly used in Europe and particularly in the Netherlands's universities, while one is an open source. These include: Blackboard; WebCT; TeleTOP, and Moodle. It is neither worth mentioning here that the researcher's intention is not to compare nor to analysis the various types of CMSs but rather to give some examples as they relate to the New-Style Lecture Scenario Supported by a CMS.

Blackboard

According to the description on the Web (http://www.blackboard.com/worldwide/nl/ en/index.htm), this is a CMS "used daily by organizations/institutions usually dedicated to teaching and learning, the Blackboard Learning System provides an enterprise-critical online environment to complement and supplement the traditional classroom, pure distance learning, and blended learning programmes. It enables users to experience the system in their preferred language(s) or location(s). This is because the multi-language functionality of the system permits a culturally enriched and tailored online setting for all users. The platform is fully Unicode-architected, enabling the system to recognize content written in virtually any language as determined by the end user, instructor or system administrator. The content of the system enables every student and faculty member to manage their own internet-based file space on a central system and to collect, share, discover and manage important materials from articles and research papers to presentations and multimedia files. It includes a set of Web applications for managing student career and evaluation portfolios, integrating content with campus course management systems, maintaining version control of digital assets, tagging, searching and reusing learning objects and more" (Blackboard Netherlands, 2004). In addition to learning and content systems it has other functions such as Community System services, Global Services, Building Blocks services and Documentation http://www.blackboard.com/ worldwide/nl/en/index.htm. Figure 2 describes the Blackboard's academic suite's front page.

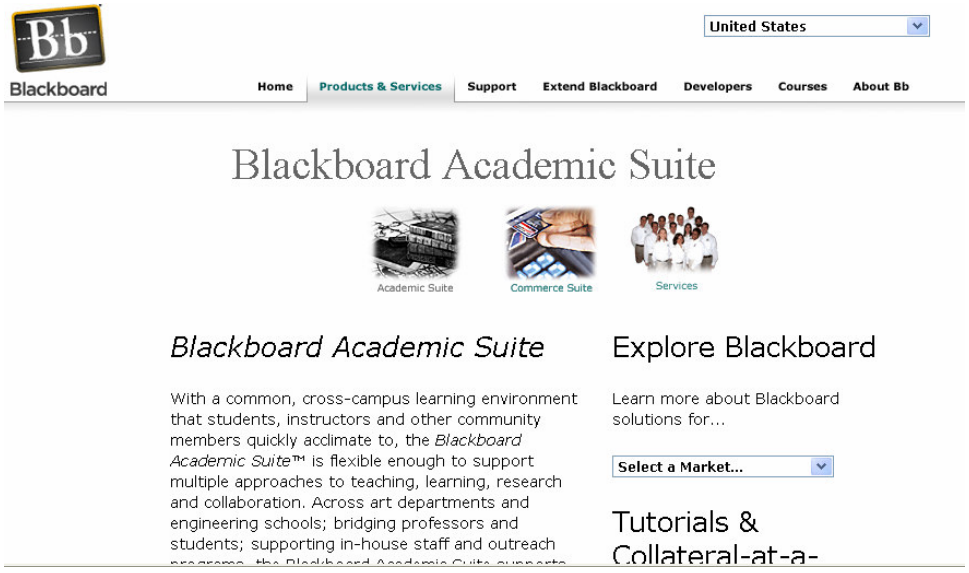

Figure 2. The Blackboard Academic Suite front page (adapted from Blackboard Netherlands, 2004).

Web CT Campus edition

Likw a Balckboard a WebCT is a CMS used to facilitate the creation of web-based educational environments.

According to its website's (http://www.webct.com/service/ViewContent?contentID=16968431) descriptions,

> "it can create entire online courses or provide course materials on the web that enhance existing face-to-face courses. It allows for more advanced components and class features. Faculty course builders can use it to build online bulletin board and chat, students progress tracking, group project organization with it instructors can import e-Packs into their existing courses without over-writing what has been created for them. With WebCT Campus Edition 4.1; students can request temporary access to an e-Pack -- allowing them a 15-day window to engage with the course. This simplifies start-of-term administration by allowing students to view course material prior to purchasing an access code for the course" (WebCT, 2003a, p. 1). Figure 3 shows how the WebCT 4.1 front page looks.

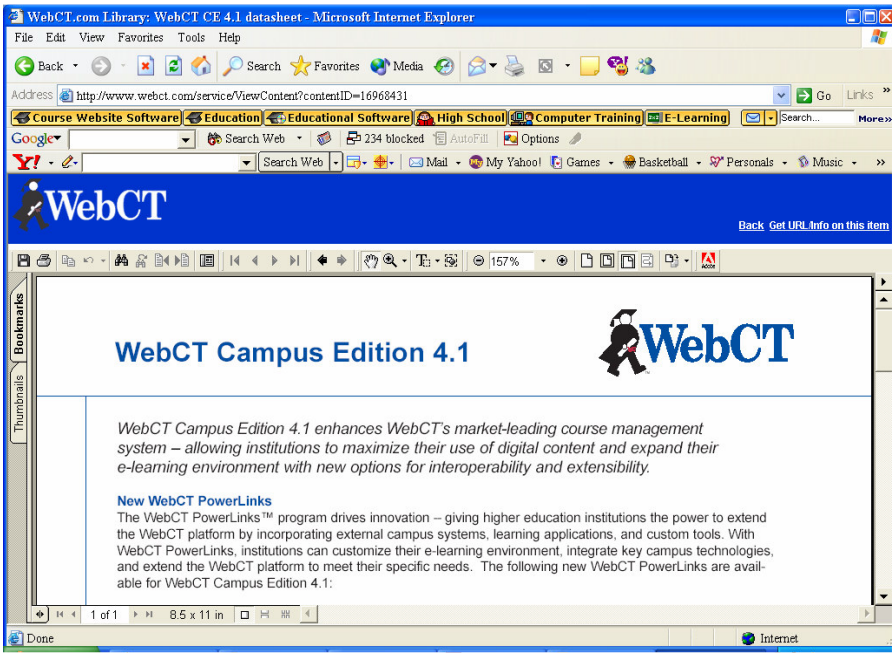

Figure 3. WebCT front page (Adapted from WebCT , 2003b).

TeleTOP

This is the CMS software used by the University Twente, Shell EP, and other institutions/organizations both in and outside of the Netherlands. Just like Blackboard, WebCT and other CMSs not mentioned here.

According to its Web site's (http://TeleTOP.edte.utwent.nl/) description, it provides:

> "Ease of use and flexibility in teaching and learning activities. With integrated approach, products, services are customized to organization's needs enabling users to enjoy the much functionality available and also the possibilities of effective e-learning within their own learning environment. It focuses on enabled learning, and promotes practical and academic research so as to explore new technological possibilities and educational applications. To maximize the effectiveness of this process, the providers work in close co-operation with user groups, educational scientists and technicians. Its architecture is based on IBM lotus web technology, hence it is robust, scalable, flexible, customizable,

open and functional" (TeleTOP B.V., 2004). Figure 4 shows the front page of the university of Twente's TeleTOP environment.

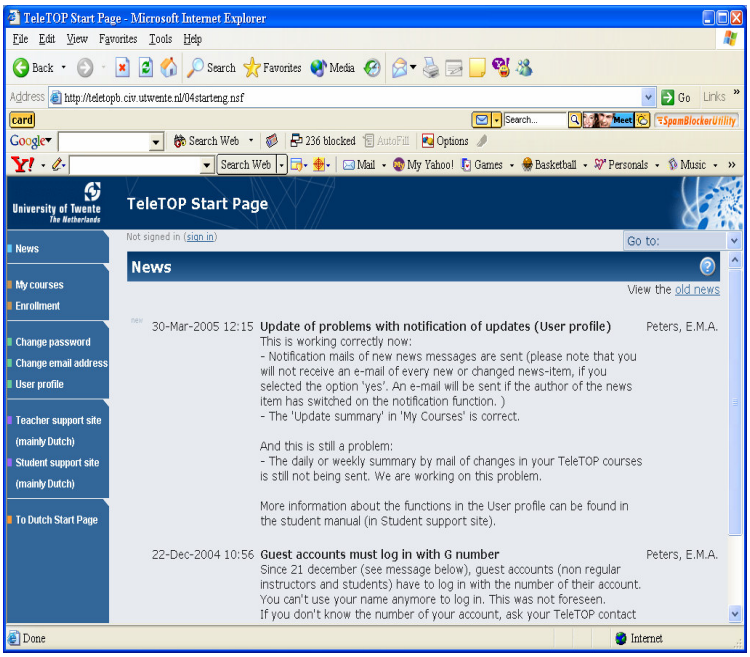

Figure 4.TeleTOP front page (adapted from TeleTOP 6, 2004).

Moodle

This is an open source CMS. By open source it means an institution/organization is free to download it, customize and/or modify it and even distribute it (under the terms of the GNU General public license). "It is a software package designed to help educators create quality online courses. Moodle has almost all the characteristics that other CMSs have. Just like the Blackboard, it has multi-language functionality which permits a culturally enriched and tailored online setting for all users. Its main advantages over other systems is its strong grounding in 'social constructionist pedagogy'" (this means a teacher takes a role of either a facilitator, or a mentor, or a guide to learners who collectively construct their own knowledge according to their needs), it promotes collaborative learning centered approach" (http://moodle.org/).
Figure 5 shows the front page of the Moodle environment.

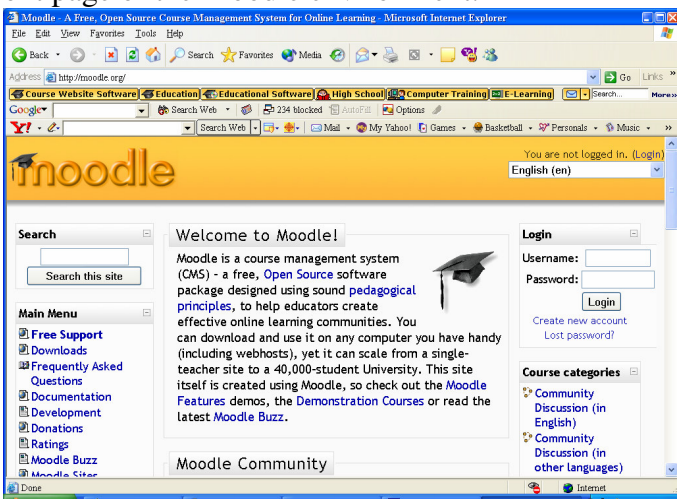

Figure 5. Moodle front page (Adapted from http://moodle.org/).

3.2.3. CMSs and their general features

As a result of reviewing 45 CMSs on 41 features, the researchers at Edutools quoted in Leslie (2003,) were able to form lists of some of the common and not so common features of these systems. Table 1 shows the 41 general features called the Edutools CMSs 'features set, Table 2 shows the top 15 common features supported across these systems, while Table 3 describes the 5 most unpopular features respectively as analyzed by Leslie.

Table 1. Edutools CMSs' feature set (Adapted from Leslie, 2003, p. 4).

Learner Tools	**Support Tools**	**Technical Specifications**
.Communication Tools	**.**Administration Tools	
-Discussion Forums	-Authentication	**.**Hardware/Software
-File Exchange	-Course Authorization	-Client Browser
-Internal Email	-Hosted Services	-Required
-Online Journal/Notes	-Registration Integration	-Database Requirements
-Real-time Chat	**.**Course Delivery Tools	-Server Software
-Video Services	-Automated Testing and Scoring	-Unix Server
-Whiteboard	-Course Management	-Windows Server
.Productivity Tools	-Instructor Helpdesk	**.**Pricing/Licensing
-Bookmarks	**-**Online Grading Tools	-Company Profile
-Calendar/Progress Review	-Student Tracking	-Costs
-Orientation/Help	**.**Curriculum Design	-Open Source
-Searching Within Course	-Accessibility Compliance	-Optional Extras
-Work Offline/Synchronize	-Course Templates	
.Student Involvement Tools	-Curriculum Management	
-Groupwork	-Customized Look and Feel	
-Self-assessment	**-**Instructional Design Tools	
-Student Community Building	-Instructional Standards Compliance	
-Student Portfolios		

Table 2. Top 15 common features supported across the CMS products (adapted from Leslie, (2003, p. 4).

Most Common Features	No. of Systems	Percentage
1. Discussion Forums	41	91.11%
2. Registration Integration	41	91.11%
3. Internal Email	39	86.67%
4. Authentication	38	84.44%
5. Real-time Chat	34	75.56%
6. Orientation/Help	34	75.56%
7. Group work	34	75.56%
8. Self-assessment	34	75.56%
9. Course Authorization	34	75.56%
10. Automated Testing and Scoring	34	75.56%
11. File Exchange	33	73.33%
12. Calendar/Progress Review	33	73.33%
13. Instructor Helpdesk	33	73.33%
14. Searching Within Course	31	68.89%
15. Student Tracking	31	68.89%

Table 3. Five unpopular features, not supported by most of the CMSs (adapted from Leslie, 2003, p. 4)

Features	No. of products supporting
1.Video Services	7
2.Student Community Building	17
3.Whiteboard	16
4.Curriculum Management	10
5.Open Source	10

Based on the previous descriptions of CMSs, a summary of the general features and respective functions of an ideal CMS that would fit the learning culture of Nigeria institutions and in particular FUTY is given in Table 4. The inclusion of other features like Whiteboard and Video services (though not common) is informed by the fact that FUTY is a science, technical, engineering and technology biased institution, furthermore it also caters for rural students and hence the inclusion of video services as one of the basic features necessary if a CMS is to be used for its regular and distance education programmes.

Table 4.Common features of an ideal CMS for the FUTY and their functions (adapted with Additions in italic from Edutools, 2004, p. 4).

Common Features	Functions
1. Discussion forums	*This is a tool for discussion among a lecture and his students and/or among students and their peers. It can be viewed by date, thread, author, and group or by topics as defined by the lecturer concerned.*
2. File exchange	This is a student's private folder into which he/she can upload and download files, submit assignments using drop box, share the content of his personal folder with his/her lecturer and/or peers.
3. Internal e-mail	Student can use this to email individuals and/or groups
4 .Real-time Chat	This supports private messages, student can use it to ask either his mates questions and/or his lecturer, and response is given instantly to him/her.

5. Orientation/Help	This is a tool whereby online courses that describe the role of students in the use of online facilities and how, are stated (online student guide) it specifies time management and how to access the system help- *On-line manual*
6. Groupwork	A tool for assigning students to discussion forum groups, assessments or group-specific course content, *students can post any kind of discussion here as well, or upload some relevant learning materials for the group either assignment purposes or other wise*
7. Self-assessment	Tools for creating self-assessment by lecturers, lecturers' created feedback can *be displayed and be viewed not necessarily by the lecturer alone but by students as well.*
8. Course Authorization	Lecturer can assign different level of access to his/her course on the following pre-defined roles: lecturers, students, and guests *in collaboration with the system administrator*
9. Automated Testing and Scoring	Tools for lecturer to create automatically scored multiple, true/false, fill-in-the blank questions, and be able to communicate results to students
10. Calendar/Progress Review	Tool for students to view all their assignments, deadlines, and due dates in their personal online calendars
11. Instructor Helpdesk	A tool for lecturers to access online lecturer's support manual
12. Searching Within Course	This is a tool where by a student can use to search within the courses content he/she has registered for. Usually It has links with websites for effectiveness of accessibility
13. Student Tracking	Tool for lecturer to get report (Overview) showing the number of times, time and date on which each student accessed a course or course units. Lecturer can summarize all discussion posts to -date by a group or by a student *(Lecturer class administrative tool)*
14. Registration Integration	Tool for students' self-registration in a course. Administrators can batch and add students to a course using delimited text file.
15. Authentication	*Tool used by a lecturer to protect access to individual course using username and password or by the system administrator to control unauthorized persons access to the system*
16. Whiteboard	This tool supports mathematical and scientific symbols, PowerPoint slideshows, graphing, polling, group web browsing and instructor's moderation, supports for vice chat, support for instructor to broadcast one-way audio presentations, etc.
17. Video Services	Course developers can integrate streamed real audio and video into a course

3.2.4. The CMSs and their general uses

According to Collis and Moonen (2001, p. 19), six major educational uses of www-based technology applications can by identified as shown in Table 5.

Table 5. Major educational use of technology applications which can be integrated within a CMS (from Collis & Moonen, 2001, p. 19).

Major educational use	**Examples of technology applications**
1. Publication, informatic dissemination	Word processing; HTML editors; WWW sites and the browsers to access them, WWW sites associated with database environments; software to facilitate file transfer and document attachments to e-mail; tools for cross-application format retention (i.e. pdf).
2. Communication	E-mail systems, computer-conferencing tools, including WWW boards and other forms of WWW-based conferencing; WWW sites offering communication options for the direct sending of e-mail and forms for structured communication; software for Internet telephony; software environments for audio-video desktop conferencing, for voice-email, for creating video attachments for e-mail; software systems for text-based chat.
3. Collaboration	Groupware, which includes application-sharing software, shared workspaces, WWW-based shared workspaces, WWW-based application sharing, workflow tools; WWW sites designed for collaboration support; tools to allow collaborative writing on documents that are then commonly available to a group.

4. Information & resour handling	CD-ROMs with resource collections, which may or may not be linked with a WWW site; WWW -based search engines; distributed database systems (WWW- and proprietary); WWW sites designed for information organization, access and sometimes creation; tools to retrieve and display distributed multimedia resources stored as digitized audio and video (including streaming audio and video).
5. Specific for teaching learning purposes	Stand-alone software for tutorials, simulations, electronic workbenches, demonstrations of processes, collections of resources; interactive software (such as tutorials, quizzes, simulations) stand alone or accessible via WWW sites; computer-based testing systems; video-capture tools for lecture or presentation capture; video-conferencing (point-to-point and multicasting) for lecture participation; WWW-based pages or environments
6. For course integration	WWW-based course-support (or management) systems.

In view of Table 5, the general and specific uses of a CMS can be summarized as follows:

- It can be used to create entire on-line courses to simply publishing materials that are used in existing face-to face lectures.
- It can be used to provide students with course materials in web page, PDF, MS Word, or PowerPoint formats.
- It provides students with web page creation, built-in chat and on-line discussion capabilities, e-mail, collaborative or group work facilities, management areas, assessment creation and automatic grading, grade book, distribution, class management features (such as calendar, tasks), and a digital drop box for students to submit assignments, student progress tracking, group project organization, student self-evaluation, grade maintenance and distribution, and course content searches.
- It can be used to support enriched interactive educational communication on the web, and offer enhanced support to teachers and learners.
- It provides learners with a website for an online study guide, and individual sites that learners can build themselves.
- Its communication tools can be used to facilitate interaction and communication among learners, this fosters knowledge acquisition, understanding and sharing among the learners and lecturers as well.
- It can be used to facilitate collaborate (group) learning to enable learners and lecturers to get maximum learning out comes (Leslie, 2003; CMS@DuFAQ, 2003).

In sum, a CMS can be used by an institution for:

1. Expanding access to education.

Worldwide there is a shift away from traditional learning towards open learning, thus expanding access to education promotes open learning which implicitly means flexible learning, as it would encompasses a range of distance and face-to-face delivery approaches (WebCT, 2003a). Generally, institutions in Nigeria and in particular FUTY are confronted with the challenge of expanding access to education. The demand for increased access comes from a number of factors such as: increasing percentage of the population participating in education; workforce retraining for a dispersed population; population growth; global demand and opportunities for specialized programs (WebCT, 2003a). This has posed a lot of concern to lecturers and educators in the school. For the purpose of reaching students who desire to further their studies but are constrained by time, the use of CMS can reach such students who can't come to campus via CMS' web site. This means preparing to support students for life-long learning. The benefit is that, more learners are accommodated within the given physical infrastructure.This will further increase flexibility related to time and distance which has been a

major problem contributing to poor lecture attendance by students. It has been observed (WebCT, 2003a), that "e-learning technology is a proven way to expand virtual rather than capacity without the capital outlays for new construction, and that institutional infrastructure can be built virtually rather than physically often at lower cost" (p. 1). Thus expanding access to education as it relates to CMS would mean:

- Reaching students who can't or wouldn't have come to campus for learning
- Accommodating more learners within the limited physical and human facilities available.
- Offering support for life-long learning as flexibility with respect to time and distance is increased.
- Increasing an institution's enrollment, this would mean more income for the school over time, i.e., a positive return on investment (ROI). Although this may take a long time and also will depend on the number of users.

2. Enhancing excellence in teaching and learning

The use of a CMS complements the efforts of lecturers, (making them more productive), as lecture materials can always be made available to all students including those that were not able to attend face-to-face sessions and/or distance students. Such materials can further be reused for the next session with little or no modification at all. These aspects lead to:

- Improved productivity with high quality as the use of such technology can enhance efficiency, effectiveness and competency among lecturers; this would mean increased academic excellence, not immediately but with time (over time).
- Information and knowledge worldwide are made available via a CMS's web sites to students and instructors, thus promoting research activities among lecturers and students and/or the university community as a whole.
- Offering blended learning (mixed mode courses) gives others the opportunity to learn at pace and without much stress, and the social isolation suffered by distance students is blended by such periodic interaction with lecturers and mates when on campus.
- Web-based instruction replicates and virtualizes all the keys of learning activities that occur in the traditional classroom-based and distance education environments
- Re-distributing excellent learning objects that would be always available in the course site's archives and web-links areas. These can be found using the search engines mechanisms available on the Internet. This has to be controlled or else one can waste time and at the same time only get rubbish. This therefore calls for an orientation by either the mentor or a librarian, so that students know how to locate materials from the net.

Thus one can conclude by saying that using CMS can remove or lessen many of the barriers that usually exist between contact learning and distances learning as both converge through the use of communication tools that are always available on the web.

Using a CMS as support for blended mode education reduces the social isolation that was originally equated with distance learning. Increasingly, the web supports and enhances teaching-learning processes and/or in some instances, presents fully online courses catering specially for distance learners and international students. Since it has provisions for online tracking students' progress, feedback facilities are made available to both lecturers and students.

3.3. CMS as a Support or Substitution for Lectures

According to Leslie (2003) "web-based technologies should be used as an extension of learning, and its use in institutions should not replace the face-to-face contact but rather be used as a

support and to reinforce ideas. The web should not replace the teacher since the majority of learners need supervision, support and assurance that they are cared for" (p. 21).This is true for Nigerian undergraduates, and even for the life-long learners who because of their cultural set up would also like to seek for lecturers' advise and approval for all of the learning they do in their studies.

Thus the use of web based systems poses some opportunities but also some challenges to the changing roles of learner and lecturer. For instance the Learners have to take the responsibility for their learning/studies either independently or collaboratively as they engage in learning and knowledge generation (i.e. enhanced self- directed study), while on other hand the lecturers have to change their roles from being instructors and/or information officers to that of being a mentor, a facilitator or a coach and /or a guide, with a view to structuring learning opportunities for the benefits of the learners. This means changing from lecture-centered method to learner-centered approach.
According to Westhead (1999), "in education, the www-based training offers the opportunities to enhance traditional courses, encourage life-long learning and enable a more flexible, self-paced approach to suit the needs of disadvantaged members of the society or people returning from career breaks. These, opportunities are reflected in the current explosion in the use of the Web for teaching and learning" (p. 4).

Thus an instructional technology support tool like a CMS can only be a means rather than an end to address the higher education challenges of access, quality and cost, and it is a support and not a substitute for lecturers as wrongly assumed by some instructors that usually think otherwise about the system (WebCT, 2003a). Harley and his colleagues quoted in Guri-Rosenblit (2003), observed that:

> "both students and academic faculty seem to like the traditional classroom encounters, even when given the opportunity of being exempted from attending a class, and provided with all the needed materials and assignments online for example in the UC Berkeley study, carried out by Harley to examine the impact of technology enhancement in large chemistry courses, it was found that only 16% of the students would be willing to watch lecture web casts entirely online instead of going to the lecture hall. 84% of the students indicated that they prefer to attend the face-to-face encounters, even though they could have studied all the materials, conducted all of the experiments and watched the video-taped lectures at home, and that many forecasts that predicted the replacement of the campus university by the new technologies have not been substantiated at all in reality, and so the traditional styles of learning and teaching still reign dominantly in most higher education settings today" (p. 14).

Thus CMSs are mostly used as support and not as substitution for instructors' face-to-face lectures. The needs of humans to socialize is a most essential one, and it explains why most students prefer to study in classrooms and lecture halls, even when provided with the opportunity to get videotaped lectures, exercises and intimate tutoring through the electronic media. This is typical of undergraduate students who usually constitute the majority in an university's learning environment. Furthermore, it is not only students in campus universities, but also many students at distance teaching universities prefer face-to-face tutorials as compared to online tutoring (Guri-Rosenblit, 2003). Ryan quoted in Guri-Rosenblit (2003) observed that,

> "even in corporate and the business world, many prefer hybrid courses, and that there is an apparent resistance by many students to the notion of exclusively online education. One demographic group targeted by many universities is the busy professional unwilling to commit to weekly classes and highly mobile in work patterns. Specifically for this group, a hybrid model emerged, combining online communication/resources with intensive residential periods on campus to engender group cohesion and social learning. A prominent example is the Global

MBA from Duke University's Fuqua School of Business; furthermore there is accumulated evidence that e-learning is rarely used as a stand-alone model in the corporate world, for instance a European Study found that only 15% of some companies using e-learning preferred a stand-alone approach, with the majority opting for greater online interaction and use of e-learning is to prepare for and reinforce face-to-face provision" (p. 7).

In sum, though the choice and use of software depends largely on the features and characteristics of the learning environment, an environment in which computer-based learning is purely self-accessed with no guidance/mentoring by a lecturer is not recommended, but rather a strong blended mode of education as opposed to pure online learning, this is supported by the examples in Section 3.1.1.

3.4. Issues Related to the Use of a CMS in Higher Education

In this section issues related to experiences with introducing CMSs in a university as they relate to the institution, lecturers, and students' involvement are discussed.

3.4.1. The universities

According to Guri-Rosenblit (2003), "the role of universities is to assist their students to develop their learning styles, to construct the relevant knowledge for their lives, and to cope with knowledge, values and norms in a changing world by providing them with adequate tools" (p. 10). However in introducing new technology, certain questions may arise, such as: "Can the technology improve the cost effectiveness of education and training in the institution? Is online delivery the better alternative, and is it able to lower costs and widens access while at the same time lifting desired quality of the learning experiences and improving learning outcomes? Can learning effectiveness be increased, or more students taught to the same level or better for the same level of cost?" (NCVER, 2003, p. 3). Answers to these questions have partly been given in the preceded sections and are more discussed in Chapter 4.
However, Guri- Rosenblit (2003) observed that ICT-enhanced technology has the potential to overcome universities' problems; this is so because technologies like CMSs provide unlimited access to all kinds of information for all categories of students at different levels of education. He goes on to suggest that undergraduates and distance learners (life-long and international students) use its endless information resources for preparing home work, assignments (either major or minor), examination and research work; furthermore millions of students, lecturers and others use it for its e-mail, chat groups and other formats for telecommunications not only for teaching-learning related activities but in their social and/or work lives as well, both at local and global levels.

The question is what is the role of an institution in introducing and using an ICT-enhanced technology like the CMS? In attempting to answerer this question with respect to Nigerian universities and FUTY in particular, certain facts have to be considered.

1. The institution has a vision, mission and goals based on the Nigerian policy on education cited in Chapter 1 that it desires to meet,
2. It has problems of lack of expansion because of limited infrastructural facilities and human resources i.e., the school is overstretched, even though only a little fraction of qualified students that applied is usually admitted,
3. Poor lecture attendance is a problem, relating to social and academic ills like theft, rape and examination malpractices,
4. There is lack of up-to-date primary source motivating materials for teaching-learning activities, resulting to poor academic performance consequently producing low-qualified man-power (half-baked graduates) for the Nigerian labour market,

5. Part-time/distance education not properly organized, resulting in students complaining as a result of poor scheduling of lectures and insufficient materials for learning by the part-time students.

Brewer (1998) quoted in O'Neill, Singh, and O'Donnghue (2004), observed that traditional universities needing to move towards virtual learning require a fundamental change in the structure of the institution, this is because a growing number of higher education institutions exist only in cyberspace, while ideally the virtual learning experience is an online learning programme sponsored by an established university. This is true of most Nigerian universities that have ICT facilities; most of them use them for commercial purposes, as both the students and the lecturers are responsible for their Internet accounts for the cyber cafés established in their respective universities. The institution based on those listed facts above can now take a decision in accordance with the support that students and lecturers, without loosing sight of cost effectiveness and the desired academic performance.
In my opinion, the issues raised above calls for the management to think, plan, and manage well for the adoption of a new approach to teaching supported by a CMS. Furthermore in the view of Itegboje and Okubote, quoted in Section 1.1, the problem might not necessarily be lack of technology or funds for its implementation (meaning e-learning), but rather the will and determination on the part of government and particularly the managers of universities education. Researchers such as Guri-Rosenblit (2003) noted that,

> "the growing use of the ICT in higher education led already, and this trend is likely to intensify in the future, to a growing collaboration between the academic and the corporate worlds. There are clear trade offs that these two worlds can offer to each other. Universities have the research facilities and the human capital to both advance the development of the new technologies and to assist in their effective utilization in various societal domains, and the corporate world has the necessary funds, as well as major intrinsic interests to invest in research on ICT" (p.14).

This means the university can go in partnership with corporate organizations and/or some ICT vendors for the deployment of a CMS. Moreover there are many open source CMSs that are readily affordable at less cost compared to the commercialized ones, (although nothing goes free).
All of this goes to suggest that the success of e-learning technology depends on how well it is planned, managed and committed to by the university management (i.e institutional factor).

3.4.2. The Lecturers

It is clear that lecturers are important not only to the face-to-face students, but also to those studying online since they need to immediately respond to the needs of such students. This then calls for extra responsibility on the part of lecturer, as he/she has to build a new way of relating with students, and not only during the face-to-face session but outside the class session and sometimes at an ought time. It has been observed (NCVER, 2003) that an important success factor in on-line study is the good rapport developed between a lecturer and his students.
Another area with respect to lecturers' involvement is the aspect of skills development; lecturers need to be trained in the use of new technology either in house or otherwise. Since this will add to lecturers' load, it means for personal engagement of the use of the new technology by them, would require moral support and /or rewards from the management concerned in addition to their legitimate benefits, so that they become motivated or as the task from its initial may be discouraging.

3.4.3. The students

The ultimate goal of introducing e-learning related technology like a CMS is to facilitate and improve learning by making it more affordable and accessible at all times by the learner i.e.

flexibility. Accessible information does not turn automatically into meaningful knowledge without the assistance of a teacher or expert. Novices, particularly the undergraduates need immensely the ongoing support and guidance of expert teachers. In addition to conducive digital learning environment (Threeships@Tschoo, 2003), NCVER (2003) observed further that students would like to have the following support if they are to be effective in using the new technology:

1. "Pre-enrolment support, this would include:
   - career/counseling
   - clear information about how the course enrolment procedures and payments of fees are,
2. Teaching and learning support, this includes:
   - induction and orientation on how to access course online and learning/communication strategies
   - access to study and research skills such as time management, "learning-to-learn" skills
   - processes to keep students in touch with each other and the lecturers
   - general learning support and access to learning resources
3. Technical support, this includes:
   - Information technology support that would provide students with a range of options to access assistance to communication facilities and tools available,
   - Frequently asked questions, helpdesks, and ensuring that the systems function well, easy to use and are reliable"(p. 5).

From literature (NCVER, 2003) it can be observed that, five main factors, although not independently, play major roles in supporting a learner to attaining a required learning supported by technology. These are: The learner himself; the lecturers; the pedagogies (hybrid); primary source materials (online materials), and assessments both from the lecturers and the learner (Assessment and feedback). These are further expanded and elaborated in Section 4.1

In sum, the introduction and use of CMS in higher education would mean applying 4-E. The 4-E Model (Collis& Moonen (2001); Collis, Peters, & Pals, (2001)). This model shows that "an individual's likelihood of making use of a technological innovation for a learning-related purpose is a function of four groups of factors: Environment (the institutional context), Educational Effectiveness (perceived or expected), Ease of Use, and Engagement (the person's personal response to technology and to change), each expressed as a vector. In the 4-E Model, the Environmental factor determines the level of the success threshold; a stronger environmental climate pushes the threshold lower so that the vector sum of the other three vectors does not have to be as high as when the threshold is associated with a weaker environmental vector"(Collis & Moonen, p. 25).
Details of the 4-E Model are discussed in Chapter 6 as support for the means by which a CMS can be implemented in a university.

3.5. Characteristics of a Scenario for Using CMS for the Identified Problems

According to Collion (1989) quoted in International Service for National Agricultural (2003), "a scenario is a description of a vision of the future state of a system. It is based on an assessment of the environment, of the forces of change at work, and the likely interaction between system variables in the progression from current conditions to a future state". Further more Gaffney (2000) describes a scenario as: "a description of a persons' interaction with a system focuses on the users' requirements rather than technical or business requirements, suitable for use during

participatory design activities and appropriate when you need to describe a system interaction from the user's perspective" (para. 1).

The problems identified as stated in Section 1.1 and also made references to in preceding sections of this chapter are (among others):

1. Poor lecture attendance,
2. Lack of up-to-date primary source materials for teaching and learning activities.

Accordingly, the characteristics of a scenario for using a CMS would be the types that involve learner–content; learner–lecturer and learner –learner interactions. This would mean activities such as: course organization; lectures contact sessions; self-study/assignments; major tasks; testing; monitoring/communications (Collis, B. & Moonen, J. 2001, p. 21). This means both the lecturers and students are actively involved in learning content creation and knowledge construction in all the three phases of a lecture. It also mean a www-based tool like CMS should make available a means (calendar/roster) on www course site via which all relevant information about a course is communicated to learners so that irrespective of their locations they can have access to such information and be able to respond accordingly This calendar/roster can be used to display activities such as Self-study tasks, Major tasks/assignments that would engage students before contact hour, during contact hour and after contact hour of a course.
The characteristics of a scenario that would effectively engage the use a CMS in this context therefore, would mean a "New-Style Lecture". This is a scenario characterized by before the lecture session, during the lecture session and after the lecture session (i.e in a cyclic form). This is described and discussed in details in Chapter 4.1.
The implications for this are:

- Institutional change, e.g. learning setting,
- More responsibility for lecturers at the initial stage, but later improved efficiency,
- Flexible learning and self-directed leaning for the students,
- More collaborative activities for the engagement of learners, but also a learner takes more responsibility of his study.

These are discussed in Section 4.1.4.

3.6. Conclusion

In conclusion, one can say that the use of Internet for educational purpose is wide spread and rapidly growing in many universities in the developed countries like America and those in Europe, but with few in developing countries that have embraced the use of CMS to complement the traditional face-to face teaching methods and promote online distance education. These trends, I suppose, shall accelerate as more colleges and universities create online versions of their respective courses, more so that Nigeria is seriously supporting distance and open education as it tries to reach the un admitted qualified youths with education and for life-long learning.

4. A Scenario and Workshop for Adoption of a CMS in FUTY

In this chapter, a design of scenario for a new style of lecture supported by a CMS (Section 4.1) is described, a design of a workshop for the stakeholders of the new style of lecture at the FUTY (Section 4.2) is outlined and explained; the intended respondents and design of the before-and-after the workshop evaluation instruments (Section 4.3) are explained, experiences of the pilot version of the workshop and the evaluation instruments (Section 4.4) are described, and a revision of the scenario, workshop and evaluation instruments based on the pilot experiences (Section 4.5) is described, a conclusion (Section 4.6) is drawn.

4.1. Design of a Scenario

According to Preece, Rogers, and Sharp (2001), "a scenario is informal narrative description. It describes human activities or tasks in a story that allows exploration and discussion of contexts, needs and requirements" (p. 223). Furthermore Gaffney (2000) considers a scenario to mean:

> "a description of a person's interaction with a system that focuses on the users' requirements rather than technical or business requirements, suitable for use during participatory design activities and appropriate when you need to describe a system interaction from the user's perspective" (modified, p.1).

Accordingly one can consider a teaching-learning scenario to mean a sequenced learning activity described by a process. In this context, it would mean series of activities/pedagogies supported by technology--a CMS-- to complement the traditional face-to-face lectures at the FUTY which are usually characterized by poor attendance, and lack of up-to-date primary-source motivating materials for teaching and learning. In view of this and in the context of Nigeria and in particular FUTY the scenario that is considered as it relates to lecture and learning activities is called the "New-Style Lecture Scenario". In the next three subsections, the particular scenario is described, the use of a CMS in the scenario discussed, and a plan for implementing the scenario in practice is given.

4.1.1. The New-Style Lecture Scenario

This is a new method of presenting a lecture within a course with an aim to involve active participation of students in each of its phases (before, during and after) related to the lecture. Table 6 gives an overview of this scenario.

Table 6. New-Style Lecture method (from Collis & Moonen, 2001, pp. 89-92, additions added in italics)

Before the lecture session	**During the lecture session**	**After the lecture session**
This would include what students are expected to do before coming to the lecture for instance: *-Reading materials related to the topic to be discussed during the up-coming lecture.* -Preview of proposed lecture materials for that session, *-Attending to quiz or some related activities in preparation for the lecture coming up in the week,* *-Noting some difficult areas related to the coming lecture and posting a comment about them for the lecturer and classmates to see before the session.*	This would include activities such as: -Discussing previous questions related to the immediate past lectures as away of emphasizing key points, - Presenting learning materials by the lecturer either in word, pdf or ppp format. -Discussion/question on points not clear - Giving personal or related examples to the topic at hand. - Focusing on difficult concepts based on students' submission before the session *-Helping students to prepare for assignments, quiz, and question and answer sessions and how to handle them successfully* *-Engaging students by way of grouping them to do the class activity so as to reinforce the learning of a difficult concept through sharing of ideas* *- Posting in addition to lecture notes some discussion and/or activities that went on during the session, so that students who were not present can equally have access to all materials.*	This would include some kind of follow-up activities such as: -Students to do quiz, assignments -Reading of more related materials from other source(s) either than the lecture materials *-Students can ask questions for clarification of some points related to the lecture held and /or clarification of assignments given.* *- The lecturer monitors the students by way of having an overview of those who submitted assignments or any required tasks by the deadline so that those who did not submit could be advised to do so.* *- The lecturer at the end gives feedback to students either before the next lecture or during the next lecture session.*

4.1.2. Using a CMS to support the New-Style Lecture Scenario

Although the scenario suggested Table 6 can be employed without necessarily the use of a technology (particularly to a small group of students leaving on campus), however it would not be easy and fruitful in the case of FUTY (where lectures are overcrowded and most of the students are leaving at a distance from each other) without the use computer and network-based technology. A course management system (CMS) is a type of web-based technology particularly developed to support courses and making them more flexible (Collis & Moonen, 2001).
Table 7 shows how a CMS can support the New-Style Lecture Scenario.

Table 7. The application of a CMS for the support of the "New -Style lecture" scenario (from Collis & Moonen, 2001, pp. 90-92, with additions in italics)

Before the session	**During the session**	**After the session**
Using a CMS will mean: -Presenting preliminary materials related to the topic to be discussed during the coming session posted on the websites of the course where everybody can have access to the materials, - Constructing quiz or questions and answers with automated feedback or results/scores to be given later. These can be made available on the website of the course for every student. This can be part of students' assessment so that they take their studies seriously. - *The CMS can be used to access the Internet for more related materials via its search engine tool, or archives of the course for reusable materials related to the topic that would be discussed during the contact session.* - *Students can ahead of time view the next lecture materials posted by the lecturer, and be able to note difficult concepts/ideas, and post their questions via the web sites or e-mail or through the discussion forum web page of the course environment so that the lecturer and/or other students take note of the questions before the session with a view to discuss them during the contact session* - *Before the commencement of the lecture, the lecturer through the course websites can have an overview of who has submitted something as requested. This aids the lecturer in class administration and management.*	*By the use of the CMS, students' previously posted materials can be viewed by every participant on the website of the course and* -*Difficult concepts as identified by lecturer based on students' responses to the quiz/questions as observed by the students can be highlighted and every one including distance and/or students not present at the lecture can view them and possibly comment on these concepts even before the lecture session* -The lecturer can be supported by the use of the CMS in presenting his lesson by using *a computer and screen Beamer or computer projector to show his /her presentation either in Word format, or PowerPoint. This would mean saving time on lecturing and more time to be devoted to discussion that might be more engaging and motivating to participants.*	Through the CMS websites: -lecture materials or content are made available to all students -Activities that were done by students during the session could be posted by the lecturer immediately after the session for all categories of students to view and for archiving. - *Absent students, via the websites, can be asked to do similar activities done by their mates and upload the same on the course websites as part of their contributions to previous class discussion.* -Assignments with deadlines are made available to every student as well. - *Feedback can be uploaded before the next session for students to see, and they can use that for their self-assessment, while a lecturer can use the sites to track students' progress, note difficulties so that they can offer more coaching, or guide or assist students who have problems in understanding a topic or with the course as a whole.*

4.1.3. The implementation plan

The implementation plan will be in phases/cycles. Within each phase there will be a focus on all categories of students (present, occasionally absent from the lecture, and the distance students), meaning every student should be able to have access to all materials and also be able to participate in all required activities before, during and/or after lecture session. Those absent should be able to do what others did during the lesson and be able to post the same on the course websites for others to see their own contributions as well.This would mean promoting active leaning as every learner is encouraged to participant in the lesson before, during and after.

The implementation could be planned as follows:
First Phase: As a way of experiment a lecturer can implement this New-Style Lecture in one of his lectures using a CMS. After that he will know more about the intricacies of the New–Style Lecture, and based on that a decision as to how to improve the approach so as to make it more successful in the subsequent trial will be considered and appropriately be addressed
Second Phase: Based on the first experience, a lecturer should be able to organize two or three lecture sessions using the New-Style Lecture scenario (method).
Third Phase: One full course using the New-Style Lecture Scenario
Fourth Phase: Adopting the New-Style Lecture by a department for trial
Fifth Phase: Faculty tries the New-Style Lecture supported by a CMS based on the success recorded by a department
Sixth phase: The University adopts the New-Style Lecture supported by the CMS based on the success recorded over times by a faculty.

4.1.4. The implications for the stakeholders

The adoption of this "New-Style Lecture Scenario" that is likely to engage and stimulate learning has implications for FUTY stakeholders. Figure 1 suggests and describes some factors/ actors that are likely to be stakeholders in supporting a "New-Style Lecture" and thus a new -style of learning.

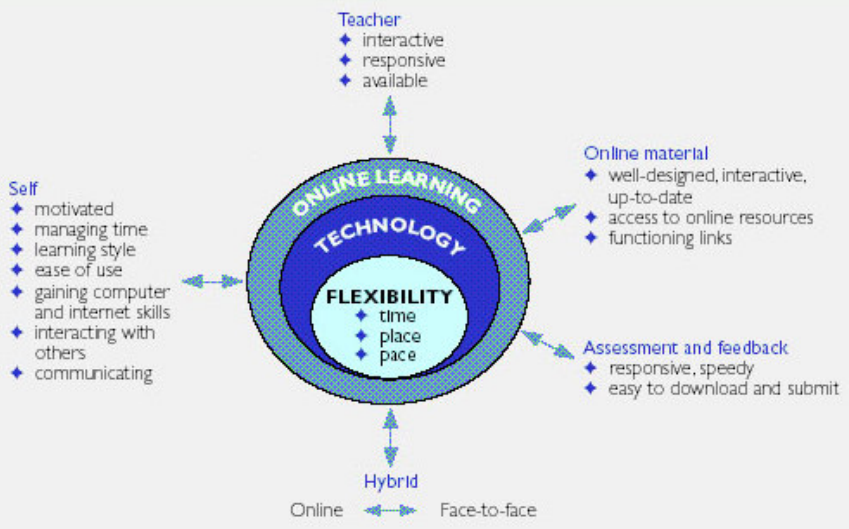

Figure 6. Some factors involved in supporting a new style of learning involving technology (adapted from NCVER, 2003, p. 5)

Thus five main factors though interrelating with each other play major roles in supporting a student irrespective of his/her location when learning supported by technology. These are: The student (self); the lecturer (teacher); the pedagogies (Hybrid); the primary source materials

(online materials); and the assessments and feedback from the instructors based on the learners' submissions of assignments. However Figure 1 does not include two other important factors that are also influential in implementing and supporting users of New-Style Lecture Scenario supported by technology. These are the ICT technical staff and the institution's management. Thus there are seven factors/actors that are interrelated in implementing and/or for the effective use of the New-Style Lecture Scenario supported by technology (CMS), these are:

1. The Student
2. The Lecturer
3. The Technology itself
4. Assessment and feedback
5. Pedagogies
6. ICT Technical Staff
7. The Management

From the students' perspective

The students being the learners (self) are the focal users of CMS in this New-Style Lecture method. In essence this new approach is used in order to satisfy some of their needs and resolve some of their problems and also some of the students who may be engaged in one thing or the other and can not attend the lecture session can participate in learning a course at a distance, in place and/or time (Nichols, 2003). Thus in this new approach of lecture delivery it would be required (to some extent) of students to take responsibility of their studies as they would be expected to contribute towards finding learning-related materials in addition to the usual lecture materials using the Internet and /or search engine of the CMS in use**.** The Self (student) through the involvement in the New-Style Lecture phases will be motivated as a result of getting satisfied via directly knowing the results from quizzes, tests and/or assignments, this in turn may encourage self-study and hence cultivating time-management principles. Further more as a result of his/her experience in downloading and up loading of materials from the course web sites using the search engine or otherwise from the Internet, asynchronous and/or synchronous communications with lecturer and /or classmates either through the websites pages of a course or through e-mail would help students to gain computer and/or other IT-related skills that would be of assistance to them in carrying out their studies. This means that a student's style of learning will now change from being a knowledge receiver to a knowledge constructivist as he/she cultivates self-study methods using the CMS. Through self-study, students can create personal learning materials in each of their courses which can be reused in later time of their studies. It is then expected that students before the lecture session would always be required to do some kind of reading, quiz, or exercise so as to be prepared for the contact lecture session. This would help them to be ready to act upon what they have been learning by contributing during the class activities. Before the lecture, students would be able to identify some difficult areas of the course and post a question or comment to the lecturer ahead of time through the web sites of the course so that during the contact session or even before then the lecturer can respond. The students during the contact session are expected to contribute during the session either through group activities and/or discussion under the lecturer-led instruction, also students can seize this opportunity to discuss further on areas not clear either in the previous lecture or assignments or any task related to the topic discussed. This creates a forum for students to interact and communicate not only with the lecturer but with their peers (mates) as well. The non-present students can always have an overview of all that happened during the contact session and they can always be asked to contribute and upload the same via course websites for everyone to see. After the lecture students are usually as a way of follow up expected to do some tasks related to the immediate past lecture. These could be a quiz; submission of examples of articles related to topics discussed and/or assignments. Students are asked to upload their contribution into the appropriate course websites with or without deadlines.

From the lecturers' perspective

The use of CMS for this kind of scenario would mean extra responsibilities for a lecturer (teacher), as he has to organize lecture materials, assignments, quiz or questions and answers, upload the same into the course site, track students' progress through submitted assignments and provide feedback in addition to his or her usual lecture presentations. Sometimes he/she has to attend to e-mails and be able to respond in time to students' requests or questions that might require immediate attention. The lecturer is also actively involved in extra course-content creation for students to use and/or reuse. Thus his/her role will change from being an information officer (lecturer) to being a mentor, facilitator, and/or a coach. Under this new approach of lecture delivery, he/she encourages or guides students towards knowledge construction for themselves rather than passing of knowledge as it used to be in the face-to-face traditional method of teaching. In the new method, the lecturer can promote group activities by giving students some major tasks like report writing, problem solving or otherwise, and can easily monitor the groups irrespective of their sizes using the course workspace site of the www sites of the course, as he/she can at once have an overview of each group's activities and progress. Thus in this New-Style Lecture method, a lecturer(teacher) would be more interactive, responsive and also available as he can always be reached via e-mail or the websites of the course he/she is teaching.

From the technology perspective

The online materials can always be obtained via the websites of the CMS in use and be saved in the students' account space in the computer. Thus the CMS can be used to enrich students with relevant and important learning materials both for assignments and or research work. The use of the CMS makes things flexible for distance students or students that might have genuine reasons for being absent from a lecture, as such students will always have access to all activities of a course and can always participant as might be expected by the lecturer, even though not physically present. The implication is that the CMS that would be required must be easy to use and interactive; thus the CMS should be user-friendly and easy to understand, so that a novice to computer technology can use it without much difficulty.

From the assessment and feedback perspective

The use of this new method suggests that assessment-related activities of both the lecturer and the students in times of performance and/or achievements in a course are facilitated and enhanced by the use of CMS. This is so because a lecturer will be able to keep track of students' progress in a course easily and results shown by the general performance of students can serve as a means by which a lecturer can equally assess his teaching and of the course as well with a view to improve where necessary. One may argue that with or without a CMS there would always be assignments and feedback, however with the use of the New-Style Lecture Scenario, assignments are more frequent as students would always have something to do before, during and after the lecture and so the use of a CMS in promoting assessment and frequent feedback from either automated or other sources, makes it more responsive, speedy and flexible as downloads and uploads of teaching-learning materials would be easier and faster.

From the pedagogical perspective

The New-Style Lecture Scenario would require a pedagogical approach that would combine face-to-face with online methods (hybrid). Under this approach students who might not be present can always have access to all the lecture materials before, during and/or after, and so a student who either because of distance or some reasons is not physically present would not miss learning materials as would be the case with the traditional method. This implicitly means promoting flexibility for students in terms of distance, time and pace.

From the ICT Staff's perspective

These could be system administrators who undertake the support of all the other users of the system and safeguard its proper operational status, or instructional designers who design and develop various sorts of tools that can be used in multiple situations in which students are active, using the www environments to support and manage that activity (Collis & Moonen, 2001). Accordingly their primary assignments as they relate to the use of CMS in the "New-Style Lecture" involve supporting lecturers by creating or obtaining tools that would support the use of technology in course delivery under the New–Style Lecture Scenario. Thus the instructional designer will assist the lecturer in designing activities that would relate and promote the use of the new method of lecture with before, during and after sessions. The system administrators can make available to lecturers and students online manuals for the use of the system. Periodically and as the need arises, students and/or lecturers can always consult or contact a system administrator for support in times of system trouble shooting, ideas on how to use certain computer application, or on how to use some of the functionalities of the system say for downloading, uploading and/or exchange files documents within a course.

Furthermore it would be required of ICT staff to be able to identify the required hardware and software that would be used in implementing the New-Style Lecture Scenario so as to guide the management for selection and procurement. It would also be required of the ICT staff to be conversant with networking, Internet maintenance techniques and be able to identify problems arising from Internet trouble shooting. It would be the responsibility of the system administrator to develop authentication tools so as to control access to the system and make it only available to those who have registered for the course by means of username and password. The ICT staff would be responsible to ensure that lecture rooms according to specifications are networked and well equipped with required facilities for the use of the lecturers during presentations at a lecture session.

From the management perspective

The management here would in addition to procurement of the CMS provide all necessary logistics for the implementation of this New-Style Lecture. These would include more computers and installation of computers in lecture halls with screen beamers or computer projectors in each of the lecture rooms where this new method of lecture delivery would be experimented. In the event where there is no adequate ICT technical staff, the management will as a matter of necessity need to employ more technical staff for the management and maintenance of the new system. The Management as part of implementation will be required to organize orientation /training/workshops for end user (lecturers, students and even for some ICT staff). In addition, and throughout the experimental phases and or even after implementation, it will be required that the management will continue to provide finances for the maintenance of the system and its related ICT outfits. For effective utilization of the new lecture system it would be required that management in addition to procurements of printers should provide free Internet accounts to students, lecturers and also free printing of documents as these form part of the New-Style Lecture Scenario. Above all the lecturers with their extra responsibilities would require moral support in addition to providing them with required logistics, thus lecturers who are active and committed to the use of this new method should be encouraged and be given more incentives/rewards either in cash or in kind. The management should as a matter of policy ensure the use of the New- Style Lecture approach so as to check any possible resistance from lecturers as it is tasking yet rewarding and satisfying when they get used to it. The implication for the management would mean investing a lot of resources (finance), but with time, being rewarded as there would be a positive return on investment (ROI) over time from school fees as a result of increased enrolment in regular, distance and/or part-time programmes as a result of the flexibility offered by the New-Style Lecture method supported by CMS.

In conclusion, this scenario highlights some definite and specific activities in which lecturers and students are engaged in the use of New-Style Lecture supported by a Course Management System (CMS), and by that the problems of poor lecture attendance and/or lack of up-to-date primary resource and motivating teaching-learning materials can be resolved when this new approach to lectures supported by a CMS is adopted and implemented in FUTY. This is so, because issues such as good course organization, effective class management, content creation, self-assessment, self-study, collaborative learning, task-oriented activities and effective communications between the actors of teaching-learning process will be facilitated and enhanced by the use of the New-Style Lecture Scenario supported by technology- a CMS.

4.2. Design of a Workshop

For the realization of the designed scenario for the "New-Style Lecture" there will be a need for a workshop for some of the FUTY stakeholders. Sections 4.2.1-4.2.3 give an overview of the workshop.

4.2.1 General goal/specific objectives of the workshop

The general goal for the workshop and of course for the entire project is to improve lectures so as to support alternative ways of gaining the benefits of a lecture for both students present and/or physically absent from the lectures, and to make up-to-date and motivating resources available to support lectures and learning activities in the university. In this respect, the specific aims/objectives are:

1. To acquaint, demonstrate and discuss the applications and the uses of CMS as an alternative solution to poor lecture attendance and the lack of up-to-date primary source materials for lectures with a view to make the stakeholders see the need for adopting the New-Style Lecture with a CMS as supporting technology.
2. To meet the learning and research needs of students in higher education through a well-selected pedagogical technology such as the Course Management System (ADEA News letter, 2004).

4.2.2 The target audience

The target groups for this workshop are:
The Lecturers from schools of Technology and Science Education; lecturers from the departments of Information and Technology, lecturers from the departments of Mathematics and Computer Science, students from the above-mentioned school and departments, ICT technical staff (Computer and IT staff) and Management staff.

4.2.3 Structure and activities of the workshop

This workshop is structured in three parts; in addition there will be a follow-up activity for lecturers and students as part of the workshop evaluation.

Part 1: Presentation on the New-Style Lecture and CMS.
Part 2: Demonstration of how a lecturer and/or a student can use CMS for the New-Style Lecture.
Here the Teletop environment will be used for demonstrating how a lecturer and/or a student can use a CMS for the New-Style Lecture Scenario.

Part 3: Discussion of the implications of the New-Style Lecture, as they relate to the roles of lecturers, students, ICT technical staff and management respectively.
For the lecturers, the "After" experience will involve two activities using the TeleTop site. These activities will be:

1. Immediately after the demonstration in Part 2, the lecturers will do some exercises using a CMS in a course. This will be done in groups, and rotationally. This is to enable them practice how to organize a course environment under the following headings relating to the CMS:
2. Group1-News; Group2- Course Info; Group 3-Weblinks; Group 4- Archive; Group5-Submission tools.
3. After the workshop lecturers will be requested to organize say a news page of a course, Course info of a course, and/or a row of a roster page involving the three cycles of the New-Style Lecture Scenario while students will do and submit assignment 1 posted at the web site of this workshop using the TeleTop environment. Their submissions will be checked through the Internet the next day by the researcher. This shall serve as a follow-up activity and practical evaluation of the workshop in addition to the post-workshop questionnaire that will be filled in by some categories of participants. Table 8 gives an overview of the planning for the workshop.

Table 8.Tentative schedule of activities for the Workshop on "New-Style Lecture" Scenario Supported by CMS FUTY-Nigeria.

Day/Time	Events	Actors	Remarks
30th May, 2005	Pilot demonstration	TAET instructors/researcher	Faculty of Behavioral Sciences . U, Ttwente.
June 20th , 2005 8:00-8:55hr	Registration of participants	Mr. Daniel Peter and others	Nigeria
June 20th , 2005 09:00- 09:20hr	Welcome address/introduction	Head Of Department Education	FUTY-Nigeria
09:20hr-10:20hr 10:20-10:30hr	Part 1 Presentation of New-Style Lecture and CMSs for the New-Style Lecture. Discussion	Participants /Researcher	FUTY-Nigeria
10: 30-10:40	Short break	participants	
10:40-12:00hr	Part 2: Demonstration of how a lecturer and/or a student can use CMS for the New Style Lecture	Researcher	FUTY- Nigeria
12:00-13:00hr	Lunch/long break.		
13:05hr-13:15hr 13:15-14: 00hr	Short introduction into the activity -experiencing the use of a CMS environment (TeleTop) by lecturers	Participants under the supervision of the researcher	
14:10-15:00hr	Part 3: Implementation and discussion.	Researcher	Relating this to previous lectures
15:05-15:30hr	Administering the post-workshop questionnaire.	Participants/researcher	To be filled in on the spot by participants
15:35-15:40hr	Introduction to the follow-up activity (after the workshop).	Lecturers	To be checked by the researcher the next day
15:40-16:00hr	Closing remarks	By one of the participants	Researcher -vote of thanks.

4.3. The Intended Respondents and Design of the Before-and-After the Workshop Evaluation Instruments

This section first describes the intended respondents (Section 4.3.1) and then the evaluation instruments (Sections 4.3.2 and 4.3.3) and interview (Section 4.3.4).

4.3.1 Population and sample

The population is the university stakeholders. These would include:

Some of the Lecturers, Students, ICT technical Staff and Management staff.

The sample is:

Lecturers from department of Information Technology	5
Lecturers from department of science education	5
Lecturers from department of technology education	5
Lecturers from mathematics and Computer science	5
ICT technical (Computer and IT) staff	5
Management staff	5
Students from the above mentioned departments	10
Total for the initial questionnaire	40

The instruments designed for evaluation, data collection, and analysis were of two categories, namely one for before workshop and one for after the workshop instrument (formative and summative evaluations).

4.3.2 The before-the-workshop instruments (formative evaluation)

These are of three types, discussed in the following subsections:

1. The pilot demonstration evaluation form for TAET instructors
2. The pre-workshop questionnaire for FUTY stakeholders
3. Inspection of ICT facilities

The pilot demonstration workshop's evaluation form

This is an open-ended questionnaire aimed at getting more input from TAET instructors who are experts in this area with a view to improve the design of the scenario and the proposed workshop on the uses of a CMS to support an approach to improve more flexibility and quality of lectures in a university and in particular FUTY-Nigeria. This will be administered only to participants of the pilot demonstration of the workshop and to be filled in immediately after the demonstration by the TAET participants at the pilot demonstration (see Appendix 1).

The pre-workshop questionnaire

This is a questionnaire aimed to find out general information about FUTY and the current situation as it relates to:

1. Student population
2. Lecturer-students ratio
3. Lecturers and students attitudes towards lecture attendance
4. Availability of ICT facilities, computers and personnel
5. Lecturers' and students' knowledge of computer use/network technology

The questionnaire can be filled and be submitted via Dr. V. V. Apagu of the Department of Technology Education FUTY on or before June 13th, 2005 or to the researcher directly.

Physical inspection of facilities

This will involve a personal inspection and assessment of the ICT facilities available for the workshop. It will include seeing the computer centre and the cyber cafés, the availability of the Internet network and projector for the computer, ascertaining the room for the proposed workshop, and the availability of power supply, computers and Internet connections at the center.

4.3.3 The after-the-workshop instruments (Summative evaluation)

This is a follow up (post-workshop) questionnaire designed to find out from the participants their personal reactions and opinions about the workshop and in particular to the New-Style Lecture scenario supported by a CMS as it relates to solving the problem of poor lecture attendance by both lecturers and students, support of distance learning and enriching of the face-to-face teaching-learning activities. This questionnaire can only be filled in by those who participated in the workshop.

4.3.4 Interviews/Inspection of facilities

After going through the filled-in questionnaires (both pre- or- post workshop), and if discovered that some required information has not been not properly addressed or answered then there will be a need to administer some unstructured interviews either before or after to some respective stakeholders as the need arises.

4.4. Experiences of the Pilot Version of the Workshop and the Evaluation Instruments

In this section the planning of the pilot demonstration (Section 4.4.1) is outlined, evaluation of the pilot demonstration of the scenario and the workshop (Section 4.4.2) is described; analysis of the respondents' opinions of the pilot demonstration (Section 4.4.3) is explained.

4.4.1. Planning of the pilot demonstration

The pilot was a demonstration of the proposed workshop (as it would be expected to take place) to some of the TAET instructors (experts of network-learning) of the University of Twente. The aim is to solicit their input, suggestions and/or observations from them after having walked through the workshop programme for the purpose of formative evaluation of the proposed workshop in Nigeria. It is therefore expected that at the end of the workshop an evaluation form would be given to the participants for their comments and suggestions which would be used later for improving the Scenario and/or the workshop. Table 4 shows the planning of the pilot demonstration.

Table 9. Schedule of activities for the pilot demonstration of a proposed workshop

Date-May 30th , 2005, from 10:00-11:00hr at room B200A.

Time	Activities	Actors
10:00-10:05hr.	Introduction/welcome address.	Prof. dr. Betty Collis.
10:05-10:25hr.	Part 1: Presentation of New-Style Lecture and CMS for New-Style Lecture. Discussion.	Researcher.
10:25-10:35hr.	Part 2: Demonstration of how a lecturer and/or student can use CMS for the New-Style Lecture.	Researcher.
10:35-10:40hr.	Tea-Break.	Participants/Researcher.
10:40-10:45hr.	Short introduction into the activity. Activity-experiencing the use of CMS (TeleTOP).	Participants under the supervision of the Researcher
10:45-10:50hr.	Part 3: Discussion of implementation, implications for the stakeholders.	Researcher/Participants
10:50 -10:55hr.	Introduction to the follow-up activity (after the workshop)/Evaluation form.	Researcher.
10:55-11:00hr.	Closing remarks.	Prof. dr. Betty Collis.

The demonstration included highlights of:

1. The New-Style Lecture Scenario phases
2. The use of the CMS for the support of the New-Style Lecture Scenario
3. Demonstration of how the CMS can be used to support the New-Style Lecture Scenario using the TeleTOP environment phase by phase,
4. Presentation of the implementation plan for the New-Style Lecture Scenario
5. Implications for the FUTY stakeholders

Parts 1 and 3 were presented using a PowerPoint presentation while a TeleTOP environment was used for Part 2 which was a demonstration of how a lecturer and a student can use a CMS carrying out the New-style Lecture Scenario activities within a course.

Three instructors from the TAET programme attended and evaluated the pilot demonstration and participated in the following evaluation of the instruments for the formative and summative evaluations (see figure 7 for the participants).

4.4.2. Evaluation of pilot demonstration of the scenario and the workshop

The pilot demonstration did not go according to the time planned, that is to say I did not finish the presentation within the time frame (the hour scheduled), this was because of some technical difficulties I had with the use of the PowerPoint within the TeleTOP environment (as I was going back and forth between the PowerPoint and the TeleTop environment), but with the help of the participants I over came with time. As I was going a long with the presentation, the participants made a lot of verbal suggestions as reflected in Section 4.4.3. This was in addition to their comments made on the evaluation form (see Section 4.4.3).

Figure 7. Photo of participants of the pilot demonstration.

At the end of the pilot demonstration an evaluation form was administered to the three participants to evaluate the presentation. This served as a formative evaluation of the designed scenario and of the workshop to be held in Nigeria (See Appendix 1).

4.4.3. Analysis of the pilot demonstration

The participants of the pilot demonstration were three (3) instructors see figure 7. Their comments as given on the instrument for evaluating the pilot demonstration (in addition to the verbal ones) are summarized as follows:

1. What is your opinion about the designed Scenario?

All three agreed that the New-Style Lecture Scenario is a good idea and that the rationale behind the scenario needed to be justified further, bearing in mind why it is needed, its major characteristics and the theory behind the characteristics.

2. What is your opinion on the proposed workshop presented as it relates to?

a). Part 1: The "New-Style Lecture" and the CMS

It was suggested by all that the screen dumps of the CMS in the PowerPoint should be distinguished from the use of TeleTOP environment and be used as a separate entity. Also it was suggested that more time should be spent on problem analysis and the description of what to do in order to deal with the problem, and then suggest how the CMS can help support the New-style Lecture in each of its phases.

b). Part 2. –Demonstration

It was suggested by all three respondents to use one of the TeleTOP course environments from the TAET courses for demonstration of interesting aspects of TeleTOP, for example the news, roster, course info etc., and guide the participants through the development of these aspects group by group. It was also suggested that the presentation needed to be integrated with some discussion rather than having the audience being passive, thus the idea is generally good but has to be handled with care. The proposed activity has to be interactive and interesting as well.

c).Part 3: Discussion of the implications of the New-Style Lecture Scenario

It was generally suggested that the focus should be on the benefits offered by the New-Style Lecture Scenario supported by CMS and its consequences as it relates to time investment. The participants should be actively involved allowing them to think out the benefits. This approach has to be handled separately for each of the categories of stakeholders (target groups). This can be presented in the Power point materials with a slide for each of the targeted groups.

3. What is your general view about the entire presentation?

The general comment by the participants is that it was a good start, though much was desired to be improved. The instructors should be given a simple assignment for a start being the first workshop, for instance adding some thing to the web links, archive, news etc.

4. Please kindly suggest any other thing not indicated here which you think would be of assistance in improving the:

•New-Style Lecture Scenario

It was suggested that a clearer distinction between the benefits such as offering of more flexibility, offering of better and newer resources and provision of good experiences for student who cannot be physically present at the face-to-face lecture session associated with the New-Style Lecture Scenario supported by CMS be made to participants instead of blurring all these together

• Workshop

It was stressed by the respondents that the activity for each category of the participants should be made clearer and more explicit so that each category knows exactly what to do, how and when. Thus the activity should be simple and attainable.

In sum, the general opinion was that the New-Style Lecture Scenario is a good idea, the use of a workshop for introducing the scenario supported by Course Management System (CMS) is also good, but the presentation of the New-Style Lecture and the demonstration using the TeleTOP environment have to be improved upon so that the workshop could be interesting and interactive. In addition to the comments made on the written evaluation form, the respondents made many comments during the workshop itself, with suggestions for improvement. Major comments made were:

1. That I should separate the PowerPoint presentation parts from the TeleTOP environment (so that it could be handled easily and flexible) and be put in a different window, as a separate entity.
2. That I should add two cycles in between my cycles two and three of the designed implementation plan.
3. That I should have enough rehearsal on how to use the computer for my presentation so that I develop more confidence, and be looked more professional.
4. That during the activity session I should first demonstrate what each group is expected to do before they go into doing their specific activity.
5. That one hour for presentation with only ten minutes for discussion is in proportional, I should integrate the discussion as I go along with the presentation of part 1 so that participants are actively involved.
6. I should explain well the problems that call for the New-style Lecture scenario,
7. I should explain the characteristics of the scenario independently of the use of a CMS, then later introduce the why, and how of a CMS in supporting the scenario and not to blur the two together.

4.5. Revision of Scenario, Workshop and Evaluation Instruments

Based on the results of the evaluation done by those who attended the pilot demonstration of the designed Scenario and the proposed workshop, there was not much to add to the scenario and /or the structure of the workshop. However it was observed that a lot has to be done in order to improve the method of presenting the New-Style Lecture scenario and the use of the TeleTOP environment for the support of the New-Style Lecture method. These revisions are discussed in Sections 4.5.1 and 4.5.2.

4.5.1. Improved version of the workshop on the New-Style Lecture Scenario

For the improved version of the workshop paper, an introduction which reflects the contextual description of FUTY and the problems that led to the design of the New-Style Lecture Scenario supported by a CMS were added. Also the following suggestions made during the pilot demonstration were incorporated into the design of the scenario and workshop

1. The PowerPoint presentation was presented during the actual workshop as a different entity from the TeleTOP environment
2. Based on the suggestion in 4.4.2 phases two, three and four were added in the implementation plan.
3. Before going to Nigeria I had enough practice with my revised version of PowerPoint documents and with use of the TeleTOP environment with the support of Mr. Johan Jonker (as to gain more experience on the use of TeleTOP).
4. During my presentation I demonstrated what each group did, based on their interest and appointed a leader for each group (though I went round assisting those that needed help).
5. I explained as suggested clearly the major characteristics of the NSLS without necessarily the use of a CMS, then later explained why the need for a CMS for the NSLS.
6. As suggested discussion went along with my presentation and it was very interactive and interesting to both me and the participants.

Table 10 shows the initial Time-Table for the workshop indicating in italics what I could not do during the pilot demonstration and why, this however further improved my timing during the actual workshop.

Table 10.Workshop Time-Table indicating in italics what I did not do at pilot demonstration.

Day/Time	Events	Actors	Remarks
30th May, 2005	Pilot demonstration *The details of the workshop was not carried out at the pilot demonstration, because it would not have been possible to demonstrate a one day workshop in one hour and so it was just major highlights and even that not all was carried out because of some difficulties I had with handling the PowerPoint within the TeleTOP environment.*	TAET instructors/researcher	Faculty of Behavioral Sciences. U, Ttwente.
June 20th , 2005 8:00-8:55hr	Registration of participants	Mr. Daniel Peter and others	Nigeria
June 20th , 2005 09:00- 09:20hr	Welcome address/introduction	Head Of Department Education	FUTY-Nigeria
09:20hr-10:20hr 10:20-10:30hr	Part 1 Presentation of New-Style Lecture and CMSs for the New-Style Lecture. *I was to improve on the presentation of the NSLS a long with its characteristics independently of a CMS, then suggest/explain the why, and how of a CMS for the support of NSLS so that audience will be able to understand very well my scenario and why the use of a CMS.* Discussion	Participants /Researcher	FUTY-Nigeria
10: 30-10:40	Short break	participants	
10:40-12:00hr	Part 2: Demonstration of how a lecturer and/or a student can use CMS for the New Style Lecture *I was to demonstrate how a CMS can be used in supporting the NSLS using one of my TAET courses as an example and how a roster page can be developed using Kwache2 TeleTOP site*	Researcher Participants under the supervision of the researcher	FUTY- Nigeria
12:00-13:00hr	Lunch/long break.		
13:05hr-13:15hr 13:15-14: 00hr	Short introduction into the activity -experiencing the use of a CMS environment (TeleTOP) by lecturers *I could only explain but did not demonstrate this aspect for lack of time during the pilot demonstration*		
14:10-15:00hr	Part 3: Implementation and discussion.	Researcher	Relating this to previous lectures
15:05-15:30hr	Administering the post-workshop questionnaire. *This, during the pilot demonstration was not possible due to lack of time*	Participants/researcher	To be filled in on the spot by participants
15:35-15:40hr	Introduction to the follow-up activity (after the workshop). *This was to be explained as in kwache2's TeleTOP site during the pilot demonstration but was not due to lack of time, however, the follow-up activity was immediately done by the participants and not as proposed (this is explained in chapter 5.4).*	Lecturers	To be checked by the researcher the next day
15:40-16:00hr	Closing remarks	By one of the participants	Researcher -vote of thanks.

4.5.2. Revised evaluation instruments

As part of the formative-evaluation process for the proposed workshop and its evaluation instruments, the participants of the pilot demonstration went through the pre-workshop and the post-workshop questionnaires respectively and made some corrections (see Appendix 4 and 5). The changes were mainly relating to the wording of the questions, the English and formatting. These are the questionnaires used finally in collecting the analyzed data in Chapter 5.

4.6. Conclusion

In summary, this chapter highlights the design of the New-Style Lectures, particularly in terms of some activities in which lectures would be supplemented by the use of a CMS and instructors and students of FUTY would be engaged in the use of CMS as a support for teaching and learning activities if the scenario was implemented. The design reflects a way to reduce the problems of poor lecture attendance and the problem of lack of up-to-date primary source materials, motivating students to be more engaged in lectures, even if they cannot be present. The new scenario of teaching is only feasible with the large numbers of students at FUTY if supported by a CMS in the university.

Central to the implementation of this design are the issues of course organization, class management, learning-content creation, self-assessment, self-study, collaborative learning, task-oriented activities and communications between lecturers and students. These are also discussed. These issues shall further be elaborated in the course of analysis of the data collected in Chapter 5.

The chapter also describes the design of a workshop and evaluation procedures for the workshop in order to introduce the New-Style Lecture and the use of a CMS at the FUTY. A pilot demonstration of portions of the workshop is described, as well as revisions to the procedures and materials based on the feedback.

5. Research Procedure, Data Analysis and Interpretation

In this chapter specifics of organizing and communicating the designed workshop before and in Nigeria (Section 5.1) are explained; respondents (Section 5.2), and the administration of the evaluation instruments before the workshop are described (Sections 5.2), the workshop as it actually happened (Section 5.4) is discussed; the administration of the evaluation instruments after the workshop (Section 5.5) is explained; data are presented and compared, before and after, from each evaluation instrument (Section 5.6) ; an interpretation of the data (Section 5.7) is done; and a conclusion (Section 5.8) is drawn.

5.1. Specifics of Organizing and Communicating the Workshop before and in Nigeria

In this section some specifics such as correspondences via e-mails and telephone calls with some of contact persons before going to Nigeria for the workshop are described in Section 5.1.1; while in Nigeria, verbal discussions, meetings and other forms of communications (writing of invitation letters before the workshop and appreciation letters after the workshop) are explained in Section 5.1.2.

5.1.1. Before going to Nigeria.

Immediately after my topic for the workshop was approved I wrote a letter to Dr. V. V. Apagu (being a director of the academic planning unit FUTY) through Daniel Peter's e-mail address on 9th March 2005 to find out the possibilities of having a workshop in FUTY on the use of e-learning related technology as one of the parts of my final project and also the situation in FUTY as it relates to ICT facilities (Internet, computers and ICT personnel). Dr V. V. Apagu indicated through phone calls and also by a letter from Daniel Peter confirmed that it would be possible because the universities in Nigeria are looking forward as to how ICT can be integrated into their education systems. Based on this, I wrote Daniel Peter to get a true picture of things as related to teaching and the attitudes of lecturers and students towards lecture attendance and also to further confirm the availability of ICT facilities, how teaching and learning are organized, and FUTY's student population, among other questions. He then informed me that FUTY has four (4) cyber café s with not less than 20 computers in each. This further encouraged me to go ahead with organizing and conducting the workshop in FUTY. Time constraints restricted the planning to only one university in Nigeria (see Appendixes 3 as samples of letters written for more information).

Before going to Nigeria, as part of the project plan, a pilot demonstration of the workshop (for details see Chapter 4, Section 4.4) was done where three experts of the Faculty of Behavioral Sciences evaluated the presentation and based on their feedback an improved version of the workshop was developed. Prior to the pilot demonstration experience of the workshop, I requested for instructors' and students' guest accounts to TeleTOP through my primary supervisor, and I was given five instructors and five students guest accounts to the TeleTop being the CMS environment used in my demonstration exercise (see Appendix 2). Furthermore before going, I requested the International Office for an introductory letter to the Vice Chancellor of the FUTY (see Appendix 6).

5.1.2. While in Nigeria

The following six points describe my activities in Nigeria:
1. On arrival in Yola, on Thursday 9th June, 2005, I took the introductory letter along with detailed cover notes (indicating all that I required for the smooth take-off of the workshop), and also with some relevant related documents of the workshop to FUTY's vice chancellor (See Appendix 6).After studying the letter and the documents the Vice Chancellor directed the deputy vice academy to ensure that I got the support of the university for the success of the workshop.

2. Based on that, a meeting with the deputy vice chancellor, respective heads of departments of academics, coordinators of the computer center, the ICT committee chairman and the director of academic planning unit was held on Thursday 13th June, 2005. It was at this meeting that I was made to understand that none of the cyber cafés were functional due to the following reasons:

- That the one attached to the library had a minor technical problem although already a technician was working on it,
- While the ones at the computer centre were disconnected from the main sever due to non-payments of subscription fee (although funds had already been released for their reactivation) and so there was a likelihood that the ones at the computer centre would be reactivated in the not-to-distance future

Based on this information the participants at the meeting decided that the date of the workshop be shifted from Monday June 20th to Monday June 27th, so that by then hopefully at least one of the cyber cafés would be made functional (reactivated), which I could use for my demonstration during the workshop. Also at the meeting, the deputy vice chancellor directed that all heads of academic departments concerned, the coordinator and the ICT committee chairman should inform their respective staff of the new date of the workshop and to ensure that the pre-workshop questionnaires were dully filled and returned.

3. On the 20th of June I wrote invitation letters to all expected participants and the letters were given to their respective heads of departments who in turn selected the lecturers and the students who attended the workshop (see Appendix 8).

4. One other thing I did on Thursday 13th June was to inspect the computer centres and found out that there were more than 20 computers connected to Internet at each of the cyber cafés particularly those in the library and the computer centre (See Appendix 7 which shows pictures of the computer centre cyber café and that of the library).

5. When as at 24th June, 2005, none of the cyber cafés was reactivated, I decided to book with a commercial cyber café called ABTI Ventures for the use of their cyber café on Monday 27th June from 1:00PM to 3:00PM. I notified the school authority through the deputy vice chancellor of this new arrangement.

6. On the 28th June, after the workshop, in addition to retrieving some of completed post-workshop questionnaires from the respective heads of departments of the lecturers and students who did not submit theirs the previous day, I wrote appreciation letters to vice chancellor, to all participants through their heads of departments, and to other individuals who were actively involved in organizing and conducting of the workshop, (see Appendix 10).

5.2. Respondents

There were two stakeholders. These included the pre-workshop questionnaire and the post-workshop questionnaires (see categories of evaluation instruments administered to some of the FUTY Section 4.3).
For pre-workshop questionnaire the categories of respondents were:

1. Management staff
2. ICT technical staff
3. Lecturers
4. Students

For the post-workshop questionnaire the categories of respondents were:

1. Management staff
2. Lecturers
3. Students

The ICT technical staff did not fill in the post-workshop questionnaire as the aim of that instrument was to evaluate how useful a CMS environment could be for the support of the New-Style Lecture scenario and not the evaluation of technical aspects of the product, moreover they were not expected to do any activity with the CMS environment and so there was no basis for them to evaluate the use of the CMS for the Scenario. However they were in attendance as observers and aids during the demonstration.

5.3. Administering the Pre-Workshop Questionnaire

The pre-workshop questionnaire was distributed to the selected academic heads of departments who in turn gave it out to some selected lecturers and students of their respective departments while the researcher gave the management and the ICT technical staff directly and individually on 10th June 2005. Forty questionnaires were distributed, out of which 30 were completed and returned as follows:

1. Management	5 out of 5
2. ICT staff	2 out of 5
3. Lecturers	13 out of 20
4. Students	10 out of 10
Total	30 out of 40

5.4. Description of the Workshop As It Actually Happened

In this section redesign of the workshop (Section 5.4.1) was made, registration of the participants (Section 5.4.2), introduction/welcome address (Section 5.4.3) is mentioned, Part 1: the New-Style Lecture Scenario supported by a CMS (Section 5.4.4) was done, Part 2: implications and implementation plan (Section 5.4.5) is discussed, Part 3: demonstration of how a CMS can be used to support the New-Style Lecture Scenario (5.4.6) is described.

5.4.1 Redesign of the workshop

The workshop which was scheduled 20th June, 2005 did not take place until 27th June 2005. This was due to problems with FUTY's cyber cafés as described in Section 5.2. Out of the 30 people targeted for the workshop who had submitted the pre-workshop questionnaire, only 28 people attended including the ICT technical staff (who were not part of the completion of the post-workshop questionnaire). The time-table as planned was not sequentially followed as some changes had to be done because of the problems with accessing computers connected to the Internet. Thus Part 1 and Part 3 (being the theoretical parts of the workshop), were presented with the support of PowerPoint presentations at the FUTY computer center while Part 2 (demonstration and activity) which was supposed to follow immediately after Part 1 according to initial plan came last as it had to be done at a commercial cyber café (outside the university). The new arrangement of the activities of the workshop (in comparison with Section 4.2.3) became:

1. Registration of participants
2. Introduction/Welcome address
3. Part 1: Presentation of the New-Style Lecture Scenario and the use of a CMS for the support of the scenario. Discussion
4. Part 2: a) Implications of the scenario supported by a CMS for the FUTY stakeholders
   b). Implementation of the New-Style Lecture Scenario supported by CMS
   c). Discussions

5. Moving to ABTI Venture cyber café by a bus
6. Part 3: Demonstration of how a CMS (using the TeleTOP environment) can be used to support the New-Style Lecture Scenario
7. Activity by the lecturers and students using the TeleTOP environment for some specifics assignments given by the researcher.
8. Supervision of activity by the researcher
9. Distribution of the post- workshop questionnaires to participants
10. Announcements/Remarks

5.4.2. Registration

Each participant had to fill in a registration form for the workshop (see Appendix 5). The registration started as scheduled at 9:00 A.M. The total number of persons registered is 28 as against the expected 30. From the registration form the following categories of respondents and the number of respondents were registered

1. Management staff	5 out of 5
2. Lecturers	12out of 13
3. Students	8 out of 10
4. ICT staff	3 out of 5
Total	28 out of 30

5.4.3. Introduction/welcome address

The Head of Technology Education (Dr. K.A.Bulama) on behalf of the Vice Chancellor gave an introductory and welcome message in which he emphased the importance and relevance of the workshop to teaching and leaning activities addressed by technology. He urged each participant to feel free and contribute meaningfully in the proceedings and discussion during the workshop.

5.4.4. Part 1: The New-Style Lecture Scenario supported by a CMS

The researcher presented this with the support of PowerPoint slides as a new method of presenting a lecture within a course with an aim to involve active participation of students in each of its phases (before, during and after) of a lecture. He also explained that although it is not necessary to use a technology before one can do the approach, however it would not be easy to carry it out in practice and to be successful with many students in a course without a computer and web-based software such as the CMS.
Immediately after the presentation of Part 1, a discussion was initiated with questions.
The discussions were centered on the following questions asked by the participants:

1. Since one of the aims of using a CMS in supporting the New-Style Lecture scenario is to take care of students physically absent from class, how can discipline in lecture attendance be maintained by a lecturer? Would students not abuse class attendance since he/she can have access to lecture materials at any time he/she wills?
2. Another participant asked for the differences between a CMS and the New-Style lecture scenario.
3. A participant asked why the term a “New-Style Lecture Scenario” supported by technology was used instead of the term a “Lecture scenario” supported by technology.
4. A participant asked whether it could be possible for a distance learner to register online with such a system. The questions were responded to as follows:

Using a CMS to maintain lecture attendance
The use of CMS can be for regular and particularly for distance students, however for those registered as regular they would be expected to be physically present always except on permission after notifying the lecturer through the website of the course or by e-mail as to why he/she might not be in class for that lecture otherwise he/she can be marked absent. So here the use of CMS can help the student by sending his message from where he is and not necessarily have to meet the lecturer physically. This enhances flexibility in communication. In addition, the lecturer can view those who have attended the class that day if he/she so wishes through their participatory activities submitted on the web site of the course immediately after his lecture or he can take attendance of students manually either by way of roll call if the students are few or by group if there are many students or by passing a paper for students to write their numbers and/ or names. Also using CMS helps him to have an overview of students who are active in assignments and/ or class activities as every work can be posted by both the lecturer and the students of that course within the shortest possible time and can always be viewed through the website of the course. Thus discipline in class attendance can be maintained much more through the use of CMS than the traditional ways.

Differences between the New-Style Lecture and the CMS
Though much was said in addressing this question, in brief it was made clear that the difference is that the New-style Lecture Scenario is a method of organizing and delivering course content while the CMS is a web-based computer and network software(tool) for supporting the New-Style Lecture scenario and so they can exist independently of one another.

Why not say Lecture Scenario supported by a CMS instead of saying a New-Style Lecture Scenario supported by a CMS?
This question generated a lot of arguments among the participants and , however it was agreed unanimously that although in principles the issue of students doing something before and after the lecture exists, in practice it is not so as the approach is more manageable if it is supported by technology. Also the new scenario calls for more dynamic pedagogies such as collaborative learning, task based learning, and learning by listening, supported by technology.

Online registration
It was unanimously agreed that it is possible for some to register online for the New-Style Lecture if supported by a CMS, as can be seen in the TeleTOP environment.

5.4.5. Part 2: Implications and the implementation plan

These were presented using PowerPoint slides as planned in the presentation paper (Section 4.1). The implications and issues as contained in the paper were thoroughly explained. The points were accepted by the participants and did not attract any serious discussion. The implementation plan was accepted except for the problem of lack of funds for it. However the issue of implementation generated questions that led to some discussions many of which related to financial constraints:

1. How possible is it to implement this scenario supported by technology with the lack of adequate funding of the university?
2. With the problem of power failure every now and then, how can the use of such a product be effective since it needs power to make it functional 24 hours per day?
3. How can such software be acquired? Is it possible to have a collaborative linkage on this with the University of Twente?

The following is a summary of the responses to these questions:

In addressing the first of these questions it was agreed that if a university wants to adopt the use of a CMS there could be many ways of generating funds for that, examples are:

1. Have partnerships with some NGO organizations in and outside Nigeria,
2. Organise a get-together party with the alumni members of the university for an Appeal Funds.
3. The university can organize a fund raising gathering for students' parents, politicians and/or the NGO, telling them the need for ICT facilities for the enhancement of teaching-learning activities in the university.
4. Make an appeal for funds accompanied with detailed plans to the federal government and/or state governments within the university's catchment's areas
5. Go for open source software which is always available
6. Go into partnership with some of the well to do organizations abroad
7. With careful prudence by the management, the university can start something at least at a departmental level using part of the school fees generated.

With regard to the problem of the power supply, already each of the computer cyber cafés has a big generator attached in addition to the school caterpillar generator denoted by the state government. This can always be used in the absence of power supply by NEPA (National Electric power Authority)

With regard to the use of TeleTOP it could be possible to have a link with the University of Twente; the researcher promised to find out the possibilities and communicate the same through Dr. V. V. Apagu.
More on implementation is addressed accordingly in Sections 6.3 and 6.4.1.4 respectively.

5.4.6. Part 3: Demonstration of how a CMS can be used to support the New Style-Style Lecture Scenario

For this part which came last because of the new arrangement, all participants were transported to the ABTI cyber café by the researcher using a commercial bus at 1: 00 PM.
At ABTI things did not work well because the place was overcrowded with customers who came to browse. The sever was very slow, such that to access the TeleTop environment took a lot of time, but yet we were able to have the demonstration although some pages were not easy to open e.g. the setup page, setting a new course roster, etc. However even with all these difficulties the demonstration went on as planned except the activity which was not completely done, though some groups did well, students in particular. Figures 1-2 show the pages used in demonstrating how a lecturer can use a CMS for organizing his course, while Figure 3 shows a picture of participants (lecturers on lower part and also some groups of students at the upper side of the same picture) doing the activity assigned to each of the categories separately. Figures 4 and 5 show some pages of the work done by the participants during the activity session.

Demonstration of the TeleTOP CMS
The figures 8-12 below shows the detail demonstration of the TeleTOP CMS

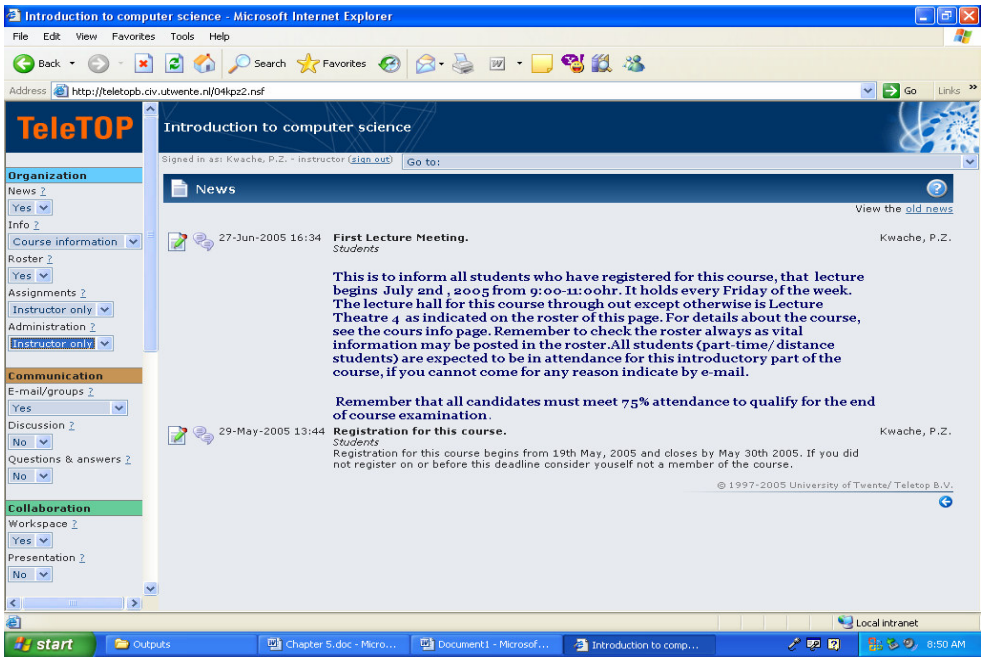

Figure 8. An example of Edit Navigation page and also of a news page

Then using one of the course environments from the TAET Program at the University of Twente the course called Research and Evaluation of Technology Applications for Learning and Performance Support, the researcher explained how to set a news page, course info, web links, archive and roster pages respectively as can be seen in Figure 9.

Figure 9. An example of a roster page of a course.

This part of the demonstration explained how a lecturer and/or a student can use a CMS for the support of the New-Style Lecture Scenario.

Activity using the Teletop environment

This was aimed at testing and evaluating the understating of the participants after a practical demonstration done together with the researcher. Since we were using the commercial cyber café and not that of the university as planned, lecturers and students had to perform the activity immediately after the demonstration and not later, as planned. The lecturers were grouped into three groups:

Group 1. To Create a News page,
Group 2. To create a Course Information page,
Group 3. To add an article to the Web links page

However some of the groups of the lecturers decided to develop a roster page based on their interests (See rows 20, 60 and 70 respectively in Figures 11).

Figure 10. A photograph of some participants doing a group activity with the CMS during the workshop.

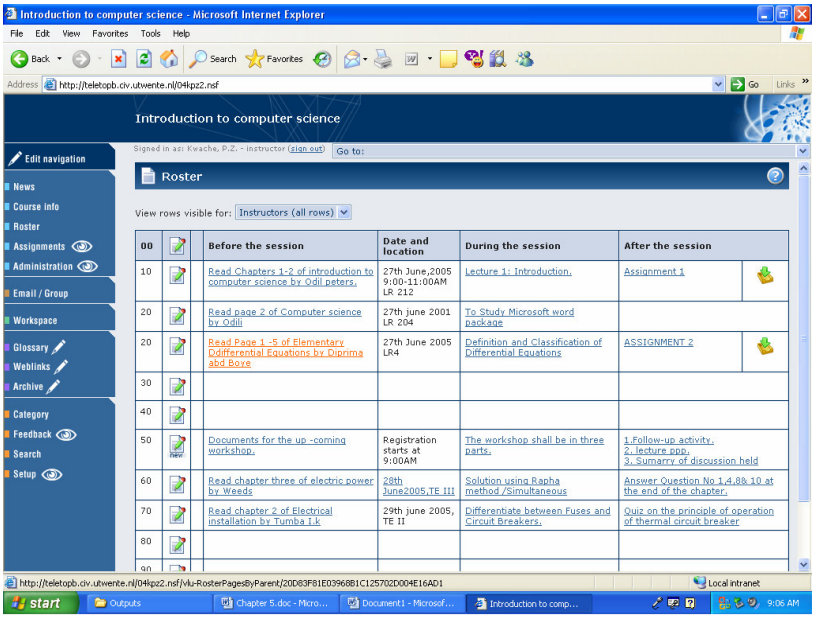

Figure 11. Sample of a roster developed by some of the instructor participants during the Workshop.

The students on their part did Assignment 1 posted by the researcher in the roster page in Figure 11 and was marked accordingly by the researcher with some feedback, see Figure 12.

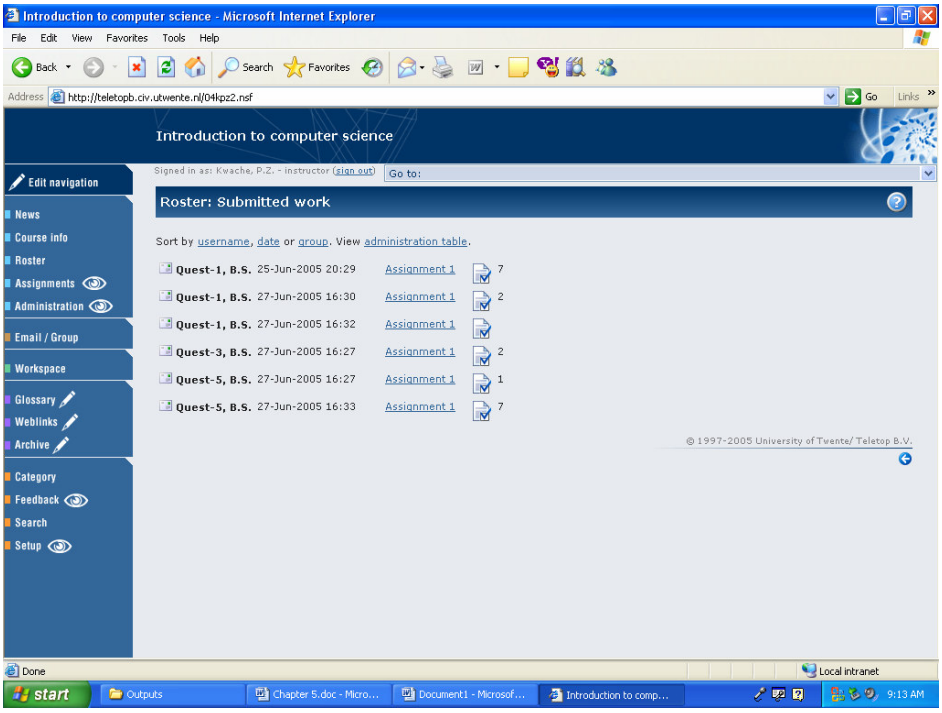

Figure 12. A sample of students' activity during the workshop

Problems encountered in course of carrying out the workshop

There were some problems encountered in organizing the workshop, more so because it was an individual affair and so most of the financial commitments were done by the researcher without assistance from any corner, and so it was not easy.

Since the cyber café center used, uses generator for its power generation, browsing from Internet was very slow and problematic. In fact most of the time one had to browse many times before getting linked to the website requested, this affected the workshop because any time the participants wanted to get to the setup environment using their guest account user name and password, the message was that, "the page cannot be found". This explains why the lecturers had to use the Introduction to Computer Science roster page instead of having a different site for developing their roster, news pages, etc. Furthermore since the university cyber cafés were not functional, the assignment given to the lecturers was not done very well (as expected) as they should have done it immediately after the workshop, because most of them live on campus and the town is far from the university Thus only one or two of the lecturers were able to go to the cyber café the next day and do some work, although the Internet was still slow. The problem was even harder because they had to pay for browsing and they had very limited time. Despite all these problems, the workshop as reflected in the responses of the participants in the post-workshop questionnaire was successful since the goal was achieved. In fact all the participants went back home satisfied and thrilled by their experiences with the New-Style Lecture Scenario supported by a CMS.

5.5. Administering the Post-Workshop Questionnaire

Immediately after the activity by the participants with the use of TeleTOP environment, the researcher distributed the post-workshop questionnaires to each participant except for the ICT technical staff who were not part of the design. The following number of people per category were given the questionnaire:

1. Management Staff 5
2. Lecturers 12
3. Students 8
Total 25

The total number who were given the questionnaire was 25 as against the expected number 30 (being those who responded to pre-workshop questionnaire). Some of the participants instantly returned their completed questionnaires to the researcher, while the remaining ones were collected from their respective heads of department the next day.

5.6. Data Presented and Compared Before and After the Workshop from Each of the Evaluation Instruments

In this section the data collected from both questionnaires and the responses of their respective respondents are described in tabular form in Sections 5.6.1 and 5.6.2 respectively.

5.6.1. Data from the pre-workshop questionnaires

The pre-workshop questionnaire consisted of closed and open ended questions. There were 69 questions in all. Some of the closed type questions have yes/no options while others have multiple choice options. The collected data from this questionnaire is presented in Tables 11-15, section by section of the questionnaire and according to the category of the respondents. First, Table 11 summarized the respondents.

Table 11. Status of the respondents

Categories	**Questions answered**	**Number of respondents**	**Percent of each category represented**
1. Management	1-20 and 69	5	100
2. Lecturer	21-47 and 69	13	65
3. Student	48-60 and 69	10	100
4. ICT staff	61-68 and 69	2	40
Total	**69**	**30**	**75**

Section 1 of the questionnaire (Questions 1-20) was for the Management staffs' data and responses. The responses to Questions 1- 20 are shown in Table 12.

Table 12. An overview of Management's data and responses

Questions	Options	Freq.	Responses
1. How old is your university now?	a) 5 -10yrs b)10 -25ys	5 0	All the respondents agreed that the university is between 10-25 years old, to be precise it was established 1981, and so it is 24 yrs old.
2. What was the goal for establishing the university?	a). To promote teaching- learning of sciences b) To promote teaching-learning of science & technology related c) For all conventional education	5 0 0	From the result all respondents agreed that the goal is to promote the teaching-learning of science and technology related courses.
3. To what level has this goal be achieved?	a) Fully b) partially c) not at all	2 3 0	Result shows that there are two different opinions about the achievement of the goal, however from the frequency table it shows that majority is of the opinion that the goal is not fully achieved.
4. What is responsible for not realizing the goal?	Open-ended		The three respondents attribute this to inadequate funding, insufficiently qualified teaching and technical staff for science and the technology oriented courses
6. What is the total number of students in the university?	a) <5000 b) 5000-10000 c)10000-15000 d) >15000	0 0 0 5	As can be seen all have agreed that the number of students is greater than 15000, in fact from record it is above 16000. This shows that the institution is overcrowded.
5. What is the total number of lecturers in the university?	a) <300 b) 300-400 c) 400-500 d) >500	0 4 1 0	From the frequency table it shows that most of the respondents are of the opinion that the number of lecturers ranges between 300 and 400, only one person thinks otherwise, however from statistical records of the academic planning unit the number of lecturers is 316.
7. Does the university run both regular and part-time programmes?	a) Yes b) No	5 0	All respondents agreed that the university runs both regular and part-time programmes.
8. If yes how many of this are part-time and how many are international?	Open-ended		The respondents have different numbers but from records of the academic planning unit there are 6,562 part-time students while there bout 1,200 international students (though these students mostly are from African neighboring countries with very few from India and Europe/America).
9. Do your students come all over the country for the part-time?	a) Yes b) No	3 2	The result shows that there are two different opinions about this, however from the frequency table the majority is of the opinion that the students come from all over the country.
10.If no, is it restricted to particular catchments areas?	a) Yes b) No	0 5	All respondents accept that the university programmes are opened to everybody, more so that it is a federal institution.
11. Are your programmes supported by e-learning technology?	a) Yes b) No	0 5	From these responses it is very clear that none of these programmes is supported by e-learning related technology.
12. If yes, is the part-time teaching organized on	a) Yes b) No	0 5	Since it is not supported by technology it would be difficult to practice blended leaning.

blended mode?			Hence the responses are negative.
13. If yes what facilities are available?	Open-ended		Since the general opinion is negative it means the basic facilities are not there, though there are Internet cyber cafés (facilities) with reasonable numbers of computers.
14. And if no, does the university have plans to provide e-learning related technology?	a)Yes b) No	5 0	This result shows that the university has plans to provide e-learning technology particularly for its distance learning programmes.
15. Does the university have the required manpower for the use of e-learning related technology?	a) Yes b) No	1 4	This result shows that there are two different opinions however the majority is of the opinion that the university does not have a required manpower for the use of e-learning.
16. What percentage of your lecturers is computer literate?	a) <40% b) 40-60% c) >60%	1 2 2	This attracted three different opinions however it can be drawn from the frequency table that the average percentage level is 50%.
17. Does your library have up-to-date teaching, learning and researcher materials, such as recent textbooks, journals etc?	a) Yes b) No	1 4	As indicated by the majority of the respondents there are not enough recent textbooks and/or journals in the library
18. Is your university library digital?	a) Yes b) No	4 1	There are two different opinions about this, although the majority agreed that the library is digital, the truth is that it is not but a cyber café using Internet facilities is attached to the library, this might inform the four respondents to think that the library is digitalized.
19. If no, do you have plans to make it digital?	a) Yes b) No	- 1	Since the four respondents were of the opinion that the library is digitalized, the options here might be regarded as not applicable (NA) while the one who was of the opinion that the library is not digitalized is of the view that there are plans to digitalize the library.
20. What support does the lecturer and students get related to teaching-learning activities?	a) Moral support only b) Incentives & rewards c)Technology d) All of the above e) None at all	2 3 0 0	The result shows that there are two views about the kind of support given to lecturers and students by the management, however it can be concluded that the management gives moral support and incentives for hard work

Section 2 of the questionnaire involved the lecturers' data and responses.

A description of the data collected and responses from lecturers is presented in two ways: in tabular form in Table 13 and in graphical form in Figures 13 and 14. This section deals with questions 21-47.

Table 13. An overview of the lecturers' data and responses

Questions	options	Freq.	Responses
21. How many courses do you teach in a semester?	Open-ended		The responses to this question range from 3 to 10 courses taken by a lecturer, however majority of the lecturers takes 7 courses in a semester (see Figure 13).
22. Are you comfortable with your lecture load?	a) Yes b) No	3 10	There are two opinions about this, but majority shows that most lecturers are overloaded.
23. If No why?	Open-ended		Most of them said they are over stressed with work as a result of this overload, making them to be "inefficient" as one of the respondents stated.
24. How many students do you teach in a course? a) Regular b) part-time	Open ended		From the results indicated, only two of these lecturers have less than one hundred students per course, in fact the majority have student numbers ranging from 200-900 per course. The part-time students per lecturer in a course range from 10- 700 students, although the majority of the lecturers indicated that they don't have part-time student while full time students range from 10-850 per lecturer in a course. Only two have less than 100 regular students (see Figure 14).
25. How do you organize/deliver your lecture?	a) Listening only b) Collaborative c) a & b d) Discovering/task based e) Mix of the above	1 2 1 0 9	Result shows that one lecturer uses listening only, two use collaborative only, one uses combined listening and collaborative, the remaining 9 use mixed methods. Thus the majority shows that most lecturers use mixed methods of teaching in their respective courses.
26. Do you combine lectures with?	a) Notes only b) Handouts c) a & b d) Lecturing only e) Others	5 0 7 0 1	Results show that five lecturers combine their lectures with notes only, seven combine lectures with both notes and handouts and only one uses a different method.
27. Do some of your students fail to attend lectures?	a) Yes b) No	12 1	Only one of the lecturers says that students do not fail to attend his lectures, while the remaining 12 confirmed that students do some times fail to attend their lectures.
28. Does a student notify you in advance if he will fail to attend?	a) Yes b) No	7 5	From this result 7 out of those 12 who agreed that students do fail to attend their lectures agreed that students do notify them, while 5 are of the opinion that students do not notify them.
29. If yes how?	a) E-mail b) Verbally c) Another means d) Not all	0 4 3 0	This result indicates that there are two ways lecturers are notified by students. 4 are of the opinion that they are notified verbally while the three are of the view that they are informed by another means such as filling in of the exit form (permission form).
30. How often do you give assignments to students in a course?	a)once b) more than once c) not at all d) after every lecture e) test only	1 10 0 1 1	The results show that there are four different opinions here, though the majority as can be seen shows that assignments are given more than once in a course
31.Do you support your	a) Yes	12	Only one person indicated that he/she does not

students with relevant materials for carrying out their assignments?	b) No	1	support his students with relevant materials for their assignments and/or studies while the majority does.
32. If yes how?			This is an open-ended question but the general views of the majority is that they do provide students with references to textbooks, journals, give handouts and some even lecture materials on CD to them.
33. How long does it take you to give feedback to students' assignments?	a) one week after b) two weeks after c)> two weeks d) at the end of the course	2 5 4 2	This has attracted different opinions. 2 seem to give feedback after one week submission, 5 after two weeks submission; 4 more than two weeks and only 2 at the end of the course, however majority is between two weeks.
34. How do you give feedback to students' work?	a) verbally b) in writing c) a & b d) another means	0 5 6 2	The results show that there are three ways by which lecturers give feedback to students, in writing; Verbally & in writing; or by another means (marks only, scripts with comments).
35. Do you have a personal e-mail account?	a) Yes b) No	8 5	Most of the lecturers have a personal e-mail account; however 5 out 13 not having e-mail account suggests that quite a number of lecturers in FUTY may not have an e-mail account.
36. Who is responsible for the payment of your e-mail account?	Open-ended		Every one is responsible for his/her e-mail account.
37. How often do you patronize the Internet?	a) once in a week b) daily c) after every two weeks d) not at all e) when opportune	1 2 1 1 0 8	This has different opinions, however the majority is of the opinion that they only patronize their e-mail accounts when opportune, and only two out of the13 lecturers do that on a daily bases.
38. Do you have a computer in your office?	a) Yes b) No	4 9	Only 4 have indicated that they have computers in their offices while the majority does not have at all.
39. If yes is it connected to Internet?	a) Yes b) No	- 4	None of the 4 computers is connected to internet.
40. Do you use computer in teaching your course now?	a) Yes b) No	4 9	only 4 lecturers agreed that they use computer in teaching.
41. If yes in what ways?	Open-ended		The 4 who have computers indicated that they use it for presenting lectures in PowerPoint via digital projector.
42. What computer skills do you need in order to effectively integrate ICT into teaching-learning activities?	Open-ended		Most lecturers indicated that: 1. They need word processing 2. Network training 3. Programming techniques 4. Majority suggested that they need training in computer packages and word processing
43. In what ways are you supported by either your faculty or institution in carrying out your teaching assignments?	Open-ended		Most of lecturers are of the opinions that they are being supported 1. Morally 2. With teaching aids and materials and with the 3. Provision of means for producing handouts.
44. Do you have access to recent journals?	a) Yes b) No	8 5	The majority has indicated that they have access to journals, although most of them earlier indicated that they only patronize the Internet when opportune.

45 If yes how do get them?			Most of them indicated that they get them through the Internet; only a few stated that they

			are registered with the relevant associations' bodies for the journals.
46. When did you last did publish in a journal?	a) <5 ys ago b)> 5ys c) Never at all	9 3 1	This has attracted three different answers. However the majority have published in a journal less than five years ago, only one indicated that he/she has never published anything at all, while three indicated that for a long time they have not published in journals.
47. If b or c why?	Open-ended		The reasons advanced by those who had never published and those who had not published for a long time are: 1.Lack of relevant materials 2. Overloaded with work.

The histograms in Figures 13 and 14 reflect courses taken by a lecturer in a semester and the number of students in some of the courses handled by a lecturer per semester respectively. This clearly shows that the lecturers as reflected in the data collected are overloaded and with too many students to attend to.

Figure13 shows the number of courses taken per a lecturer in a semester.
The frequency on vertical line (Y-axis) indicates the number of lecturers while the numbers (0-10) on the horizontal line (X-axis) indicate the number of courses taken by a lecturer in a semester. From this histogram it is clear that the majority of lecturers who responded to this question has seven courses in a semester at a time, two have 8 and in fact one person has 10 courses. Thus a lecturer on the average has 6 courses in a semester, this is overload.

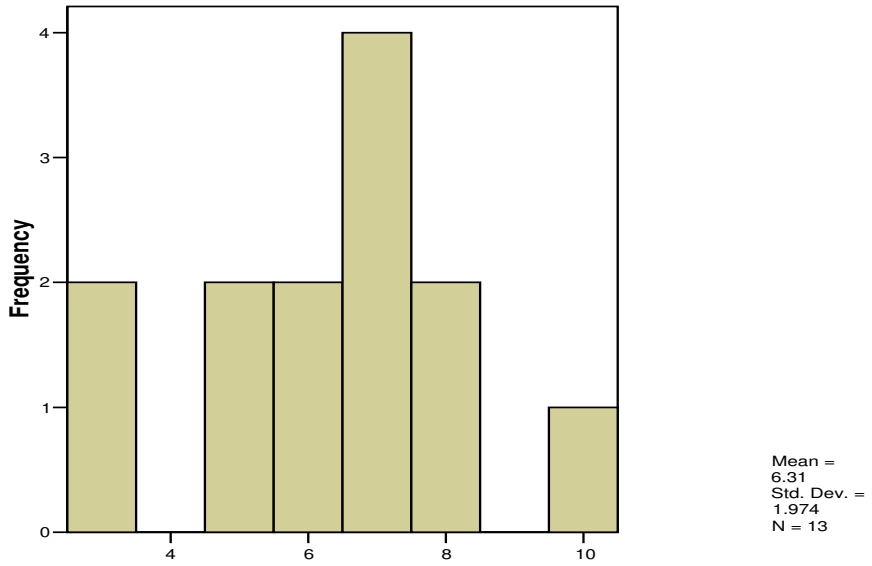

Figure 13. Showing the number of courses a lecturer has in a semester.

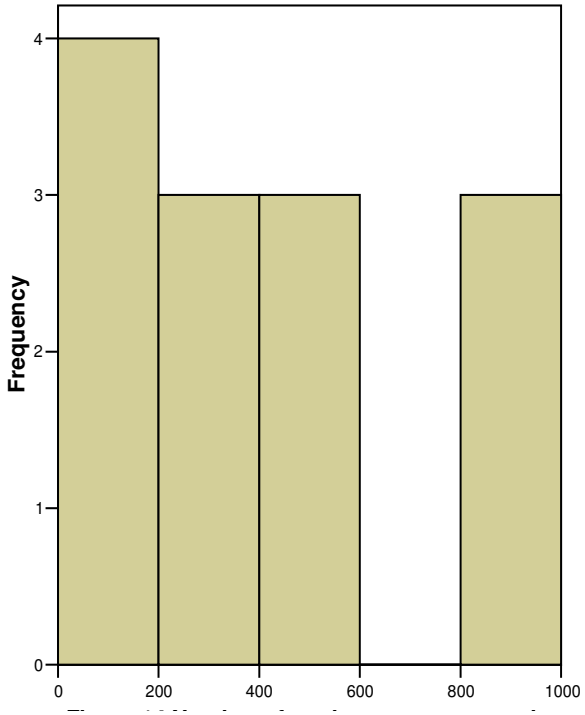

Figure 14. Showing students per a course per a semester.

The frequency on the Y-axis represents the number of courses, while the numbers (0-1000) on the X-axis represent the number of students per a course in a semester.
It is clear that most if not all the courses are overcrowded with students.
Section 3 of the questionnaire involved questions for the students. The results of the data collected from students from Questions 45-60 are shown in Table 14.

Table 14. Description of students' responses

Questions	**options**	**Freg.**	**Responses**
48. Are you an off-campus or an on campus student?	a) On campus b) Off-campus	4 6	The result reveals that 6 as against 4 are off-campus students, sixty percent of the respondents are off-campus students
49 Have you ever failed to attend a lecture?	a) Yes b) No	7 3	Seven out of the 10 respondents agreed that they have on some occasions failed to attend lectures, while three said no they had never failed to attend a lecture. It can be said from the results that the majority of students do fail to attend lectures; this is in confirmation of the lecturers' opinion.
50. If yes what were your reasons?	Open-ended		Reasons advanced by those who do fail are: 1. Sickness and family problems 2. Travel related 3. Clash of time-tables 4. Official engagement in office 5. Missing transport
51. Do some of your lecturers fail to attend lectures?	a) Yes b) No	10 0	All the students agreed that lecturers do fail to attend their own lectures
52. If yes, do they inform you ahead of time?	a)Yes b) No	4 6	This shows that some lecturers ahead of time inform the students of their absences from subsequent lectures
53. When they fail, do they compensate missed lectures?	a) Yes b) No	0 10	All the respondents agreed that lecturers do not compensate their missed lectures.
54. How do you get access	Open-ended		All the students who indicated that they do miss their

to lecture materials that you have missed?			lectures sometimes said they get access to missed lecture materials by copying of notes from classmates and photocopying of related handouts.
55. Do you have an e-mail account?	a)Yes b) No	2 8	This result shows that only 2 out of the 10 responds indicated that they have e-mail accounts while the majority does not have.
56. If yes who pays for your e-mail account?			These two responds indicated that they are responsible for their e-mail account.
57. Do you get some materials from the Internet for assignments or other wise?	a) Yes b) No	3 6	Only three indicated that they do get materials from the internet, while 6 said no. One of these respondents was neutral in answering this question while one of those who said yes was among those who do not have Internet account but yet get some Internet materials, perhaps from friends. See figure 15.
58. If no, how do you get materials for your studies?	a) handouts only b) textbooks c) lecture notes only d) library e) others specify (Internet)	2 0 3 2 3	These results show that there are basically four sources from which the students get their materials for assignments and studies, most depend on lecture notes and Internet though only few have Internet accounts.
59. Do you get detailed feedback from you submitted assignments?	a)Yes b) No	4 6	The result indicates that only 4 students agreed that they get detailed feedback while 6 of the respondents indicate that they don't get detailed feedback.
60. If yes, what kind of feedback?	a) verbal b) in writing c) marks only d) others(scripts)	1 2 4 3	There different ways by which students get feedback of their submitted work, most of them agreed that they get marks and scripts back but with no detailed comments.

Figure 15 shows the sources of students' materials for assignments and studies. The frequency on Y-axis indicates the number of students, while the key explains what each number on X-axis stands for.

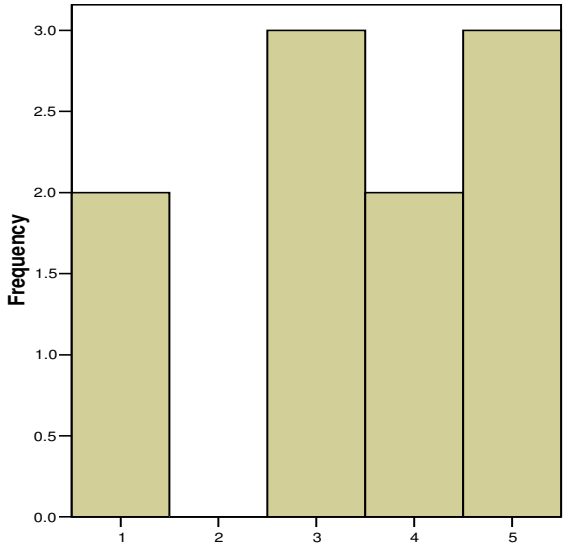

Figure 15. Showing students other source of materials for assignments

Key
1. Handouts only
2. Textbooks only
3. Lecture notes only
4. Library.

5. Others.

From this figure 15, the majority of students depend mostly on lecture notes and other sources of materials and this could mean the Internet.

Section 4 of the questionnaire included questions for the ICT technical staff.

The responses to Questions 61-68 are tabulated in Table 15.

Table 15. Description of the ICT staffs' responses

Questions	Options	Freq.	Responses
61. Does your department have required ICT related facilities for e-learning technology (CMS)?	a) Yes b) No	0 2	Result shows that the university does not have required ICT facilities, as this confirms the management's majority opinion.
62. If yes what kind of e-learning technology is available?			This by implication of the result above in 61, there are no e-learning related technology facilities
63. Do you suggest the use of e-learning related technology (CMS) in teaching and learning activities in the university?	a) Yes b) No	2 0	The ICT technical staff supports the use of e-learning (CMS) technology in the university, and by our discussion they are ready for it.
64. How many computers are there in the laboratories?	Open-ended		This is an open-ended question however from their opinions it ranges from 25 to 50 PCs. Most of the cyber cafés inspected have at least 20 PC each but I did not visit the major computer center.
65. Does the university have enough printers for staff and students' use?	a)Yes b)No	2 0	The respondents unanimously agreed that there are enough printers for the use of lecturers and students
66. Is printing free for lecturers and students	a)Yes b) No	0 2	The result shows that the use of the printers is not free.
67 Does the university have computer network experts?	a)Yes b) No	2 0	The respondents unanimously agreed that there are network experts.
68. Does your department have required manpower for establishment of e-learning related technology in the university?	a)Yes b) No	2 0	Although the respondents agreed there are no enough required ICT materials, this shows that few experts are there.

Section 5 consisted of only one question, Question 69, which was a general opportunity to comment on any issues related to the staffs' general knowledge of computer, ICT and network technology. Table 16 describes the views of the respondents by category for this general question which was only responded to by a few of the respondents.

Table 16. Respondents' view on the general question (#69)

Categories	Freq.	Responses
1. Management Staff	2	Only 40% of the respondents attempted this question. The comments of the two are: 1."The university needs friendly Academia-Academic international partnership/linkage in educational multi-media ICT programmes for both residential and open/distance learning students(trainees/learners)" 2. "FUTY has been selected as one of the Nigerian universities by the Endowment Consortium Foundation (ECF) for ICT integration in education and capacity building".
2. Lecturers	6	About 48% of the respondents in this category made some comments and it can be summarized as follows: 1.That Lecturers' and students' general knowledge of computer and use of ICT related technology is low. 2. That lecturer needs training on word processing and relevant computing packages. 3. That there should be a mass training of lecturers in computer use and networking.
3. Students	4	In this category 40% of the respondents made comments and in summary the comments are just the same as the comments made by lecturers in row 2 above. Their emphasis was on training of both staff and students on computer use, and information and communication technology (ICT).
4. ICT Technical staff	2	Both respondents in this category made a comment and they all centered on need of staff training and procurements of ICT facilities for e-learning related technology.

5.6.2. Data from the post-workshop questionnaire

The post-workshop questionnaire consisted of two main types of questions, closed and open ended questions. The closed type is of two kinds, questions with yes/no options and those with multiple choice options. The data collected from this questionnaire is hereby presented section by section and according to each category of the respective respondents' responses. Table 17 shows the respondents.

Table 17. Status of the respondents for post-workshop questionnaire

Categories	Questions answered	Freq.	Percentage
1. Management	1-13	5	20
2. Lecturer	14-25	12	48
4. Student	26-29	8	32
Total	30	25	100

Section 6 contained questions for the Management Staff. The data collected from the management staff are presented in Table 18.

Table 18. Description of Management staff' data and responses.

Questions	Options	Freq.	Responses
1. What is your opinion about the New-style Lecture scenario?	a) positive b) negative c)no opinion	5 0	The management opinion is positive about the scenario
2. Which of the phases of the New-Style Lecture do you consider more effective for teaching-learning activities in a course?	Open-ended		All respondents agreed to all of the phases
3. Do you think the use of the New-style Lecture supported by CMS can solve the problem of poor lecture attendance?	a) Yes b) No	5 0	The result shows that the New-Style Lecture scenario supported by a CMS can solve the problem of lecture attendance
4. If your answer in question 3 is no, why do you think so?	Open-ended		Since all responses to Question 3 are positive this question is no longer applicable.
5. Is it possible for the institution to adopt the New-style Lecture Scenario supported by a CMS?	a)Yes b) No	5 0	All the respondents are positive about that.
6.If your answer in 5 is no, what do you consider to be the hindrances for not adopting it?			Since their opinion is positive they did not comment on this question
7. What alternative technology would you suggest for the support of teaching-learning activities if CMS cannot be implemented?	Open-ended		The same as in question 6 above
8. Which of these aspects of CMS can be implemented in the university now?	a) Internal e-mail b) Roster c)Assignments and feedback d all of the above e) a & b f) None of the above	0 0 0 3 2 0	On this, there are two different opinions; however the majority agreed that all its aspects can be implemented and even the other two have an almost similar view.
9. To what extent do you think the use of a CMS can support lecturers when performing teaching?	a) High b) Low c)No opinion	4 0 1	4 out of 5 of these respondents agreed that support of lecturers by CMS is high and only one indicated no opinion.
10. Would you recommend the use of a CMS to support lectures in the university?	a) Yes, definitely b)Yes, but only in some vases c) No opinion d) Not all	2 3 0 0 0	Here the respondents have two opinions though not completely different but the majority agreed that the use of CMS can be recommended in some cases. When asked they said it would help distance learning most.
11. Would you recommend a workshop for introducing the idea of the use of CMS in a university?	a) Yes b) No	5 0	The respondents all agreed to the option of using a workshop for the introducing the idea of a CMS in a University.
12. If your answer in 11 is no, why?			Not applicable since their opinion in #11 is positive
13. Suppose a university wants to implement the use of a CMS how would it arrange for that?	a) organize a workshop b) go ahead without a workshop c) arrange with a CMS vendor d) design its own	3 0 0 2	Here there are two different opinions on this question, but the majority is of the opinion that the university should arrange for a workshop.

Section 7 included the lecturers' questions (14-25). The data and results of the lecturers' opinions are stated and analyzed in Table 19.

Table 19. An overview of lecturers' responses to the post-workshop questionnaire

Questions	Options	Freq.	Responses
14a Would you like to adopt the New-style Lecture Scenario in delivering your lecture? 14 b. Explain you answer	a) Yes b) No	10 2	Ten out of the 12 respondents agreed that they would like to adopt the New-Style Lecture scenario in delivering the courses
15. Would you like the use of CMS to support your lecture?	a) Yes b) No	12 0	All agreed that they would like the support of a CMS
16. What is your general impression of the use of CMS in teaching and learning activities?	a) +Positive b) –Negative c) No opinion	12 0	Hundred percent have a positive view about the use of CMS in teaching and learning activities
17 what is your personal feeling about working with such a tool?	a) satisfying b) frustrating c) no opinion	11 1	Only one feels frustrated with the use of CMS and this one I suppose might have been a latecomer to the workshop so he might not have understood what the New-Style lecture approach is all about.
18. How would you rate the interactive activity using the CMS(TeleTop)?	a) Good b) Poor c) No opinion	12 0	All those that participated in the workshop indicate that the interactive activity was interesting, as everyone had something to do.
19 To what extent do you think that the CMS task procedure matches the common practice of lectures?	a) low b) no opinion c) high	3 3 6	Here they have different opinions; three says low and another three had no opinion while the 6 were of the opinion that it was high.
20. Does the use of a CMS in teaching cater for students who are physically absent from a lecture?	a) Very Much b) Not at all c) Partially	7 0 4	In response to this question there were two opinions, however the majority were of the view that the use of CMS carter very much for students who might be absent from lectures.
21. How would you rate the ease of use of a CMS in carrying out the New-Style Lecture scenario?	a) Good b) Fairly good c) Poor	9 3	On this question there were two different opinions as it relates to the ease of use of the CMS (TeleTOP). The majority however is of the opinion that the ease of use is good.
22. To what extent do you think the CMS is useful for the New-Style Lecture Scenario?	a) Low b) No opinion c) High	0 1 11	The result indicates that the CMS is useful for the New-Style Lecture Scenario.
23. To what extent does the use of a CMS complement the use of the face-to- face method as it relates to the New-Style Lecture scenario?	a) High b) Low c) Neutral	8 0 4	Here results show that there are two opinions also, although the majority indicates that the use of CMS can complement the face-to-face lecture highly while four are neutral.
24. Would you recommend the use of a workshop for introducing the use of a CMS as part of implementation process in a university?	a)Yes b) No	12 0	On this question the respondents opinion is hundred percent positive which means they unanimously recommend the use of workshop as part of the implementation process in a university.
25. As a lecturer would you recommend the use of computer-based support such as CMS for teaching and learning activities in a university 25b. Please explain your answer.	a) Yes b) No	12 0	Hundred percent of the respondents recommends the use of a computer web-based tool like the CMS for teaching and learning activities in the university.

Section 8 involves the data from the students to Questions (26- 29). The responses are tabulated in Table 20.

Table 20. An overview of students' responses to the workshop

Questions	Options	Frq.	Responses
26. a) Will the use of New-style Lecture Scenario supported by a CMS help in your studies? b). Please explain your answer	a) Yes b) No	8 0	All respondents agreed that the use of New-Style Lecture Scenario will help them in their studies because according to them it makes the "learner active and resourceful".
27. Which phase of the New-Style Lecture do you consider most important to your studies?	a)Before the session b) During the session c) After the session d) All of the above e) none of the above	1 1 0 6 0	There are three opinions as regards which of the phases of the New-Style Lecture the respondents consider important, one for before the lecture session, one for during the lecture session while 6 which is 75 % of the respondents is of the opinion that all are important.
28. Do you consider a CMS to be relevant to your studies? b) If yes, how?	a)Yes b) No	8 0	Hundred percent of the respondents considers CMS relevant to their studies because it provides for communication among students and their lecturers.
29. Would you recommend the use of New-Style Lecture supported by CMS in learning related activities?	a) Yes b) No	8 0	On this question, all the respondents agreed to recommend the use of the New-Style Lecture Scenario supported by CMS.

Section 9 involved one general question which was to be answered by all categories of the respondents defined in Table 17.

Table 21 gives a description of all categories and number of respondents in each of the cases.

Categories	Freq.	Responses
1. Management	3	60% of the respondents in this category made comments on the general question as follows: 1. "Learned about a new style of teaching using computers and internet" 2. Another person commented as "the workshop has opened up my scope in the field of modern technology and how effectively it can be used in teaching" 3. While one of them said "Learned about the application of CMS in teaching".
2. Lecturers	5	In this category only 42% made comments on the general question above. Their views can be summarized as follows: 1. " Understood the CMS more than before the workshop and how it can be used to support the New-Style Lecture Scenario" 2." Learned a new method of presenting a lecture so that a learner is made active in learning" 3. That the use of CMS makes "learning more interactive, flexible and exposes students to self-study" 4. Learned that by the use of CMS workers or people who may find it difficult to come to class lecture can be supported.
3. Students	8	Interestingly all respondents in this category commented on this question. Here are their comments. 1. That the New-style lecture Scenario encourages students' active participation in the lecture which is different to old method 2. That the New-Style lecture supported by a CMS makes things flexible both for students and lecturers themselves 3. "Learnt how to use the Internet in studying", 4. That by using CMS the problem of overcrowding at lectures can be minimized 5. That lecturers using this new scenario "will benefit from materials/information that students may feed him with."

5.7. Interpretation

In this section the data that was described and analyzed in Tables 12-21 in previous sections are interpreted.

In the pre-workshop questionnaire and based on the responses made by the respondents it means from the view of the management, lecturers, ICT staff and students that the following facts can be deduced:

1. General information about FUTY is:
   - The university is 24 years now
   - The goal is to promote teaching of science and technology related courses which still is on course but much is desired in times of teaching-learning process for the full actualization of this goal
   - That FUTY is overcrowded with students making learning very difficult as some lectures are usually overcrowded,
   - That lecturers are over loaded with courses with many students to attend in each of the courses,
   - That FUTY lacks sufficient ICT facilities and its related manpower, though there are few experts that could manage ICT activities at a small scale for now,
   - That FUTY runs regular, part-time and distance learning programes and each of these programmes especially the part-time and regular programme are overcrowded with students hence a call for e-learning related technology if the goals and objectives of these programme are to be achieved.

2. The issue of poor lecture attendance.
   It is an established fact that lectures generally are poorly attended by both students and the lecturers and that missed lectures are never compensated.
3. That most of the students are off-campus due to lack of adequate accommodation.
4. There are no enough primary source motivating materials for teaching, learning and research activities as the library has no up-date- primary source materials.
5. That the level of the lecturers' and students' computer, Internet and network knowledge is low, however another interesting thing is that lecturers use mixed pedagogical approaches in delivering their lectures.

In the post-workshop questionnaire data and based on the responses made by the respondents it means from the perspective of the management, lecturers and students that:

1. The idea of New-Style Lecture Scenario supported by a CMS is a good idea; this is in line with the experts' view who evaluated the scenario during its pilot demonstration (see Section 4.4.)
2. That the new scenario was accepted by all the respondents and would be good for a university, in particular FUTY.
3. That the use of the New-Style Lecture Scenario supported by a CMS would help solve the problem of poor lecture attendance, as provisions are made for students to access not only lecture materials but other materials from other sources as well.
4. That the use of a CMS for teaching complements the traditional face-to-face method and for FUTY it will be a good support for lecturing and learning activities.
5. That the idea of using a workshop for the introduction of the use of a CMS in teaching and learning activities in a university is recommended.
6. That the university would appreciate going into partnership with the University of Twente for TeleTOP and other ICT related activities.

Further more comparing respondents' opinions to questions #14 and # 63 in pre-workshop questionnaire and their responses to question # 5 in the post-workshop questionnaire implies that

the university is in dear need for a computer and network-based technology for the support of teaching and learning activities in the institution.

5.8. Conclusion

From the data described and responses analyzed from both pre-workshop and post-workshop questionnaires it can be concluded that FUTY, and in fact every university in Nigeria, needs an e-learning web-based related technology for the support of teaching and learning activities. Although much is required to be put into place in terms of ICT related facilities and manpower, however, with its available Internet facilities and computers, given intensive workshop and training of a few lecturers and ICT technical staff on the ground, the university can start experimenting the use of a CMS for teaching- learning activities bearing in mind the implementation plan suggested in Chapter 4. Another thing worth mentioning here is that the use of a workshop for introducing the idea of a Course Management System or any e-learning related system is a good idea.

6. Recommendations and Conclusions

In this chapter reflections on the New-Style Lecture Scenario and suggested uses of the CMS (Section 6.1) are briefly made, reflections based on the evaluation results (Section 6.2) are considered, recommendations to the university -FUTY and beyond- (Section 6.3) are made, a review of the research questions and recommendations to other researchers (Section 6.4) are given; and implications of the research to the researcher's future work (Section 6.5) are described. Conclusion-personal reflections on the study (Section 6.6) are noted.

6.1. Reflections on the Scenario and Suggested Uses of the CMS

This section gives an overview of reflections on the NSLS supported by a CMS.

The New-Style Lecture Scenario (NSLS) supported by a CMS discussed in Section 4 is designed based on the literature (theoretical framework) described in Sections 3.1.2, 3.4; 3.5 and 3.6, and in the context of this study. In this new method, the lecturer and the students are engaged actively and on a continuous basis in learning-content creation and knowledge construction as each party has one or more teaching - learning related activities to do before, during and after the lecture. This means the NSLS is characterized by three phases in which learning takes place.

Although the scenario suggested could be employed without necessarily the use of technology (particularly to a small group living on campus) it would not be easy and fruitful in the case of FUTY without the application of network technology, this is so because almost every course is overcrowded and with more than fifty percent of the students being off-campus. Furthermore there are many part-time students in each of an instructor's courses (see Section 5.7).

It is on these bases that the NSLS proposed in this study was demonstrated through a workshop to some key stakeholders of FUTY using a CMS (TeleTOP) so that they could see, test and even practice (although not much) the use of technology in supporting such a approach in lecture delivery and learning activities. This new approach to lecture delivery as discussed in Section 4.1.4 has a lot of implications for every category of users.

For the management it means extra cost as it would in addition to procurement of the system and its associated facilities, incur extra expenditure for maintenance purposes; more moral/incentive support to lecturers and periodic training of the primary users (lecturers, ICT technical staff and students). However, with time there would be a return on investment (ROI) from school fees as the practice would attract higher enrolments of students and patronage from other organizations in and around the university. More so it will promote academic excellence in the institution as the lecturers' productivity will increase and so students' achievements will accelerate. For the lecturers, it would mean time investment, but yet job satisfaction. While for the students it would mean more responsibility for their studies as they become knowledge constructivists but yet learning becomes more interesting and achievable, thus making them fit into the today's knowledge economy society.

The NSLS supported by technology suggests that maintaining a high-level of learning in an institution like FUTY requires characteristics in teaching necessary for a strong lecturer-student relationship; accordingly it is then required of a lecturer to:

1. Encourage students learn by providing effective tools and means such as constructive feedback to enhance student-lecturer interaction and learning. Thus it is important that

students' assignments and tests be designed well and that students' work be returned to them in a timely manner so as to encourage continuous learning.

2. Maintain a balance among teaching, advising, coaching, and research and service so that a lecturer does not see himself only as an instructor but as a mentor, facilitator, and a coach to his/her students.
3. Ensure that the classroom climate and its structure should include student interaction and time for clarification both in and outside the lecture session, as this will in turn encourage active student participation in learning and knowledge construction.
4. The lecturer should adopt methods that when used properly, lead to a high level of learning by the students, thus assignments and course strategy must be made clear to students. Also the instructor must create opportunities for students to seek help at all times.
5. The lecturer should relate course material to other courses and applications and demonstrate linkages in knowledge and understanding so that students will be able to connect various learning experiences together from all of the courses he/she is participating in.

Thus practicing this NSLS means to the lecturer developing a new personal teaching approach that will help him monitor the progress of his students either individually or in groups, apply effective teaching strategies and advance ideas that will improve students' learning.

For the student the NSLS would mean:

1. Inculcating academic integrity, respect and civility. This means the student assumes honesty and integrity in his academic work, a high level of respect for his lecturers and peers, and is willing to think, and to openly discuss a wide range of ideas and opinions with his mates either collaboratively or otherwise. This is in line with the Nigerian learning culture (see Section 2.2.3)
2. By this new approach, it will be required of students to cultivate self-discipline, and a strong desire to learn, and to relearn in order to progress. By doing that, the student will develop strong work/study principles (ethic).
3. Manage his time wisely. By the new approach it will be expected of a student to organize his time wisely and use the same in carrying out his assignments as required, and have sufficient time to assimilate knowledge both for assignments, tests and examination.
4. Participate actively in class activities. This means complete class attendance is required even if the student is not able to always be physically present. The before the lecture session for instance helps students to prepare out of class by engaging in readings of relevant / related materials for the up-coming lecture, doing assignments and/or revising past lectures, seeking for more relevant resources so that during the lecture session discussions related to these are made. This further reinforces learning and knowledge construction.
5. For those students who for obvious reasons would be absent from lectures, they should take the opportunity to view class discussions held and also be able to contribute by sharing their own ideas/opinions with others over the website of the course.

All these can not be achieved maximally without the support of a technology; hence the need for a CMS to support the NSLS.

6.2. Reflections Based on the Evaluation Results.

In this section, reflections related to the evaluation results from the two instruments are drawn in subsections 6.2.1 (pre-workshop questionnaires' results) and 6.2.2 (post-workshop questionnaires' results), then a conclusion is made.

6.2.1. Reflections based on the results from the pre-workshop questionnaires

From Section 5.6.1 (Tables 12-16) and Section 5.7, it can be concluded that:

1. The goal for establishing the university is to promote the teaching-learning of science and technology related courses, this however, as revealed in the results has not been fully achieved due to inadequate funding, and insufficient qualified teaching and technical staff.
2. That the lecturer-students ratio is very low (meaning few lecturers to many students).
3. That most lectures (both regular and part-time programmes) are overcrowded.
4. That most lecturers take too many courses in a semester at a time, this according to the results makes them inefficient and so learning by implication is low.
5. That most of the university's students are off-campus largely due to inadequate accommodation in the institution and in some cases the students cannot afford the hostel fees, while on the other hand some preferred to stay off-campus because the hostels are overcrowded and so unhealthy.
6. That both the students and lecturers do some times fail to attend lectures due to poor organization (clashes of time-table and inadequate facilities in lecture halls), natural causes (such as illness, family problems), travels on official duties and other office engagements (for those who are schooling yet working).
7. That missed lectures are not usually compensated.
8. That assignments and their associated feedback which are meant to orient students and reinforce learning are inadequately done due to the fact that the lecturers are overloaded and with too many students to attend.
9. That the university library has no up-to-date motivating resource materials for its teaching-learning related activities, and so students depend mostly on lecture notes and handouts.
10. That most lecturers and in fact only a few students patronize the Internet for teaching-learning materials as most of them don't have e-mail accounts, and for the few that have, they are responsible for their e-mail accounts and so they only patronize the Internet casually.
11. That most lecturers for lack of time and financial constraints cannot publish articles in academic journals.
12. That although the lecturers and students get moral support and rewards for hard work, they do not get technology support for teaching-learning despite the fact that FUTY has cyber cafés. These are not usually patronized as they are commercialized thus only a few can afford them, furthermore most of the time the cyber cafés due to one reason or other are usually down (ineffective).
13. That most of the lecturers and students are computer illiterate, and request for training in some computer and ICT related packages/Internet use respectively.
14. FUTY has limited ICT facilities with few computer and network experts.
15. Despite all these shortcomings in ICT related facilities, the respondents recommend the use of e-learning technology in teaching-learning activities in FUTY.

In sum FUTY needs a learning scenario that can be supported by technology.

6.2.2. Reflections based on the results from the post-workshop questionnaires

It may interest the reader to know that this questionnaire was designed to find out the respondents' opinions related to the relevance of the NSLS and the uses of a CMS to FUTY's stakeholders as individuals and to the university as a whole, after the respondents had gone through a workshop on the New-Style Lecture Scenario (NSLS) supported by a course management system (CMS) using the TeleTOP environment of the University of Twente in the Netherlands. From the results described in Section 5.6.2 (Tables 18- 21) and Section 5.7, it can be inferred:

1. That the New-Style Lecture Scenario is a good idea and ideal for the institution and in fact for any university in Nigeria and so both the management and the lecturers accept practicing it for teaching-learning activities in their subsequent lectures.
2. As regards which of the phases are relevant to their respective situations, almost all the respondents are of the opinion that all the three phases are important and relevant.
3. That the use of NSLS supported by a CMS will alleviate the problem of poor lecture attendance as students who are physically absent due to some genuine reasons could have access to lecture materials, this in turn solves the problem of not compensating missed lectures.
4. The management and the lecturers have indicated their willingness to adopt the NSLS supported by a CMS, although as regards which of the aspects of CMS should be adopted, the majority show that all aspects are favored. However some are of the opinion that the use can be started with e-mail and roster pages (piecemeal approach).
1. 5 That the use of a CMS is complementary with the face-to-face lecture method, and also matches the common practice of lecturers. Based on this, the respondents recommend its use in teaching-learning activities in FUTY and in particular and in Nigerian universities more broadly.
5. That the idea of NSLS supported by a technology can be introduced in a university by organizing a workshop.

Based on the results from pre-workshop questionnaires and post-workshop questionnaires (Appendices 4 and 5) analyzed in Section 5.6.1 (Tables 12-15), and the points enumerated in Section 6.1, it means that, although FUTY has no adequate ICT facilities and its related manpower for the use of telelearning related technology, but because of her present situation as revealed by the results of these questionnaires (overcrowding of lectures, lecturers overloaded and with different programmes particularly distance learning and part-time) it requires a new approach to lectures (NSLS) supported by the use of a technology and in particular a CMS for the support of lectures and learning.

6.3. Recommendations to the University: FUTY and Beyond

In this section an attempt is made to address the general question of this thesis which is:
How can a "New-Style Lecture Scenario" supported by a CMS be implemented as a potential solution for the support of teaching –learning related activities in FUTY, Nigeria?
Despite the known limitations and inadequacies of lectures, they will still remain the primary means for learning and transfer of learning experiences in institutions and/or corporate bodies (Barker, 1997). This is particularly the case in situations like that of FUTY where access to recent books, journals and periodicals is not feasible because the library has no such books. And where they are available, they are usually too expensive for students to buy. In such a situation it means that lectures will continue to be used as a primary teaching -learning vehicle for some time to come. Because of this strong belief in the importance of lectures as a primary teaching mechanism, the researcher therefore argues for new approach not to replace the lecture but to extend it that can be extensively be supported by computer web-based technology -the CMS.

This, in my own opinion will be one of the ways lecturing and its related tutoring/monitoring activities can be fostered in FUTY and in fact in all the Nigerian universities. This, in addition to Section 3.1.2, Sections 3.2, 3.3, Section 4.1.3 and Section 5.7 forms the basis for my recommendations, which are:

1. That it is timely for FUTY and in fact for all Nigerian universities to adopt the New-Style Lecture Scenario (NSLS) supported by a CMS. This is because the use of a CMS will increase
   - Flexibility to all those wishing to further their studies but constrained by time and distance, thus accommodating more learners and each can learn at his/her pace.
   - It matches common practice of lecturing as it complements the face-to-face method either in blended mode or otherwise. This further suggests that the web-based instruction replicates and virtualizes all the key learning activities that occur in the traditional class room-based and distance education learning settings (environments).

Thus the adoption of a CMS now for the support of teaching-learning activities in FUTY and of course in all Nigerian universities is highly recommended.

2. That the management as matter of urgency in addition to other ICT facilities on the ground should procure more computers, networking equipment and Internet related facilities.

3. That lecturers' training/workshop be organized. To be able to meet the new expected learning scenario that goes along with flexibility, creativity, self-discipline, and autonomy, means that lecturers need to be acquainted with appropriate competencies and skills to cater for the learners' needs. That is, their role has to be redefined to one of guiding and coaching rather than information and communication delivery officers. Thus, lecturers need to master the use of this ICT-based learning technology not only technically but pedagogically as well. This training becomes an absolute priority for effective implementation of the NSLS supported by the technology innovation (CMS). After having been trained in basic required computer knowledge and ICT application skills, lecturers as immediate end users should be involved in the development /or selection of the software that would be used. User-friendly authoring packages if implemented on affordable PCs allow schools and individual lecturers to produce their own course material. This will make them familiar with authoring systems, and it also suggests that there should be collaboration between them and the publishing houses from the early stages of software development so as ensure that tools are customized more completely towards the pedagogical needs. This point leads to suggest that there are some competent network-learning professors (experts) in the Netherlands with a wealth of experiences that when contacted will be ready to come over to Nigeria and train lecturers and ICT staff on the design, use and implementation of ICT related technology and its associated pedagogies. The university or the NUC in partnership with these people can do something that will revolutionize the entire teaching-learning process in the Nigerian universities. When this is done the trained people become resource persons/trainers for subsequent training that may be required periodically.

4. That adequate funds generation occurs. One of the most frequent complaints of every institution in Nigeria is lack of adequate funding. While that could be true (I have reservations about this complaint as I think differently about that), I wish to suggest that the institution can organize a fundraising banquet for alumni members of the university, NGOs, politicians and other well to do individuals that have interest of education at heart. During this time, the university can present her appeal for funds justifying it with relevant data. Furthermore, based on the efforts made by the university towards funds generation for the project and with the much that has been realized so far, the university can present a financial request along with her master plan on the project through the NUC to the federal ministry of

education so that what they have gotten for the project can be augmented. This calls for will and the determination to do it. When this is properly done, it will serve as an example for other universities to emulate.

5. That, the NUC in collaboration with the federal ministry of education and states makes it as a policy that Nigerian universities introduce the use of ICT related technology for the support of teaching-learning activities via an organized training /workshop.

6. That the Federal ministry of education should make it as policy that the teaching-learning of some basic computer skills and ICT skills be integrated into curriculum of every course and in particular teacher training courses, of the Nigerian universities, and ensure through the NUC that every university compiles with this policy. This in my opinion will in future solve the problems of lecturers' and students' inadequate knowledge computer and ICT skills.

7. That an ICT team be established. Already there is a functional ICT team in FUTY and also in most of the Nigerian universities today. This shows that there are plans already on the ground for the integration of ICT related activities into Nigerian universities' teaching and learning activities. What is not clear, however, is how far they have gone in the plans for ICT integration? And what are on the grounds for it? (Questions for thought). This team when mandated with the responsibility of designing procurement and implementation strategies of NSLS supported by a CMS will in my opinion come up with relevant and the most appropriate approach for the actualization of implementing the New-style Lecture Scenario supported by a CMS in FUTY and beyond.

6.4. Review of the Research Questions and Recommendations to Other Researchers

In this section attempts are made to address the sub research questions (Section 6.4.1), and some suggestions for further research work (Section 6.4.2) are proposed.

6.4.1. Review of supplementary research questions

These questions were:

1. What are major problems related to lectures and learning in FUTY?
2. Will a new lecture scenario supported by a CMS help improve lecture and learning in the university?
3. How can a CMS technology be used to support the New-Style Lecture Scenario?
4. What is the implementation plan for the Scenario supported by a CMS from the various stakeholders' perspectives of the university?
5. What strategies can be used to present these ideas to the main stakeholder groups?
6. What are the expected responses of the various stakeholders' to the proposed strategy?
7. What are the recommendations to the university and beyond (other universities in Nigeria)?

Each will be discussed in the following.

6.4.1.1. What are major problems related to lectures and learning in FUTY?

In responding to this question, there are many reasons that can be advanced based on the respondents' opinion related to this question, these include:

1. Lectures are usually overcrowded with students
2. Lecturers are overloaded with courses in a semester at a time so much that they become inefficient due to overwork, and because of this they hardly give adequate required assignments and its associated feedback to students
3. Lectures are usually poorly organized and sometimes not well attended by students and also by lecturers on certain occasions. Missed lectures are not usually compensated.

4. The library lacks recent textbooks, journals and periodical so much so that students have to depend on lectures by listening with poorly taken notes, while those who were absent if lucky depend on notes that might have been wrongly or improperly copied by mates and/or handouts from the lecturers. Furthermore only a few lecturers patronize the Internet and only when opportune, on the other only a negligible fraction of students have e-mail accounts and those who have are responsible for their accounts. This means access to Internet materials for teaching-learning activities in FUTY is very low.
5. Though the lecturers are morally supported by the management, they lack technology support for teaching and learning, this means everything is almost done manually by lecturers.

6.4.1.2. Will a new lecture scenario supported by a CMS help improve lecture and learning in the university?

In response to this question, it requires referring to the data collected from the respondents, the analyzed results and interpretation in Section 5.6.2 (Tables 18-21) and Section 5.7 respectively. By these, the answer to this question is yes, the New-Style Lecture scenario supported by technology if implemented appropriately will improve lecture and learning in FUTY and beyond.

6.4.1.3. How can a CMS technology be used to support the New-Style Lecture Scenario?

In response to this question it will be proper to refer to Section 3.1.2; Section 3.4 and Section 4.1.2 respectively. Based on these, it can be summarized by saying that a CMS can be used to support the NSLS by providing more flexibility, accessibility and interactivity to students and lecturers in a course. It supplements the traditional face-to-face lecture by providing more rich learning content to students; it also enhances all kinds of pedagogical approaches to teaching-learning process.

6.4.1.4. What is the implementation plan for the Scenario supported by a CMS from the various stakeholders' perspectives of the university?

In addition to implementation plan in Sections 4.1.3 and 4.1.4 respectively, I wish to suggest that the introduction and/or implementation of CMS in higher education like FUTY would mean applying 4-E Model (Collis, Peters, & Pals, 2000 quoted in Collis and Moonen, 2001). This model shows that "an individual's likelihood of making use of a technological innovation for a learning-related purpose is a function of four groups of factors: Environment (the institutional context), Educational Effectiveness (perceived or expected), Ease of Use, and Engagement (the person's personal response to technology and to change), each expressed as a vector. In the 4-E Model, the Environmental factor determines the level of the success threshold; a stronger environmental climate pushes the threshold lower so that the vector sum of the other three vectors does not have to be as high as when the threshold is associated with a weaker environmental vector"(Collis & Moonen, 2001, p.25). Figure 16 describes the 4Es-model as explained above.

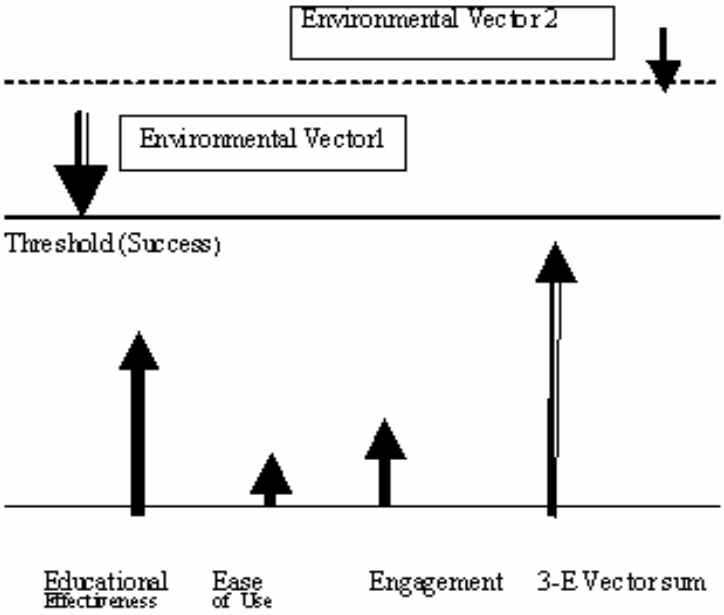

Figure 16. The 4-E Model (Collis & Moonen, 2001, p. 21) showing two different implementation situations.

The implications of this model as it relates to FUTY's situation are:

Environmental factor

This refers to the institution's profile with respect to the technology use. This would include vision, support and actual use for the technology in teaching-learning related activities (Learning Culture). It also includes the readiness to change among people in the organisation as it relates to the use of the new innovation. Based on the responses of the respondents it would mean FUTY although it has much to do in terms of ICT facilities' procurement and more training on the part of technical staff, it is evidently clear that the university management is ready and willing to embrace the NSLS supported by a CMS, what is not clear is whether they have the funds for it.

Education Effectiveness

This would include long-term pay-off for the organisation or the individual, such as return on investment (ROI) as a result of increased student enrolment over the years for the institution for example, and short-term gains such as efficiency increase in doing routine tasks associated with learning with ease and more quickly; new forms of valuable learning experiences, improved communication and capacity to the individualized aspects of learning, etc. for the learner. This can only be assessed when the system is put into experiment even though some few lecturers and students had some test of the use of a CMS using the TeleTOP but that is not adequate enough to judge. All the same from all indications there will be expected education effectiveness when implemented, and tested.

Ease Of use

This would refer to how easy or difficult it would be in the use of the system (architecture and structure) such as its hardware, network and software components. Thus it goes to suggest that the network should be functioning in such a way that it is convenient to access, adequate in terms of speed and bandwidth, reliable, easy to use the computers, browsing, navigation and manipulation, printing is friendly (easy and fast), that is it does what the user wishes and is easy to handle by novice. Well on this it is clear that those lecturers and students of FUTY did not find it difficult using the TeleTOP CMS even though that was their first experience with the use of a CMS. In fact they could navigate all through it freely as most of them went beyond even

what they were asked to do out of curiosity. Furthermore their responses on this aspect indicate that it is user friendly and is characterized by ease of use.

Engagement

This has to do with one's personal involvement in the use of the system for teaching- learning related activities. This arises out of interest developed over time as a result of personal satisfaction derived from the use of the system. It goes then to suggest that the www-based system should be one that provides means for access to learning and research materials from the websites without much difficulty. Thus the search tool must be accessible and efficient with links to several sites. One other thing about engagement is that it is attained when an individual is motivated. Hence the virtual learning environment has to be encouraging and motivating, so that users can be committed to the use of the system (for continuous engagement). This is another area that is difficult to comment on in FUTY, however it appears to me that both the lectures and students would be engaged in the use of the system if implemented but that can only be after they might have been trained adequately and with much practice. It is not usually easy to adopt quickly to a new innovation more so when it involves a lot of computer technical skills when it already has been shown that most of the lecturers and the students are not skilled in the use of computer and network technology

From the foregone discussion it goes to suggest that for any institution and/or an organization that would like to implement an e-learning related technology like the CMS, there would be the need at the initiation stage to form an e-learning taskforce or team which shall be comprised of the stakeholders representatives (instructors/trainers and students/trainees), instructional designers experts, a consultant on e-learning, system developers (websites and programmers). This team shall critically examine the aims/objectives of the organization, its short and long term expectations, organizational learning culture, its capabilities in terms of meeting required funds (expenses) for the procurement of the new innovation to be implemented and for its long term maintenance; and users needs and expectations. When these and other aspects are mapped out then the organization will be put through accordingly. This informed my decision to continue with FUTY even hereafter to follow up with the management so as to assist them in decision taken on the implementation of the NSLS supported by a CMS.

6.4.1.5. What strategies can be used to present these ideas to the main stakeholder groups?

The strategies adopted for presenting these ideas were

1. A workshop was offered to some stakeholders in which they were lectured on the NSLS and the uses of a CMS; implementation plan and the implications for the respective users of the system. Also during the workshop a practical demonstration (using the TeleTOP environment of the University Twente, the Netherlands) of how lecturers and students can use a CMS for teaching and learning activities was done by the researcher followed by an interactive activity by the participants.
2. Evaluation instruments before and after the workshop were administered to some of the stakeholders as away of assessing the situation of FUTY before the workshop and also to evaluate the use of the CMS for NSLS respectively.

6.4.1.6. What are the expected responses of the various stakeholders to the proposed strategy?

The expected responses were:

40 Stakeholders were expected to respond to the pre-workshop questionnaires, out of which 30 responded (this represented 75%) which is good response, while on the other hand 28 out of the 30 expected people attended the workshop (this represent 93% of the expected) . This means the workshop was well attended. Furthermore the general opinion was that the workshop was good and that the participants got new approaches to teaching-learning supported by a CMS.

6.4.1.7. What are the recommendations to the university and beyond (other universities in Nigeria)?

In view of their experiences with the use of TeleTOP, the respondents recommend the adoption of the New-Style Lecture Scenario supported by a CMS in FUTY and beyond, they also recommend the use of a workshop for introducing the idea of a CMS in a university.

6.4.2. Recommendations to other researchers

Based on the reviewed questions above and the entire out come of this research work I wish to recommend for further research as follows:

1. There will be a need to carry out a study to find out what other alternative technologies can be used if an institution cannot afford a CMS for the support of lecture and learning in a situation like that of FUTY.
2. Other studies related to the topic need to be carried out with a wider coverage, say three universities, to test whether a workshop would still be an ideal for introducing the use of a CMS in a university or if there could be a better alternative
3. There would be the need to carry out a research on basic factors negatively affecting the introduction of e-learning solutions in the Nigerian universities, with a view to proffer solutions
4. How can Nigerian higher education intuitions practice collaborative learning using technology support?
5. It would be good if someone can carry out an investigation on the Nigerian universities' learning culture with a view to proffer a better alternative technology that will fit into the system.

6.5. Implications of the Research to the Researcher's Future Work

First this research was initially challenging but at last thrilling and fulfilling to the researcher not only because of the success of the workshop, but also the development of the report.
Accordingly, I shall continue with the enlightenment of the need of my institution to embrace the NSLS supported by a CMS by organizing seminars/workshops to managers, teachers and students of the institution and beyond. While on the other hand I will as a point of duty continue to encourage FUTY to start experimenting the NSLS supported by a CMS by going into collaboration and partnership with manufacturers of TeleTOP.
As a follow up strategy and in addition to the points above, copies of this thesis shall be given to FUTY and NUC as a reference document with cover notes as to why the need for immediate implementation of the outcomes of this study.
I will continue to be a praise singer of network-learning through paper presentations at conferences, seminars and journal writing at local, national and regional levels.
Another challenge is to carry out an investigation study on the cost of implementing a CMS in an institution like FUTY.

6.6. Conclusion- Personal Reflections on the Study

In this section the researcher gives his personal reflections on the study as it relates to his Personal Development Plan (PDP) in developing his competences as indicated when he first started the course.
One of the cardinal objectives of TAET programme is to develop "those who wish to specialize at organizational and managerial level, making decision about how and why to introduce and use telematics-supported learning in their home institutions and that these sorts of specialists may also become involved in research and evaluation projects relating to the impact of flexible learning in schools, universities, ---." This, combined with one of the objectives of my specialization course (Pedagogies for flexible learning supported by technology), i.e. to "identify different scenarios for flexible learning and for each scenario, describe the types of technology

most likely to be used to support increased flexibility" informed my decision to carryout a research on a design of "New-Style Lecture Scenario" supported by a CMS, and was delivered by a workshop to some stakeholders of one of the Nigerian universities-FUTY, which by the results of this study had a positive impact on the participants and in fact the entire university community as the news spread like a fire. This decision was in line with my first PDP objectives and/needs i.e;

- To acquire more knowledge about learning scenarios, more acquaintance with practical use of the computer, etc.
- To be able to organize, deliver and manage e-learning support system in my institution
- To be able to introduce the use of a Course Management Systems (CMS) for instruction in the Polytechnic and also for distance learning support.

The experiences acquired in the process of carrying out this study have made me to develop the following competencies:

1. Competence in selection, implementation, and evaluation of computer- and network-based tools and systems for the support of learning-related activities, particularly for learning in higher education as evidenced by the workshop on NSLS supported by a CMS
2. Competence in critically assessing current trends in learning settings, such as e-learning, based on previous research relating to technology support for learning and applying this research to decision making about new forms of course design and delivery mediated by technology through my literature review which I used as a theoretical frame work for the design of NSLS supported by a CMS
3. Competence in analysing a learning setting in order to identify an educational model (i.e., "e-learning", "blended learning", distance) for that setting and the ways that technology can support that model. This has helped me to be able to come up with a relative and requisite learning scenario (i.e.NSLS) for FUTY and possibly for all the Nigerian higher education institutions as I still have a plan to experiment with polytechnics and colleges of education in Nigeria through workshops/seminars.

In addition to these competencies, my experiences with the study have helped improve my English/writing skills, and how to write a scientific report as mentored and coached by Prof. Dr. Betty Collis and Gerard Gervedink Nijhuis MSc.
This will go along way in developing my further research work and enhancing my competencies in the discharge of my duties in my place of work while back to Nigeria.
In conclusion I wish to say that the study was initially difficult and challenging, but at the end it became interesting, thrilling and fruitful, to God be the glory!

References

Agboola, B. (1999). *The management of distance education in Nigerian universities: Achievements, problems and prospects.* Retrieved May 2nd, 2005, from: http://www.col.org/forum/PCFpapers/agboola.pdf

Al-Najjar, K. (2002). *The application of (blended) computer-based training (CBT) in the Public Authority for Applied Education and Training (PAAET) in Kuwait.* Enschede: Ecbodruk.

Ali, A. (1999a) .*Evaluation of some distance learning programmes at Nigeria universities*. Retrieved May 2nd, 2005, from: http://www.col.org/forum/pcfpapers/ ali1.pdf

Ali, A. (1999b). *Academic standards of extension and satellite programmes of Nigerian universities: management and control*. Retrieved May 2nd, 2005, from: http://www.col.org/forum/pcfpapers/ali2.pdf

Aluko, M. (2005, April 9th). Handcuffing white-collar corruption in Nigeria. *The Nigerian village square.* Retrieved July 25th, 2005, from: http://www.nigeriavillagesquare1.com/ Articles/mobolaji_aluko/2005/04/ handcuffing-white-collar-corruption-in.html

Amoguo, A. (2003). The poverty problem: Will Nigeria ever get it right? *Economic Notes*, *100*. London: Libertarian Alliance. Retrieved July 25th, 2005, from: http://www.libertarian.co.uk/lapubs/ econn/econn100.htm

Aragba-Akpore, S. (2004, October 18th). E-learning in universities, others underway. *Nigeria Guardian Newspaper*. Retrieved October 18th, 2004 from: http://www.guardiannewsngr.com/cmpulife/article01

Association for the development of education in Africa (2004). Ministerial Conference on the integration of ICTs in education in Western Africa. *ADEA News Letter, 6*(3), 22-23.

Barker, P. (1997). Tools to support electronic lectures. *Educational Technology Review, 8*, 16-20.

Blackboard. (2005). *Blackboard academic suite*. Retrieved 7th April, 2005, from: http://www.blackboard.com/

Campus culture: Building a framework for a learning-centered organizational culture (n.d.). Retrieved 4th April, 2005, from: http://learningcollege.humberc.on.ca/ critical_problems5.htm

CMS@DUFAQ. (2003). *Using a course management system*. Retrieved April 12th, 2005, from: http://www.technology.duq.edu/cms/resources/cms-faq.html

Col International. (2001). *Building capacity to deliver distance education in Nigeria's federal university system*: *Report prepared for the World Bank*. Retrieved March 18th, 2005, from: http://siteresources.worldbank.org/NIGERIAEXTN/ Resources/capacity_de.pdf

Collis, B., & Moonen, J. (2001). *Flexible Learning in a digital world: Experiences and expectations*. London: Kogan page.

Collis, B., Peters, O., & Pals. N. (2001). A model for predicating the educational use of information and communication technologies. *Instructional Science, 29*, 95-125.

Edutools (2004). *Course management system comparative tools*. Retrieved October 5th, 2004, from: http://www.edutools.info/course/compare

Fardon, M., & Ludewig A. (2000). *iLectures: A catalyst for teaching and learning?* Retrieved July 25th, 2005, from: http://www.ascilite.org.au/conferences/coffs00/ papers/mike_fardon.pdf

Fuller, D., Norby, R., Pearce, K., & Strand, S. (2000). Internet teaching by style: Profiling the on-line professor. *Educational Technology & Society 3*(2), 71-78. Retrieved July 25th, 2005, from: http://ifets.ieee.org/periodical/vol_2_2000/ pearce.html

Gaffney, G. (2000). *What is a scenario?* Retrieved April 12th, 2005, from: http://www.infodesign.com.au/ftp/scenario.pdf

Guri-Rosenblit, S. (2003). *Paradoxes and dilemmas in managing e-learning in higher education.* Berkeley, CA: University of California, Center for Studies in Higher Education. Retrieved January12th, 2005, from: http://repositories.cdlib.org/cshe/ CSHE7-03

ICT@UNIJOS. (2002). *Report on Intensive training on ICT*. Third Annual Nigerian National Conference on ICT in Higher Education, University of Jos, Nigeria. Retrieved August 1st, 2005, from: http://www.widernet.org/TripReports/ February2002/ Jos02/NasirsComments.htm

International Service for National Agricultural Research. (2003*).Planning Sourcebook – Glossary*. Retrieved April 12th, 2005, from: http://www.isnar.cgiar.org/ publications/planning-book5.htm

Irin. (2005, March 23rd). Nigeria: Obasanjo fires education minister for bribing senate leader. *Irin News*. Retrieved July 25th, 2005, from: http://www.irinnews.org/ report.asp? ReportID=46283

Itegboje, A., & Okubote, A. (2002). Internet: A pragramatic aid to education and research. In C.O. Uwandia, H.O.D. Longe, & A.D. Akinde (Eds.), *Deployment of telemetric systems: Trends, techniques and tools* (pp. 144-145). Proceedings of the 16th National conference of computer Association of Nigeria (COAN). Jos, Nigeria: ICT@UNIJOS.

Jibril, M. (2003). *Country higher education profiles: Nigeria*. Retrieved, March 17th, 2005 from: http://www.bc.edu/bc_org/avp/soe/cihe/inhea/profiles/Nigeria.htm

Leslie, S. (2003). *Important characteristics of course management systems: Findings from the Edutools.info project*. Retrieved April 16th, 2005, from:http://www.island.net/ ~leslies /blog/stories/2003/06/13/importantCharacteristicsOfCmsFindingsFromEdutools.html

Mercy, L., & Adibe, O. A. (2003). Creating e-learning communities in Africa: Challenges, prospects, interaction and feedback. In C.O. Uwandia, H.O.D. Longe, & A.D. Akinde (Eds.), *Contemporary issues in information technology applications* (pp. 262-273). Proceedings of 7th International conference of the Nigeria computer society (NCS). Jos, Nigeria: ICT@UniJos.

Moodle. (2005). *Open source*. Retrieved April 10th, 2005, from: http://moodle.org/

National Institutes of Health U.S. (2004). *Glossary.* National Information Centre on Health Services Research and Health care Technology (NICHSR). Retrieved July 25th, 2005, from: http://www.nlm.nih.gov/nichsr/hta101/ta101014.html

NCVER. (2003). *Flexibility through online learning: At a glance*. The Australina flexible learning framework. Retrieved April 12th, 2005, from: http://www.ncver.edu.au/ research/proj/nr1F12/ nr1F12.pdf

Nichols, M. (2003). A theory for elearning. *Journal of Education Technology & Society, 6* (2), 1-10. Retrieved April 24th, 2005 from: http://ifets.ieee.org/periodical/6-2/ 1.html

Nigeria National Universities Commission (NUC). (2001*). Nigerian universities statistics.* Retrieved May 7th 2005, from: http://www.nuc.edu.ng/Publications/ publications.htm

Nigeria National Universities Commission (NUC) (2003). *Welcome to the universities in Nigeria website*. Retrieved May 7th, 2005, from: http://www.nuc.edu.ng/ Universities/Universities.htm

Ogunbase, A. (2003). *Cultural diversity in blended learning: Key expectations of Nigerians in the use of e-modules as study resources blended with activities involving reflection and discussion in corporate learning situations.* Masters thesis. Faculty of Behavioural Sciences, University of Twente, Enschede, The Netherlands.

Ogunsola, A. (2004). Nigerian university libraries and the challenges of globalization: The way forward. *Electronic Journal of Academic and Special Librarianship,* 5, (2-3). Retrieved March 17th, 2005, from: http://southernlibrarianship.icaap.org/ content/v05n02/ogunsola_l01.htm

Okonedo, B. (2005, February 28th). *Okebukola draws roadmap for ICT in higher education.* Business Day. Retrieved March 18th, 2005, from: http://www.businessdayonline.com/ index.php?fArticleId=4822

Olujuwon, T. (2002, July). *Education in Nigeria: A futuristic perspective.* Paper presented at the 4th conference of the International consortium for Educational Development (ICED), Australia. Retrieved March 17th, 2005, from: http://www.csd.uwa.edu.au/ICED2002/ publication/Tola_Olujuwon.pdf

O'Neil, K., Singh, G., & O'Donoghue, J. (2004). Implementing elearning programmes for higher education: A review of the literature. *Journal of Information Technology Education, 3*, 313-323. Retrieved February 10th, 2005, from: http://jite.org/documents/Vol3/v3p313-323-131.pdf

Preece, J., Rogers, Y., & Sharp, H. (2001). *Interaction design: Beyond human-computer interaction*. New York: John Wiley.

Santema, S., & Genang, R. (1999, June). *Rethinking education.* Paper presented at the Ed-Media 99 World Conference, Seattle, USA.

Shirbon, E. (2005, June 22nd). *Corruption is Nigeria's biggest problem.* Retrieved August 1st, 2005, from: http://DAWN.com/2005/06/22/int7.htm

SIFE Nigeria. (2004). Nigeria *location and History*. Retrieved April 2nd, 2005, from: http://www.sife.org/nigeria/index.asp?ID=NG

Soanes, C. (Ed). (2001). *Paperback Oxford dictionary*. New York: Oxford University Press.

Syque (2005). *What is culture?* Retrieved April 7th 2005, from: http://changingminds.org/ explanations/culture/what_is_culture.htm

TeleTOP B.V. (1997-2004). *TeleTOP 6. University of Twente*. Retrieved 10th April, 2005, from: http://www.teletop.nl

TeleTOP 6. (2004).*TeleTOP-enabled learning.* University of Twente. Retrieved April, 12th, 2005 from: http://teletop.utwente.nl

Threeships. (2003). About N@T school! Retrieved February 10th, 2005, from: http://www.threeships.com/nar.asp?rsc=1main_classic_en.html

Ullman, C., & Rabinowitz, M. (2004). *Course management systems and the reinvention of instruction*. Retrieved January 11th, 2005, from: http://thejournal.com/ magazine/vault/A5070.cfm

University of Benin Nigeria. (2005). *E-learning centre*. Retrieved May 5th 2005, from http://www.uniben.edu/

University of Western Australia. (2004). Web *tools for teaching purposes*. Retrieved 12th April, 2005, from: http://staff.webct.uwa.edu.au/web_tools

Uwadia, C. O. (2003, March). *IT education in Nigeria: Challenges and opportunities*. 2nd Global NCS/NITPA IT Conference in Washington DC. Retrieved May 3rd, 2005, from: http://www.nitpa.org/articles/globalit/IT_Education_in_Nigeria.ppt

WebCT. (2003a). *Access, quality and the cost: e-learning's contribution.* Retrieved April 10th, 2005 from: http://www.webct.com/service/ ViewContent?contentID=17982696

WebCT. (2003b). *Campus edition*. Retrieved April 13th 2005, from: http://www.webct.com/service/ViewContent?contentID=16968431

Westhead, M. (1999). *Use of Web and Internet technology in teaching and learning*. University of Edinburgh. Retrieved 12th April, 2005, from: http://www.epcc.ed.ac.uk/overview/ publications/training_material/tech_watch/ 99_tw/techwatch-distlearn/web_tl.pdf

World Bank Group. (n.d). *Glossary of distance education terms*. Retrieved July 25th, 2005, from http://www1.worldbank.org/disted/glossary.html

World fact book. (2005). *The world fact book Nigeria*. Retrieved April 4th, 2005 from: http://www.cia.gov/cia/publications/factbook/geos/ni.html

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Appendix 1. Pilot Demonstration Evaluation Form 30th May, 2005.

Name----------

Department/Address----------

Date----------

Evaluation form, following the pilot demonstration workshop

A questionnaire to evaluate the workshop the New-Style Lecture Scenario and the applications/uses of Course Management System (CMS) for the New-Style Lecture in FUTY-Nigeria.

Dear respondent,

This is a project that aims to establish the need for a university like FUTY-Nigeria to adopt the applications/uses of a CMS for the support of a lecture scenario called the "New-Style Lecture "with a view to improve lectures in the institution.

The aim/objective of this questionnaire is to get more inputs from you with a view to improve the design of the scenario and the proposed workshop on the uses of CMS in a University – FUTY.

Use the space provided to indicate your opinions/ suggestions on the presentation.

1. What is your opinion about the designed Scenario? ----------

   ---

2. What is your opinion on the proposed workshop presented as it relates to:

   a). Part 1: The "New-Style Lecture" and the CMS----------

   b). Part 2. –Demonstration:

   Lecturer's use of the New- Style lecture ----------

   Student's use of the New-style Lecture----------

   Activity during the workshop session ----------

   c). Part 3: Discussion of implications of the New-style lecture:

   Lecturer----------

   Student----------

   ICT staff----------

   Management ----------

3. What is your general view about the entire presentation? ----------

   ---

4. Please kindly suggest any other thing not indicated here which you think would be of assistance in improving the:

   .New-Style Lecture Scenario---------- ---.

   Workshop----------

Thank you very much for your opinions/suggestions, please.

Yours sincerely,

Peter Z. Kwache

Appendix 2: Instructors and students guests' accounts to Kwache2 TeleTOP site

Date: Thu, 26 May 2005 14:50:30 +0200
From: "Gervedink Nijhuis, G.J. (EDTE)" <G.J.GervedinkNijhuis@edte.utwente.nl>
To: "Kwache, P.Z. (Stud_MP04)" <P.Z.Kwache@student.utwente.nl>
Subject: RE: Reuest for Instructors' accounts.

Hi Peter

I already sent you five guest accounts on 23 May with the following text:

To carry out your experiment you need some student accounts to access TeleTOP.

Here are five guest accounts with password you can use to access Kwache2 (your test course).

To login use one of these guest accounts with the associated password:
G1000036 tele4658top
G1000037 tele3723top
G1000038 tele8834top
G1000039 tele2117top
G1000040 tele9578top
Instructors guests accounts

1. G1000045 tele4774top
2. G1000046 tele8285top
3. G1000047 tele7634top

4. G1000048 tele3029top

5.G100049 tele5196top

Appendix 3: Correspondences with Contact persons in FUTY .

Dear Kwache

Good day and how is studies?
I will find out the cost of the camera you ask though personally i dont know it.
i was able to get only some information as i told such such as
1. FUTY has four sybacafees, they have 10,31,20 and 10 systems respectively in the cafees and they are using VSAT in using using KUBand and CBand.
2. Lecturers get their materials some from the library and sometimes from the internet.
3. The student are accessed by assignent, test, practicals which is all over 30% while the exam is over 70%.
4. The lecturers and students general attitudes to lectuer attendance some lecturers take their lectures very seriously while there are some who dont even come to class only when it is close to exams but studenst attitude towards attending the lectures is on the average.
5. Cybercafees are not free to both lecturers and students, they all pay before they use it.

Hopefully i will send all the other information on or before wednesday next week by the grace of God.
Daniel Peter

Peter Kwache <pzkwache@yahoo.co.uk> wrote:
Dear Dan,
How are you people doing i was expecting some latest today from Apagu but no thing what is the matter? pls take your time and check on him againg.
I want you to find out how much a camp video camera(smaller size)costs in Nigeria because here the least is
Euro 269.00 You can find that from electronic shops or from people that have an idea. I need it for my research but it appears its costlly. Remember One euro is equal to N185.00. any find out for me the actual exchange rate.
Thanks till I hear from you
Peter

Dear Kwache,
Good day onece again and hope your are firing well in your studies?
Though i promise that i will give you all the information you need by today, you will still be patient these are the ones that are available as of now:
1. Geographical location of FUTY Latitude 9degrees 21min. North, Long 12 degrees 33min. East.
2. Lectuers rough population: About 400
3. Students' enrollment in degree and masters programme including those of part-time: About 16,000
4. How lectures are conducted, including course organization by a lecturer: Class room lecture by tutor followed by notes given to students.
Please i will also get the school logo and other relevant information that i am still not yet to get.
Thank you.

Daniel Peter.

Peter Kwache <pzkwache@yahoo.co.uk> wrote:

Dear Dan,
As usual Iam here to disturb you againg with more assignments and request. I have phoned Dr. Apagu yesterday he promised to send the remaining information over the week end. Infact Iam suppose to have sent my chapter two to my suppervisor much earlier than now for which I needed those informatiom for. This has affected our schedule and u know the white man is always time conscious and never take things for granted.On your part you should be prepared because we shall do almost every thing together particularly the technical aspect like web site desiging, database etc, I want to know though u did not read education whether you have an idea on CMS- e-learning related technology tool for support of teaching-learning activities in schools.it web-based system. Can pls send me the FUTY logo and five different courses offered in education along with its credit load and possible the name of the lectures including the breife aims of those courses and outline of the courses this can be next week. see attached the letter and the time table for Dr apagu take it to him today so that I can get feed back as he promised over the week end
I will write when exactly I shall come to Nigeria but lates end of April, see details of the time-table attached u may have a copy as wel
Peter

Daniel Peter <regidanpeters@yahoo.com> wrote:

Appendix 4. Pre-Workshop questionnaire

MSc. Programme 'Educational Science and Technology' variant "Technology Applications in Education and Training" (TAET),
Faculty of Behavioural Sciences/GW,
University of Twente, The Netherlands.
May 30th ,2005.

Name----------
Department----------
Date:----------

A pre-workshop questionnaire on the "New-Style Lecture" Scenario and the use of a CMS in FUTY-Nigeria.

Dear Respondent,
This project focuses on problems with lecture and learning participation at FUTY and suggests a New-Style Lecture Scenario supported by a CMS (Web-based course management system) as a way to help respond to the problem. As part of the project a workshop will be offered at FUTY on June 20th 2005. Four groups of persons will be invited to the workshop: the management staff, lecturers, students and the ICT staff. If you are planning to attend the workshop or even if you can't attend I would appreciate if you fill in this questionnaire relevant for your category. Please return the completed questionnaire on or before June 13th, 2005 to Dr. V. V. Apagu of the School of technology and science education.
Thank you, Peter Kwache (MSc. Student).
Which of the following best indicates your status?
Management staff ( )
ICT staff ( )
Lecturer ( )
Student ( )
(Management staff here includes, Vice chancellor or his Deputies, Deans, and H.O.Ds.
ICT staff includes computer and/or Information Technology (IT) technical staff).
Find the section below that corresponds with your chosen status and write or other wise tick the most appropriate option(s).

Management staff

If you are a management staff as defined above fill in questions 1-20 and 68.

1. How old is your university now?
(a) <5yrs ( )
(b) 5-10yrs ( )
(c) 10-25yrs ( )
2. What is the goal for establishing the university?
(a) To promote teaching-learning of sciences only ( )
(b) Teaching-learning of science & technology related ( )
(c) For all conventional education ( )
(d) For political reasons ( )
3. To what level has this goal be achieved?
a) Fully ( )
b) Partially ( )
c) Not all ( )
4. What do you consider to be responsible for not realising the goal fully?

---

5. What is the total number of students registered in your university now?
(a)<5000 ( )
(b) 5000-10000 ( )
(c) 10000-15000 ( )
(d) >15000 ( )

6. What is the total number of lecturers working in the university?
(a) <300 ( )

(b) 300-400 ( )
(c) 400-500 ( )
(d) > 500 ( )
7. Does your university run both regular and part-time programmes?
Yes ( )
No ( )
8. If yes, how many of this students are (a) part-time? ---------- (b) International ----------
9. If you are running part-time programmes, do your students come from all over the country?
Yes ( )
No ( )
10. If No, is it restricted to a particular catchments area?
Yes ( )
No ( )
11. Are these programmes supported by e-learning related technology?
Yes ( )
No ( )

12. If yes, is the part- time teaching organised on blended mode?
Yes ( )
No ( )
13. If yes what are the facilities available? ----------
---

14. And if no, does the school have plans to provide e-learning related technology facilities?
Yes ( )
No ( )
(c) Neutral ( )
15. Does your department have required manpower for the establishment of e-learning related technology in your school?
Yes ( )
No ( )
16. What percentage of your lecturers is computer literate?
(a) < 40 ( )
(b) 40-60 ( )
(c) > 60 ( )
17. Does your library have up-to-date teaching, leaning and research materials such as recent textbooks, periodicals, journals?
Yes ( )
No ( )
18. Is the university library digital (connected to internet)?
Yes ( )
No ( )
19. If no, do you have plans to make it digital?
Yes ( )
No ( )
20. What support does the lecturers and students get from the Management related to teaching-learning activities?
(a) Moral support ( )
(b) Rewards /incentives ( )
c) Technology support ( )
(c) (a & b) ( )
(d) All the above ( )
(e) None at all ( )

Lecturers

If you are a lecturer please fill in questions 21-47 and 68
21. How many courses do your teach in a semester? ----------
22. Are you comfortable with your teaching load?
Yes ( )
No ( )
23. If no why? ----------
24. How many students do you teach in a course? ---------- How many are part-time? ---------- and how many are regular? ----------
25. How do you organise/deliver your lectures?
a) Lecture involving listening only ( )

(b) Collaborative ( )
c) Listening and collaborative ( )
d) Discovering/task based ( )
e) Mixed of the above ( )

26. Do you combine lectures with?
(a) Notes only ( )
(b) Handouts only ( )
(c) a & b ( )
(d) Lecturing only ( )
e) Others ( )
please explain----------

27. Do some of your students fail to come to lectures some times?
Yes ( )
No ( )

28. Does a student notify you of his/her absence from lecturers in advance?
Yes ( )
No ( )

29. If yes, how?
(a) By E-mail ( )
(b) Verbally ( )
(c) Another means ( )
(d) Not at all ( )

30. How often do you give assignments to your students in a course?
(a) Once ( )
(b) More than once ( )
(c) Not at all ( )
(d) After every lecture? ( )
(e) Only tests ( )

31. Do you support your students with relevant materials that would be of assistance in carrying out their assignments?
Yes ( )
No ( )

32. If yes how? ----------
---

33. How long does it take you to give feedback to students' submitted assignments?
a) one week after ( )
b) two weeks after ( )
c) More than two weeks after ( )
d) At the end of the course ( )

34. How do you give feedback to your students assignments, tests/or major tasks?
(a) Verbally ( )
(b) In writing ( )
(c) a and b, ( )
(d) Another means (specify) ----------
---

35. Do you have personal e-mail account?
Yes ( )
No ( )

36. If yes who is responsible for the payment of the account? ----------
---

37. How often do you patronize the internet?
(a) Once in a week ( )
(b) Daily ( )
(c) After every two weeks ( )
(d) Not at all ( )
e) When opportune ( )

38. Do you have a computer in your office?
Yes ( )
No ( )

39. If yes is it connected to Internet?
Yes ( )

No ( )

40. Are you currently using computers in teaching-learning activities in your course?
Yes ( )
No ( )

41. If yes in what ways? ----------
---

42. What computer skills do you need in order to effectively integrate ICT into teaching-learning activities? ----------
---
---

43. In what way(s) are you supported by either your faculty or institution in carrying out your teaching assignments?
---

44. Do you have access to recent journals relating to the course you teach and/or for your research work?
Yes ( )
No ( )

45. If yes how do you get them? ----------
---

46. When last did you publish journal papers?
(a) Least than 5yrs ago ( )
(b) 5yrs and/or more years ( )
(c) Never at all ( )

47. If b or c, why? ----------

Students

If you are a student fill in questions 48-60.

48. Are you an off-campus or on-campus student? ---------- If off-campus why? ----------
---

49. Have you ever failed to attend lectures due to some reasons?
Yes ( )
No ( )

50. If yes what were your reasons?----------
---

51. Do some of your lecturers some times fail to attend their lectures?
Yes ( )
No ( )

52. If yes do they inform you ahead of time?
Yes ( )
No ( )

53. And when they fail, do they usually compensate missed lectures?
Yes ( )
No ( )

54. How do you get access to lectures' materials that you have missed? ----------

55. Do you have an e-mail account?
Yes ( )
No. ( )

56. If yes, who pays for the Internet account? ----------

57. Do you get some materials for your assignments and learning from the Internet?
Yes ( )
No ( ).

58. If no, how do you get materials for your assignment and/or studies?
(a) Handouts only ( )
(b) Textbooks ( )
(c) Lecture notes only ( )
(d) Library ( )

59. Do you usually get detailed feedback of your submitted assignments?
Yes ( )
No ( ).

60. If yes, what kind of feedback?
(a) Verbal ( )
(b) Writing ( )
(c) Marks only ( )
(d) Other (specify) ----------

(e) None of the above ( ).

ICT staff

If you are a computer or information technical staff fill in questions 61-67 and 68 please.

61. As computer/IT staff does your department have required ICT related facilities for the management of e-learning (CMS) technology?

Yes ( )

No ( )

62. If yes, what kind of e-learning technology is available? ----------

---

63. Do you suggest the use of e-learning (CMS) related technology in teaching-learning activities in the university?

Yes ( )

No ( )

64. How many computers are there in the computer laboratories? ----------

65. Does the university have enough printers for staff and students use?

Yes ( )

No ( )

66. Is printing free for lecturers and/or students?

Yes ( )

No ( )

67. Does the university have computer Network experts?

Yes ( )

No ( )

68. Does your department have the required manpower for the establishment of e-learning related technology in university?

Yes ( )

No ( )

General

This general question should be answered by respondents in all categories.

69. You may please wish to give any necessary information that is not reflected in this questionnaire which you think relevant and of importance to this study (particularly related to staff's general computer knowledge, ICT and network technology).

Thank you very much for your cooperation.

Yours sincerely,

Peter Z. Kwache (Researcher)

Appendix 5. Post-workshop questionnaire.

Technology Applications in education and training (TAET),
Faculty of Science and Technology Education,
University of Twente, the Netherlands.
E-mail: p.z.kwache@student.utwente.nl
Phone no:+31614758987
May 30th , 2005

Name----------
Department----------
E-mail address----------
Date----------

Post-Workshop questionnaire on the New-Style Lecture Scenario supported by Technology-CMS Held at FUTY-Nigeria June27th, 2005.

Dear Respondent,

This is a follow up questionnaire to the workshop on New-Style Lecture Scenario supported by CMS. It aims to find out your reactions and opinions about the workshop and in particular to the New-Style Lecture scenario supported by technology, specifically CMS. If you haven't attended the workshop, you do not have to fill in this questionnaire. Please return the completed questionnaire immediately to the researcher or your head of department.

Indicate your status by ticking the appropriate box below:
Management staff ( )
Lecturer ( )
Student ( )
(Management staff here means the Vice-Chancellor or his deputies, Directors of academic programmes, Deans and/or HODs).

Management staff
If you are a management staff, please answer questions 1-13 and 30.
1. What is your opinion about the New-Style Lecture Scenario?
a.) Positive ( )
b) Negative ( )
c) No opinion ( )

2. Which phase or phases of the New-Style Lecture do you consider more effective for teaching-learning related activities in a course?----------

3. Do you think the use of New-Style Lecture supported by CMS can solve the problem of poor lecture attendance?
Yes ( )
No ( )

4. If no, why do you think so? ----------

5. Is it possible for the institution to adopt the New-Style Lecture Scenario supported by CMS?
Yes ( )
No ( )

6. If No, what do you consider to be the hindrances for not adopting it?----------

7. What alternative technology would you suggest for the support of teaching-learning activities if CMS can not be implemented? ----------
---

8. Which of these aspects of CMS can be implemented within a course in your school now?
(a) Internal e-mail ( )
(b) Roster with announcements only ( )
(c) Assignment and feedback ( )
(d) All of the above ( )
(e) a and b only ( )
(f) None of the above ( )

9. To what extent do you think the use of CMS can support lecturers when performing teaching-related activities?
(a) High ( )
(b) Low ( )
(c) No opinion ( )
10. Would you recommend the use of CMS to support lectures in your school?
a) Yes, definitely ( )
b) Yes, but only in certain cases ( )
c) No opinion ( )
d) Not at all ( )

11. Would you recommend a workshop for introducing the idea of the use CMS in a university?

Yes ( )
No ( )
12. If No, why? ----------
---

13. Suppose a university wants to implement the use of CMS how should it arrange for that?
(a) Organize a workshop ( )
(b) Go ahead without a workshop ( )
(c) Arrange with CMS vendors ( )
(d) Design its own ( )

Lecturers

If you are a lecturer, please answer questions 14-25 and 30.

14. Would you like to adopt the New-Style Lecture Scenario in delivering your lecture?
Yes ( )
No ( )

Please explain your answer----------
---

15. As a lecturer would you like to use CMS to support your lectures?
Yes ( )
No ( )
16. What is your general impression of the uses of CMS in teaching and learning activities?
a) Positive ( )
(b) Negative ( )
(c) No opinion ( )

17. What is your personal feeling about working with such a tool?
(a) Satisfying ( )
(b) Frustrating ( )
(c) No opinion ( )
18. How would you rate the interactive activity using the CMS (teletop)?
(a) Good ( )
(b) Poor ( )
(c) No opinion ( )

19. To what extent do you think that the CMS task procedures match common practice of Lecturers?
(b) Low ( )
(c) No opinion ( )
(a) High ( )
20. Does the use of CMS in teaching carter for students who are physically absent from class?
a). Very much
b). Not at all
c).Partially
21. How would you rate the ease of use of CMS in carrying out the New-Style Lecture Scenario?
(a) Good ( )
(b) Fairly good ( )
(c) Poor ( )

22. To what extent do you think the CMS is useful for the New-Style Lecture Scenario?
(b) Low ( )
(c)No opinion ( )
(a) High ( )

23. To what extent does the use of CMS complement the traditional use of the face-to-face method as it relates to the New-Style Lecture Scenario?
(a) High ( )
(b) Low ( )
(c) Neutral ( )

24. Would you recommend the use of a workshop for introducing the use of CMS as part of implementation process in a university?

Yes ( )
No ( )
Please explain your answer----------

25. As a lecturer would you recommend the use of computer-based support such as CMS for teaching-learning activities?
Yes ( )
No ( )
Please explain your answer----------

Students

If you are a student, please answer questions 26-29 and 30.

26. Will the use of New-Style Lecture Scenario supported by CMS help you in your studies?
a). Yes ( )
b). No ( )
Please explain your answer----------

27. Which phase of the New-Style Lecture Scenario do you consider most important to your studies?
a). Before the session ( )
b). during the session ( )
c). after the session ( )
d). All of the above ( )
e) None of the above ( )

28. Do you consider CMS to be relevant to your studies?
Yes ( )
No ( )

29. If yes, how? ----------

---

29. Would you recommend the use of the New-Style Lecture supported by CMS in learning related activities?
Yes ( )
No ( )
Please explain your answer----------

General question:
To be answered by everyone

30. Describes briefly what you learned in the workshop----------
---

Thank you very much for your cooperation and responses.

Yours sincerely,

Peter Z. Kwache(Reseacher).

Appendix 6A: Introductory letter from the Faculty to Vice chancellor FUTY-Nigeria.

Reference: GW.07.05.441/dl
Date: 1 June 2005

The Vice Chancellor
Federal University of Technology, Yola
P.M.B. 2076, Yola
Adamawa State
Nigeria

Subject: Letter of introduction Mr. Peter Z. Kwache

Dear Sir or Madam,

The bearer (Peter Zakawa Kwache) is a full-time MSc student within the MSc. Programme 'Educational Science and Technology' variant 'Technology Applications in Education and Training' (TAET), Faculty of Behavioural Sciences, University of Twente, The Netherlands.

As part of the fulfillments of the conditions for the award of the Master of Science Degree, he is expected to submit a thesis to the faculty. Accordingly and as part of his research project he is to conduct a workshop in your institution related to his research topic: The 'New-Style Lecture' Scenario Supported by a technology-CMS.

In view of this, we request that the management allows him access to all relevant information and necessary facilities to conduct the workshop and the research in general during the period June 7 until July 5, 2005.

In case you have any other questions, please do not hesitate to contact us.

Yours sincerely,

Dionysia Loman
University of Twente
Faculty of Behavioural Sciences/GW
International Student Services/ISS
Cubicus C-101
P.O. Box 217
7500 AE Enschede
The Netherlands

Tel: +31-53-4893836
Fax: +31-53-4891104
E-mail: d.loman@utwente.nl <mailto:d.loman@utwente.nl>

Appendix 6 B: A letter to the V.C. indicating some requirements for the workshop

Date: 9th June, 2005

The vice Chancellor
Federal University of Technology,
Yola (FUTY)

Sir,

A Free workshop on New-Style Lecture Scenario Supported by Technology- Course Management System (CMS)

This is a one day workshop aimed to acquit, demonstrate and discuss the applications/uses of a CMS (computer aided tool) for the support of teaching- learning activities in higher education as alternative solution for improving lectures and learning.

The workshop is meant primarily for some Stakeholders:

1. Lecturers from school of technology and science education-	10
2. Lecturers from department of information and technology-	5
3. Lecturers from department of computer science	5
4. ICT technical staff (Computer and information Technology)-	5
5. Management Staff (Deputy Vices, Director of academic planning, Deans and HODs)	-5
Total	**40**

Supporting documents for the workshop

1. A detailed time-table

1. Lecture paper titled the New-Style Lecture supported by Technology
2. TeleTop Manuals both for Instructors (lecturers) and Students.
3. Pre-workshop questionnaires
4. Post-Workshop questionnaires

Basic requirements for the workshop:

1. Filling in the pre-workshop questionnaire before the workshop fot the following information:

a). information about the lecturers and students present situation on computer and Internet knowledge

b). Availability of computers and internet facilities and resources

c). General information about lecture attendance, students - lecturer ratio, etc.

2. The use your internet and computers facilities for the conduct of the workshop for 4o participants indicated above.

3. A beamer or computer project to be used for lectures and demonstration during the workshop

4. Attendance by the 40 persons or more mentioned above

5. Practical to experience the use of CMS using TeleTop environment by Lecturers and students

6. Filling in of the post-workshop questionnaires by those who attended the workshop so as to evaluate the workshop and their experiences with use of CMS environment as it relates to teaching- learning process.

Yours faithfully,

Peter Zakawa Kwache
(Researcher)

Appendix 7. Some Photos of buildings to which FUTY's Cyber Café s are attached.

Taken 13th June,2005

FUTY's Computer Centre in which some Cyber Café s are attached

FUTY's Library to which one of its Cyber Café s is attached

Appendix 8: Invitation Letter to the workshop on NSLS

Technology Applications in education and Training,
Faculty of Behavioral Sciences/GW,
University of Twente, The Netherlands.
E-mail:p.z.kwache@student.utwente.nl
Phone: +31-614758987
20th June, 2005

Prof/Dr./Mr/Mrs.----------

INVITATION TO A WORKSHOP

You are cordially invited to a day workshop on the theme: The "**New-Style Lecture" Scenario supported by technology (CMS).** This workshop is in connection with my research work on a topic titled "A Scenario, workshop and recommendations for the use of a Course Management System (CMS)" as a support tool for teaching-learning related activities in FUTY-Nigeria.

It aims among other things to acquaint, demonstrate and discuss the applications and the uses of CMS as alternative solution to poor lecture attendance and the lack of up-to-date primary source materials for lectures, learning and research activities in higher education.

Date: Monday 27th June, 2005

Venue: Computer Center FUTY

Time: 9:00 AM. (See time table attached for details Please.)

For detail see time-table attached please

Peter Z. Kwache
(Researcher)

Appendix 9: Workshop Registration slip

A WORKSHOP ON NEW-STYLE LECTURE SCENARIO HELD AT FUTY-NIGERIA ON 27TH JUNE, 2005
PARTICIPANTS' REGISTRATION FORM

1. Name……
2. Category (Tick the appropriate box(es) below for your category please).

   Management staff ( )

   Lecturer ( )

   ICT Staff ( )

   Student ( )
3. Status/responsibility…….
4. School……..……
5. Department……
6. E-mail address……..
7. Signature…… Date……

Appendix 10 A: Appreciation to the Vice Chanacellor FUTY

Technology Applications in Education and
Training (TAET)
Faculty of Science and Technology education
University of Twente, the Netherlands
E-mail address: p.z.kwache@student.utwente.nl
+31614758987
June 28th ,2005.

The Vice Chancellor,
Federal University of Technology Yola,

Through
The Deputy Vice Chancellor Academic
Federal University of Technology Yola.

Sir,

LETTER OF APPRECIATION

I wish to register my profound gratitude and appreciation for your permission and support for organizing and conducting a workshop on "New-Style Lecture" Scenario supported by Course Management System (CMS) for some lecturers, management staff, ICT technical Staff and students of your institution held on June 27th, 2005, even though we had to go the ABTI Cyber café for practical demonstration because the institution's cyber café was not reactivated.

2. Sir, one of the reasons why my university and in particular my supervisor (Prof. dr.Betty Collis) approved the organization of the workshop in your institution is to have a collaboration for the integration of ICT and in particular the CMS (teletop) in teaching-learning activities if the institution adopts the implementation of the "New-style Lecture" Supported by CMS.

Yours Sincerely,
Peter Zakawa Kwache
(Researcher).

Appendix 10 B: Appreciation Letter to the Participants of the workshop.

Technology Applications in Education and Training (TAET)
Faculty of Science and Technology education
University of Twente, the Netherlands
E-mail address: p.z.kwache@student.utwente.nl
+31614758987
June 28th ,2005.

_____

_____

_____

Sir,

A LETTER OF APPRECIATION

I wish to register my profound gratitude and appreciation for filling in the pre-and post-workshop questionnaires, and particularly for your active participation in the just concluded workshop on New-Style Lecture Scenario supported by CMS June 27th, 2005. It is my prayer that God almighty will continue to bless and prosper you in all your endeavors.

Please extend my appreciation to your academic staff and students for their active role and participation.

Yours Sincerely,

Peter Z. Kwache