

COURSE GUIDE

EDT 833 FACILITIES FOR MEDIA UTILISATION IN THE INSTRUCTIONAL PROCESS AND MICROTEACHING SKILLS

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INTRODUCTION

This course comprises three modules and 14 units which are sequentially, systematically and logically linked to each other for vivid understanding for the learner. In general, the course exposes you to the facilities to be utilised so as to facilitate the teaching and learning process, thereby enhancing your academic performance. It explains comprehensively the factors that should be provided in spatial, thermal, visual, acoustic and aesthetic environments for making the learning environment conducive, comfortable and enabling. It also exposes you to the ways by which facilities could be rehabilitated, modernised, renovated and revitalised so as to update them and in fact, keep them in the mainstream of the current trends in Information and Communication Technology. The course also acquaints you with the facilities for the organisation and management of media centres in Nigeria. It also exposes you to microteaching – history, process and various pedagogic skills that a trained teacher should acquire and exhibit in making the instructional process effective and meaningful. Finally, in this course you will be opportuned to acquire information about the global and developmental history of mobile learning (mlearning) and its adoption and utilisation in the instructional process.

COURSE AIMS

The course is aimed at providing comprehensive information about how facilities in the teaching and learning environment can be properly utilized and constantly updated, maintained and sustained in order to make instructional processes effective and meaningful.

COURSE OBJECTIVES

By the end of this course, you should be able to:

- explain general terminologies such as obsolescence, modernisation, modelling, renovation, rehabilitation as related to facilities revitalisation in educational system
- describe the facilities in the spatial, visual, acoustic, thermal and aesthetic environments that can be utilised for enhancing the learning environment.
- discuss in details the organisation and management of a media centre in Nigeria.
- practise the acquired pedagogic skills of a trained teacher for proper use in the instructional process.
- explain the adoption and utilisation of mobile learning (mlearning) in the teaching and learning process.

WORKING THROUGH THE COURSE

You should be patient and painstaking in going through the course material. In fact, you are advised to scan through first, and then read with vivid comprehension and thorough digestion of all the units from one to fifteen. All self-assessment exercises should be religiously attempted by you. In case, you are challenged with obstacles and difficulties, it is advisable to discuss these with your colleagues and facilitator (s) in your Study Centre.

THE COURSE MATERIAL

You will be provided with the following course materials:

- Course Guide
- Study Units of three modules.

However, recommended textbooks are listed which you may find useful.

STUDY UNITS

Module I Environmental Facilities

Unit 1	General Terms and Factors for Revitalisation of Facilities
Unit 2	Spatial Facilities
Unit 3	Facilities for Thermal Environment
Unit 4	Facilities for Acoustic Environment

Module 2 Rehabilitation of Facilities for Media Utilisation

Unit 1	Facilities for Aesthetic Environment
Unit 2	Planning of Educational Facilities
Unit 3	Design of Media Centre
Unit 4	Management of Media Centre
Unit 5	Facilities for M-learning Adoption and Utilisation in the Instructional Process

Module 3 Microteaching Facilities

Unit 1	Definition, Concept and Process of Microteaching
Unit 2	History of Microteaching
Unit 3	Microteaching: Teaching Skills Part One
Unit 4	Microteaching: Teaching Skills Part Two
Unit 5	Microteaching: Teaching Skills Part Three

TEXTBOOKS AND REFERENCES

Adedapo, A. (2018). The concept and meaning of Educational Technology. In I.O. Salawu (Ed.), *Educational Technology Theory and Practice with Emerging Trends*. Lagos: Odumatt Press & Publishers,

Abimbade, A. (1999). *Principles and Practice of Educational Technology*. Ibadan: International Publishers.

Agun, I. & Imogie, I. (1988). (eds.). *Fundamentals of Educational Technology*. Ibadan: Y-Books Publishers.

Egunjobi, A.O. (2007). *Concise and Basic Concepts of Educational Technology*. Ibadan: Ejon Publishers Ltd.

Olowu, F. A. (2005). *Educational Technology: A Conceptual Guide*. Ijebu Ode: Gondalom Books Publishers.

ASSESSMENT

This is in two folds viz: Tutor-Marked Assignment (TMA) and the Examination at the end of the course.

TUTOR-MARKED ASSIGNMENT

It is a formative evaluation of the course in which four assignments will be selected by the programme leader of NOUN and given to you to respond to. The responses will be submitted by you to the Study Centre Director from where they will be collected by your facilitator(s) for assessment. However, the best three scores out of the four assignments will be recorded for you. The TMA accounts for 30% of the total mark for the course.

FINAL EXAMINATION AND GRADING

You will take an examination at the end of the course. This takes care of 70% of the total score for the course. Adequate information will be posted to you about the examination.

SUMMARY

You will study the following in these units:

- Environmental Facilities viz: spatial, thermal, visual, acoustic and aesthetic environments.

- Media Centre Facilities: design, planning, management, and utilisation of media for instructional process.
- Facilities for M-learning adoption and utilisation in teaching and learning process.
- Facilities for Microteaching: teaching skills such as set induction, stimulus variation, questioning, non-verbal communication, instructional media, examples and illustration, planned repetition and closure skills.

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MODULE 1 ENVIRONMENTAL FACILITIES

Unit 1	General Terms and Factors for Revitalisation of Facilities
Unit 2	Spatial Facilities
Unit 3	Facilities for Thermal Environment
Unit 4	Facilities for Acoustic Environment

UNIT 1 GENERAL TERMS AND FACTORS FOR REVITALISATION OF FACILITIES**CONTENTS**

1.0	Introduction
2.0	Learning Outcomes
3.0	Main Content
3.1	General Terms
3.2	Factors for Revitalisation of Facilities
3.3	Educational Obsolescence
3.4	Location Obsolescence
3.5	Site Obsolescence
3.6	Building Structure and Services Obsolescence
3.7	Environmental Obsolescence
4.0	Conclusion
5.0	Summary
6.0	Tutor-Marked Assignment
7.0	References/Further Reading

1.0 INTRODUCTION

Facilities are “sine qua non” in the teaching and learning process for the effective and meaningful utilisation of media in any school setting. Meanwhile, there are many factors to be considered for the adequate use of these facilities viz: spatial, thermal, visual among others. Also, these facilities require regular and constant revitalisation and modernisation so as not to be obsolete. More so, these facilities need to be updated in line with the global technological advancement so as to make them Information and Communication Technology (ICT) compliant. In this unit therefore, some terms that are germane to the facilities for media utilisation and revitalisation within the educational system are explained concisely.

2.0 LEARNIG OUTCOMES

By the end of this unit, you should be able to:

- explain vividly the following terms: obsolescence, modernisation rehabilitation, renovation, remodeling and revitalisation
- discuss the factors to be considered for the facilities revitalisation for media utilisation within the educational system.

3.0 MAIN CONTENT

3.1 General Terms

You will be acquainted with the following terms:

- Obsolescence:** This is a situation whereby the existing facilities become old fashioned hence they are no more in vogue due to the technological advancement, thus new ones have been invented or produced. For instance, the use of Over Head Projector (OHP) has become obsolete or archaic due to the invention of multimedia projector (MP). Therefore, MP is now in vogue. Also, chalkboard has been replaced with the utilisation of magnetic tempo board. Computer also has taken over the use of manual and electric typewriter.
- Modernisation:** As educational programmes demand change/review, older school facilities may be able to continue to serve students effectively through the comprehensive planning of modernisation. Modernization is the changing of the appearance, design, fittings, fixtures, furnishings and service system of the existing facilities. Such facility include physical (building, chairs and tables etc.) visual (boards etc.), thermal (fan, AC etc.), aesthetic (colour painting) and acoustic (sound public address system) facilities in order to be in consonance with the contemporary state of the academic programmes in vogue in terms of styles and modes of teaching and learning.
- Rehabilitation:** It refers to the general overhauling of these existing facilities for better adaptation to new academic programmes. For example, a complete school building can be rehabilitated by changing the roof using long span aluminum sheets in lieu of iron sheets, rebuilding the dilapidated walls, painting the walls with attractive colours, installation of ceiling fans/air conditioning units, among others.

- d. Renovation:** It refers to the process of returning the existing facilities to a good state of repair. That is to say that dilapidated buildings or poorly maintained facilities are sometimes considered to be in a state of disrepair. This is to say that dilapidated buildings or poorly This is the renewing of the existing facilities completely or a part thereof without changing the design, structure or function.
- e. Remodelling:** It refers to any structural change in the appearance, structure or function of a building or improvement to the existing facilities such as building partitioning or roofing, and so on, in line with what is in vogue, or new academic programmes.
- f. Revitalization:** It is a way of making the existing facilities stronger, modern and in fact more healthy and conducive for the new academic programmes. The longevity and durability of the facilities are to be maintained, sustained and even guaranteed.

SELF-ASSESSMENT EXERCISE

1. Differentiate between the following:
 - i. Rehabilitation and Renovation
 - ii. Remodeling and Revitalisation .

3.2 Factors for the Facilities Revitalisation

To revitalise the facilities for media utilisation, the following major factors should be considered:

- Educational Obsolescence
- Location Obsolescence
- Site Obsolescence
- Building Structure and Services Obsolescence
- Environmental Obsolescence

3.3 Educational Obsolescence

This is the most salient factor to be given a prime consideration because it takes precedence over other variables or factors. In fact, it is meaningless to revitalize a facility like school building if the scope has not been considered in terms of directions and desires for changing styles and modes of pedagogical practice. However, policy and decision makers should be guided and assisted by the academic and business staff for this totality of the programmes to be effectively and

meaningfully coordinated, assessed and utilised in the determination of the desired scope of the needs to be facilitated through the revitalization.

All the stakeholders should be considered in the revitalization of the already obsolete educational practices so as to take care of the societal needs and desires.

3.4 Location Obsolescence

The location of a facility particularly a school may become obsolete over the years due to the development of the settlement where the school is located. The location may become so unsatisfactory or constituting “noise factors” to any meaningful and effective pedagogical practice.

For instance, if the location of the school is now having proximity to the highway where there are frequent vehicular horns or market place where assorted noise factors are rampant. These may necessitate the relocation of the school to a more satisfactory and pleasant place.

However, the following factors should be put into consideration for location of a facility like a school:

- The school enrolment should be projected for at least minimum of ten years
- Present and proposed land use in the vicinity where the school is to be located, and whether the area which is perhaps now residential is being converted to other uses
- Transportation possibilities, if service area is beyond walking distance for students
- Traffic problems of magnitudes not easily surmountable by the school authority
- The expansion of business, industry, or commerce into the available land area designed as the service area for the school and anticipated to have become residential
- The age distribution and mobility patterns working in the school service locality
- The trend towards recycling of existing residences to younger/owners’ renters
- The location of the school, if it is in rural or urban area, to have a conservative estimate of the population to cater for with or without school age children.

3.5 Site Obsolescence

The physical site of a school should be considered by the policy and decision makers in relation to the present national and local standards regarding out-of-doors educational areas for play and organised physical educational activities, programmes, access and egress of vehicles off street, staff and visitor's parking and whether the site permits any subsequent building expansion.

However, consideration should be put into the question of purchase of expropriation of adjoining property in order for the expansion of a site most especially in the light of whether or not it is worth acquiring additional land if the existing school is not suitable for revitalization with the long-term validity.

3.6 Building Structure and Services Obsolescence

The facilities like building, structure and services should be seriously put into consideration because they can be very expensive aspects in any revitalization. The services can be classified thus

- (i) electrical services
- (ii) ventilation/heat/ and/or air conditioning service and
- (iii) sanitation/storm/drainage/plumbing services.

However, the following questions can be asked as checks for the new requirements for the revitalization:

- To what extent will the existing services last so as to be consistent with the life expectancy of the facility?
- Is it possible to modify or expand the services economically?
- Is it necessary to replace completely?
- Is it possible to obtain replacement for parts no longer available as standard or current manufacturer's items?
- Is it possible to bring new services to existing areas without altering the major building?
- Are the systems working at full capacity at present?
- To what extent can they be increased with safety, if not?

3.7 Environmental Obsolescence

In any teaching and learning environment, major environmental variables exist and interplay. Meanwhile, such variables include spatial, thermal, visual, acoustic and aesthetic.

- **Spatial Variable:** This factor is very essential

particularly in terms of dimension, usability, layout and configuration of space.

- Each classroom should be roomy enough to ease movement of the students and the teacher and proper seating arrangement of the students. That is, the students are not jam-packed or congested in the classroom.
- **Thermal Variable:** A number of interrelated factors affect air temperature and quality. These factors include the building orientation, trees, colour of building, lighting, climate, number of students, orientation of window and size of windows, etc. The implication of this is that facilities planners must use insulation whenever possible to keep heat in the areas that are being heated, and to keep heat out of the areas that are being cooled. The heat condition in the learning environment should be conducive, healthy and enabling for effective teaching and learning to take place. That is, there should be enough ventilation with the installation of fans (ceiling/wall/standing) or air conditioning devices.
- **Visual:** The most violated environmental condition in classrooms seems to be poor lighting. The learning environment must be well-illuminated for the students and teacher to visualize vividly all the learning activities going on in the environment.
- **Acoustic Variable:** The learning environment provides room for easy audibility of the students for all the learning activities and the environment is devoid of any noise. There are two features involved in designing a good acoustical environment in a school. One is controlling sound within a particular space so that sound that is to be heard can be heard well by making use of Public Address System (PAS) where there is large population of students to enhance the acoustic situation in the learning environment and secondly, preventing the intrusion of unwanted sounds from outside the space. The acoustical treatment of an area attempts to amplify wanted sound and reduce unwanted sound. The success of an acoustical treatment depends largely on the types of materials used on the space surface.

Aesthetic Variable: Aesthetics in the learning environment is achieved by an accumulative effect of outstanding design in structure, smart use of materials, wise choice of colours, distinguished attractive landscaping. A beautiful learning environment is most likely to motivate the student more than a filthy and dilapidated facility.

However, all these variables are existing by design or default and are both quantitative and qualitative (subjective and measurable) thus the policy/decision makers should do proper analysis for thorough consideration.

4.0 CONCLUSION

Due to technological advancement globally, facilities in learning environments are bound to become obsolete thus they need to be revitalized, rehabilitated, modernised and sometimes renovated. Such factors like educational location, site building structure and services, also environment need to be properly considered for effective and meaningful revitalisation.

5.0 SUMMARY

In this unit, you have been acquainted with the following:

- General terminologies such as obsolescence, rehabilitation, renovation, modernisation and remodeling.
- Factors for consideration for the revitalization of facilities.
- Environmental variables viz: spatial, visual, thermal, acoustic and aesthetic.

6.0 TUTOR-MARKED ASSIGNMENT

1. Highlight five factors to be considered in the revitalization of facilities for media utilisation.
2. What are the five essential variables to be put into consideration while revitalising any learning environment.

7.0 REFERENCES/FURTHER READING

AASA (2001). *Planning America's School Buildings*. U.S. Office of Education Handbook.

Ferrara, M. and Ensign, A. (1970). *School Renewal U.S. Office of Education Handbook*.

Rosotto, H. J. (2005). Revitalization of Existing Educational Facilities: A Process. *Research Review* 24(4), 13-20.

UNIT 2 SPATIAL FACILITIES

CONTENTS

- 1.0 Introduction
- 2.0 Learning Outcomes
- 3.0 Main Content
 - 3.1 Orientation on Site and Space
 - 3.2 Spatial Partition Types
 - 3.3 Variety of Space
 - 3.3.1 Teaching/Learning Space
 - 3.3.2 Auxiliary Space
 - 3.4 Space Relationships
 - 3.5 Psychological Dimensions of Space
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor-Marked Assignment
- 7.0 Reference/Further Reading

1.0 INTRODUCTION

In any teaching and learning environment, spatial facilities are immensely significant because they contribute tremendously to meaningful and effective instructional process. Meanwhile, these spatial facilities are divided into three thus: teaching/learning, auxiliary and special services facilities which you will be familiarized with, in this unit.

2.0 LEARNING OUTCOMES

By the end of this unit, you should be able to:

- describe site and space in relation to instructional process
- mention different types of spatial partitions within learning environment
- explain vividly the variety of space in the learning environment
- discuss the relationships among the spaces in learning environment
- explain the psychological dimension of space in the learning environment.

3.0 MAIN CONTENT

3.1 Orientation on Site and Space

In the teaching/learning environment, site can be vertically or horizontally available to the teachers and students while space can be dimensionally represented in shapes such as rectangle, polygon or sometimes in circular form.

However, spaces in school setting can be divided into two thus teaching/learning and auxiliary spaces which can be partitioned as discussed in 3.2

3.2 Spatial Partition Types

Spaces in the instructional setting can be partitioned thus (i) opaque (ii) translucent and (iii) transparent.

- Opaque partition does not allow any light. That is, it is not possible to see objects at the other side of the partitioned space e.g. with the use of plank in the classroom situation.
- Translucent partition allows light to pass through but it is not really transparent e.g. the use of plastic for partitioning.
- Transparent partition gives room for light to pass through and objects at the other side can be seen conspicuously e.g. partition with the use of glass.

However, partitions can also be fixed, movable, assembled and operable with fluid, flexible variable and multiple spaces depending on the class population and purpose of usage.

3.3 Variety of Space

Basically, there are two varieties of space viz:

- (i) Teaching/Learning Space
- (ii) Auxiliary Space

3.3.1 Teaching/Learning Space

This is classified into two thus:

- (i) General/Ordinary Space
- (ii) Specialised Space
 - General/Ordinary Space is the classroom.
 - Specialised Spaces: These are spaces for special

services e.g. library, gymnasium, media resources centre, laboratory, computer centre etc.

3.3.2 Auxiliary Spaces

These are grouped into two main types viz:

- Administrative Spaces e.g. general office, reception, common room, storage area, conference centre, hall auditorium, canteen, dining etc.
- Special Services Spaces e.g. guidance and counselling's room, health centre, workshop/maintenance centre, security post etc.

3.3 Space Relationships

The relationship between spaces in any teaching and learning environment need much to be considered in terms of curriculum correlation between subjects and the degree of sharing of common space materials, tools, equipment and so on. Such curricular correlation can be considered among subjects like physics, chemistry and biology, among others.

3.4 Psychological Dimension of Space

Psychologically, different people with different dimensions to space in terms of colour used for painting the space (walls) equipment being utilised if they are highly noisy, chemicals obnoxious and unpleasant odours, size of population if it is a large one or overcrowded class which can cause psychological disturbances e.g. headache, allergy which can trigger off ailments such as asthma from obnoxious odours of the chemical, epilepsy from congested and noisy class among others.

The colours used for painting the space also have psychologically implications. For instance, colours such as red, blue, green and yellow are highly attractive and catchy, hence these types of colours will attract many people and in fact, they will be happier and psychologically motivated to work in the space or classroom painted with these colours than with dull and unattractive colours, in particular the children.

SELF ASSESSMENT EXERCISE

1. Mention three spatial partition types.

4.0 CONCLUSION

Spatial facilities are significantly paramount in learning environment for meaningful and effective teaching and learning process. They are divided into three main types viz: teaching/learning, auxiliary and special services spatial facilities. These facilities can also be utilised in terms of curricular correlation and relationship. Also they have psychological dimensions based on the colours used for painting them, spatial size, most especially for large populations, types of equipment or tools used (if noisy types) and types of chemical used (if they have obnoxious or unpleasant or injurious odours) which can cause psychological disturbances in human beings.

5.0 SUMMARY

In this unit, you have learnt the following:

- Differences in site and space as related to media utilisation in the learning environment
- Types of spatial partition
- Variety of space
Space relationships and psychological dimensions of space in the learning environment.

6.0 TUTOR-MARKED ASSIGNMENT

1. State three varieties of space.
2. Explain vividly, psychological dimensions of space.

7.0 REFERENCES/FURTHER READING

CEFP (1999). *Guide for Planning Educational Facilities*,
CEFP Ohio: USA

Federal Republic of Nigeria (1979). *Implementation Committee for the
National Policy on Education*. Blue Print.

UNIT 3 FACILITIES FOR THERMAL ENVIRONMENT

CONTENTS

- 1.0 Introduction
- 2.0 Learning Outcomes
- 3.0 Main Content
 - 3.1 Thermal Control Facilities
 - 3.2 Factors that Affect the Thermal Conditions of a Place
 - 3.3 Physiological Factors Peculiar to Individual's
 - 3.4 Thermal Receptivity
 - 3.5 Optimum Thermal Conditions for a Learning Environment
 - 3.6 Control Systems for Maintaining and Sustaining Thermal
 - 3.7 Conditions in Teaching/Learning Environment.
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor-Marked Assignment
- 7.0 References/Further Reading

1.0 INTRODUCTION

Just like spatial factors, thermal factors are equally important in any teaching/learning environment. In fact, findings have shown that in a cool thermal environment, teaching and learning takes place effectively and comfortably in a warm or hot thermal environment. More so, the former was found to have significantly enhanced the students' academic performance and even teacher's presentation more than the latter (Moore, 2003 and Stanley, 2004). Therefore, in this unit, you will be acquainted with the thermal factors treated as follows: factors affecting thermal conditions, physiological factors peculiar to individual for thermal conditions receptivity, optimum thermal conditions and control systems for thermal conditions in the teaching and learning environment.

2.0 LEARNING OUTCOMES

By the end of this unit, you should be able to:

- highlight the factors that affect the thermal conditions of a place
- state the physiological factors peculiar to individuals for thermal conditions receptivity
- explain the optimum thermal conditions for a learning environment
- describe the control systems for maintaining and sustaining thermal conditions in the teaching and learning environment.

3.0 MAIN CONTENT

3.1 Thermal Control Facilities

Globally, thermal conditions differ from one climatic region to another based on the prevailing climatic conditions. For instance, in the tropical region of the world, where there is constant “high heat budget”, cooling thermal facilities are keenly needed in making teaching and learning environment conducive and comfortable for meaningful and effective instructional process to take place e.g. in Nigeria, Ghana, Uganda etc. Whereas, in the temperate region, where there is relatively constant cool thermal environment, cooling thermal facilities or devices may not necessarily be needed but heating devices will be greatly required e.g. in places like the United Kingdom, France, Germany, USA, South Africa (Cape Town), Algeria (Algiers), Libya (Tripoli) and Morocco, among others.

However, the following climatic elements and factors should be properly considered in order to know the type of thermal control facilities to be provided at a particular place on the earth, viz: temperature, rainfall, humidity, winds, altitude, latitude and continent, because they determine the thermal condition of a place. These factors are discussed concisely in 3.2.

3.2 Factors that Affect the Thermal Conditions of a Place

The following factors mentioned in 3.1 affect the thermal condition of a particular place on earth:

1. **Temperature:** The degree of temperature of a place determines the thermal condition of that place. In fact, the higher the temperature of a place, the hotter the place is, while, the lower the temperature, the cooler the place will be. Therefore, temperature is measured with the use of maximum and minimum thermometers (mercury and alcohol are used in the instrument for the measurement respectively). The measurement is usually now in degree centigrade (0°). The maximum indicates the highest temperature, while the minimum shows the lowest within day and the difference is referred to as the Diurnal Thermal Range (DTR). The DTR indicates the thermal condition of that place thus, determines the thermal facilities to be provided for conducive and comfortable teaching and learning process.
2. **Rainfall:** During rainy periods, thermal conditions of a place tend to fall because the sun's rays are blocked and therefore less heat reaches the earth. This is evident in parts of West Africa particularly in Nigeria, Togo, and Benin Republic, among

others. However, during the dry season, the temperature increases which make the thermal condition highly unbearable thus, cooling devices such as electric fans and air conditioning are needed in making teaching and learning effective and meaningful.

3. **Humidity:** It is usually called relative humidity (RH) which is the absolute humidity (AH) expressed as percentage of the total capacity of the air concerned at the particular thermal condition (temperature). It is also the amount of the water vapour retained by the air at a particular thermal condition. Therefore, if the RH reaches 100%, the air is saturated and cannot hold all its water vapour. Hence, condensation takes place in form of dew, fog, or eventually rain. In fact, the higher the thermal condition, the lower the RH thus, determines the types of thermal facilities to be provided for conducive and comfortable learning environment.
4. **Winds:** They affect the thermal condition of a place by transferring large masses of air containing warmth or cold from a place to another. In Nigeria, for instance, you will observe that during the wet season (rainy period), the tropical maritime air mass (South West wind) which originates from the Atlantic Ocean, brings warmth and moisture to the country. Thus, during this period, the thermal condition in the country is relatively warm, whereas, the tropical continental air mass (North East Trade wind) that develops from the Sahara desert during the dry season brings dry, chilly and dusty wind into the country, locally referred to as harmattan in Nigeria. Hence, the thermal condition during the dry season particularly between November and January is relatively cold or chilly. All these conditions determine the type of thermal facilities to be provided in Nigeria during the different seasonal periods so as to make the teaching/learning environment conducive and comfortable for both teachers and learners.
5. **Altitude:** This simply means the height of a particular place above the sea level. The higher one goes the cooler it becomes. In fact, the increasing altitude gives decreasing temperature at the rate of 1°C for every 150m. However, there are considerable variations from this average figure depending mainly on the amount of water vapour present in the air. The reason for this steady decline in temperature is the decreasing of the heat in the air is obtained by radiation from the earth and therefore the greater the height, the less radiated heat will be. Also, the retentive process of air depends on amounts of water vapour and dust present and both of these decrease upwards because the pressure and

density of the atmosphere also decrease. In Nigeria, for instance, Jos Plateau is a good example of a place where the altitudes has significant effect on the thermal condition of the place. Because Jos is located on a high altitude, Jos is always cooler than the surrounding places within the same latitude. Therefore while in Jos, thermal facilities will require heating devices for conducive and pleasant learning environment, whereas in the surrounding environments, cooling devices will be greatly needed because of the constant high temperature.

6. **Latitude:** This is the distance of a place north or south of the equator measured in degrees. The equator is on latitude (0^0) which divides the globe into two equal parts, that is, Northern and Southern hemispheres. Meanwhile, the source of all heat is the sun; hence the importance of latitude as far as thermal condition/temperature of a place is concerned. Whenever, the sun's rays are almost vertical, particularly at the equator (0^0) the heat is more concentrated and also the rays have less atmosphere to pass through and therefore less chance of losing heat. Whereas, the sunlight reaching the earth in high latitudes, that is, above the (Tropics $23\frac{1}{2}^0$ North and South of the equator) passes much more obliquely through the atmosphere than the rays within the Tropics, most especially along the equator. Therefore, the more reason it is a broad and fairly accurate generalization to state that hot climate (heat) decreases towards either north or south globally from the equator. These conditions should be seriously considered on the provision of thermal control facilities in any of these places on the globe for effective and comfortable learning environment.
7. **Continentality:** This is the distance from the ocean or sea into the continent or interland or onshore. The areas which have proximity to the ocean/sea experience oceanic cooling effects, thus, the thermal condition/temperature is relatively low. For example, in Nigeria, Lagos, Port Harcourt, Calabar while places that are very far from the ocean (Atlantic Ocean) experience relatively high temperature like Kano, Sokoto and Maiduguri. Therefore, thermal facilities to be provided will differ from one place to another based on the distance from the sea for conducive and comfortable learning environment.

SELF-ASSESSMENT EXERCISE

1. State five factors that affect the thermal conditions of a place.
2. Differentiate between latitude and altitude as they affect the thermal conditions of a place.

3.3 Physiological Factors Vis-à-vis Individual's Thermal Receptivity

The following physiological factors reflect one's receptivity to any climatic condition particularly thermal condition. They include age, sex, colour weight and the rate of metabolism.

- **Age:** Younger people are more energetic than older people. Thus, the former are more likely to have stronger immune body systems
- that can be easily adapted to any climatic condition than the latter.
- **Sex:** Males seem to be more energetic than their female counterparts of the same age group, hence, males are more likely to adjust and adapt to any climatic condition than females.
- **Colour:** The skin colour of the individual react to particular climatic conditions their natural habitat. For instance, black people are more tropically oriented than white people due to their colour. In fact, white people may find it difficult to adapt or acclimatise to tropical regions with constant "high heat budget" and if care is not taken, the white people may experience sunburns and other skin disorders as a result of the thermal condition.
- **Weight:** The body weight adjusts to any climatic condition where that body finds itself. A person with obesity, that is, overweight, may find it more difficult to adjust to high heat in the tropical climate than the slimy person because, the former is more likely to perspire profusely, more so if his/her metabolic rate is high, whereas the latter may adjust easily with little or no sweat.
- **Rate of Metabolism:** These are the chemical processes in living things (human being) that change food and other things into energy and materials for body growth. These processes are subject to prevailing climatic conditions. In fact, the body's metabolism is slowed down under extreme cold climatic condition, whereas, the reverse is the case under extreme hot weather.

Apart from the rate of metabolism, other ways by which the human

body may experience heat loss are through radiation, about 40%; convection (that is, air around blowing away heat) about 40%, and through evaporation that is body's perspiration, about 20%.

By and large, all these physiological factors should be considered before making provision for thermal facilities for a meaningful, effective, conducive and comfortable teaching and learning environment.

3.4 Optimum Thermal Conditions for a Learning Environment

These are the best possible thermal conditions that should be present for a conducive learning environment and maximum teaching and learning effectiveness and efficiency. Recommended air temperature is 22.2°C , while the upper limit is 26.1°C since the normal human body temperature is 36.8°C . Therefore, the atmospheric temperature should be lower than that of the body temperature for the maximum learning efficiency to take place. In fact, from the empirical study, it was found out that when the atmosphere gets warmer, there is an increase in errors made while learning particularly if it involves calculation. The relative humidity, that is, optimally required in the classroom should be between 25% and 60% minimum and maximum respectively.

However, the optimum range is between 40-60% affect the rate of learning negatively. The optimum air velocity required for maximum, efficient and effective learning is between 6.1-12.2m per minute. Moreover, students should be given recess or break for relaxation so that they can get more fresh air apart from that of the classroom. However, to make relative provision for these optimum thermal conditions, globally a control system for thermal environment is required. This is discussed in 3.5.

3.5 Control Systems for Achieving Optimal Thermal Conditions for Teaching and Learning Environment

There are two major control systems for maintaining and sustaining thermal environment for teaching/learning process namely: (i) Natural Control (ii) Artificial Control:

- **Natural Control:** It involves the provision of shade through the planting of trees and cross ventilation through windows and doors. Many public primary and secondary schools in Nigeria depend mainly on these natural control systems in maintaining and even sustaining a comfortable thermal

environment for teaching/learning processes to take place.

- **Artificial Control:** This involves the fanning system manually or/and mechanically and air conditioning system, particularly in the tropical region in which Nigeria is located.

In the temperate region, electronic heating system is employed during the winter period to warm up the environment. In the summer period however, air conditioning system is employed to make the environment cool.

Double glazing is also employed in the temperate countries like the USA, UK, Japan and France among others, to keep the room warm with the combination of the heating system. All these are to control the thermal environment so as to make it conducive and comfortable for teaching learning process.

4.0 CONCLUSION

The provisions of thermal facilities are essentials for thermal environment to be conducive and comfortable for teaching/learning process. Therefore, the physiological factors such as age, sex, weight, colour and the rate of metabolism coupled with the control system for maintaining and sustaining the effective thermal environment are all germane to maximize the learning environment efficiency.

5.0 SUMMARY

In this unit, you have learnt the following:

- Facilities for thermal control
- Factors that affect the thermal conditions of a place.
- Physiological factors vis-à-vis individual's thermal conditions receptivity.
- Optimum thermal conditions for a learning environment.
- Control/systems for maintaining and sustaining thermal condition for instructional process.

6.0 TUTOR-MARKED ASSIGNMENT

1. Highlight five physiological factors peculiar to individual's thermal conditions receptivity.
2. Explain vividly the control system for maintaining and sustaining thermal environment for comfortable teaching and learning process.

7.0 REFERENCE/FURTHER READING

Woodcock, R.G. (2005). *Weather and Climate*. New York: M. E
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UNIT 4 FACILITIES FOR VISUAL ENVIRONMENT

CONTENTS

- 1.0 Introduction
- 2.0 Learning Outcomes
- 3.0 Main Content
 - 3.1 Visual Environment
 - 3.2 Factors Affecting Visualization
 - 3.3 Illuminations in Learning Environments
 - 3.4 Factors to consider for Visual Environment Lighting
 - 3.5 Natural Light Devices for Visual Learning Environment.
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor-Marked Assignment
- 7.0 References/Further Reading

1.0 INTRODUCTION

Visual sensory modality is one of the five human sensory modalities that should be properly developed in the learners because in learning and other activities of life, this sensory modality is used in many ways. In fact, it is very vital to human existence, thus in the teaching/learning environment, facilities should be adequately provided for conducive and comfortable visual environment. Therefore, in this unit, you will be treated with the required facilities that should be provided for effective visual environment in the instructional setting.

2.0 LEARNING OUTCOMES

By the end of this unit, you should be able to:

- describe visual environment
- highlight factors affecting visualization
- explain illumination in the learning environment
- mention factors to consider for visual environment
- discuss natural light devices for visual learning environment.

3.0 MAIN CONTENT

3.1 Visual Environment

The visual environment deals with visual facilities in which lighting is the most significant. However, lighting in the visual environment has two major sources viz: natural light from the sun

and artificial from electricity. It is generally accepted that the visual environment in a school should contribute to the learning environments.

Meanwhile, for effective instructional process, visual environment should be free from glare, inadequate contrast and erratic and epileptic power supply. That is, there should always be an appreciable high level of brightness. Dullness and fluctuating in the level of brightness should be minimized or if possible totally eradicated.

Furthermore, adequate visual environment provides for easy, comfortable, pleasant and accurate visualization. The main visual tasks that the learning environment should provide for are reading, writing and observation in all subjects but most especially in the science and vocational oriented subjects such as chemistry, physics, biology, computer studies, home economics and fine and applied arts. There have been many studies confirming that much of the fatigue experienced by students in the teaching-learning environment is caused by seating arrangement, poor light and illumination conditions (Adedapo, 2014). Therefore, the visual environment of a school should promote the visual health of the students. By and large, adequate and constant provisions of visual facilities in the visual environment are of paramount importance for effective and meaningful teaching and learning process in any school setting.

3.2 Factors Affecting Visualisation

The following factors affect the level or degree of visualisation in the visual environment namely:

1. **Distance:** This is the distance to the object to be visualized. All things being equal, the proximity of the object to the viewer determines the level of the brightness of the object to the viewer (person who is visualizing). However, individual differences in the visualization come into play. That is some people are suffering from various visual impairments viz: **myopia** – that is shortsightedness, **hypermetropia** – long-sightedness and **astigmatism** – majorly due to the old age. Therefore, all these individual's visual impairments should be properly and adequately catered for in a worthwhile visual environment for effective teaching and learning process. Moreover, sometimes to visualise a very long distant object, it will require the use of powerful instrument like **telescope** which will bring the object nearer and even magnified to the visualiser.
2. **Size:** The size of the object affects its visualisation. The bigger or

larger the object, the easier or even brighter the object is seen by the viewer. However, some objects are very small in size and they cannot be seen with our naked eyes. These objects are known as micro-organisms like bacteria, viruses etc. therefore, an appropriate powerful instrument will be required to observe them. Such instrument is called a **microscope**. It is advisable that in visual environment, the sizes of objects should be large enough for easy visualisation so as to enhance the learning process.

3. **Brightness of the Light:** Visualisation is also a function of the level of brightness. The brighter the light the more the object is vividly seen. However, brightness depends on the source of the light. For instance, if it is artificial source like electricity and there is low voltage from the transformer, the brightness will be low or dull. Therefore, if the voltage from the source of power is reasonably high and constant, the brightness will be maintained and sustained thus the enhancement of the visual environment which will correspondingly enhance the teaching learning environment.
4. **Contrast:** This connotes the amount of difference between light and darkness within the visual environment. That is, the sharpness or dullness of the light in relation to the colour of the visual environment and even the object to be visualised. Therefore, the sharper and brighter the contrast of the visual environment, the more comfortable is the visualisation in the instructional environment.
5. **Colour:** The colour of the object, light and even the visual environment affects the level of visualization. For instance, if the colour of the object is dull, it will require a very bright light to see the object within the visual environment. Whereas, the reverse is the case if the colour is bright. More so, the brighter the weather in the visual environment, the clearer the object is seen. The colour of the light is also determines the level of visualisation. For example, if the colour of electric bulb is red or blue, the brightness of the light is most likely to be dull, while, if it is white the brightness will be good enough to see any object within the visual environment vividly and conspicuously. Therefore, variables such as distance, size, brightness of light, contrast and colour of the object, light and environment should be considered for any worthwhile visual environment vis-à-vis comfortable learning environment.

SELF-ASSESSMENT EXERCISE

1. Explain the two major sources of light in the visual environment.
2. Mention five factors that can affect visualisation.

3.3 Illuminations in the Learning Environment

The light should be evenly distributed depending on the type of learning space. For instance, classroom, library, laboratories should be well-illuminated and ventilated and also lecture hall, theatre and auditorium. The hostels and dining hall should not be left out. Enough windows, doors and roof opening should also be provided so as to give room for natural illumination and ventilation. All these will contribute tremendously to the conduciveness and comfortability of the learning environment thus making teaching and learning more effective and efficient.

For maximum efficiency and optimum utilisation of the visual environment, the recommended colour for ceiling should be white and walls can be of different attractive colours. Light-controlled devices such as venetian blinds, tinted glass, roller blind/shade, shutters, overhand and draperies can be used to provide shade for the learning environment.

3.4 Factors to Consider for Visual Environment Lighting

The following factors should be considered for lighting in the teaching learning environment:

- **Nature of Tasks:** The tasks to be carried out in the visual learning environment should be considered. For example, the lighting in Art Room must be accurate for colour rendition thus fluorescent lighting will be more useful and suitable and adjustable desk lamp. In the auditorium, adequate light is needed for lectures, seminars, conferences, workshops and symposia that will be organized there. For cafeteria, just sufficient lighting is needed since; no learning task is taking place there. At the corridors, less artificial light is needed particularly in the tropical region where there is always constant sunlight nearly throughout the year; while in the temperate region much light will be required because of the different seasons they experience. Therefore, their weather changes suddenly from day light to darkness.
- Library requires much light since reading is the major task that is taking place there. In the studio, photographic studio, different kinds of lights are needed such as directed lights, flood lights etc.

Adequacy: This will be in terms of quantity and quality of

distribution to different places for efficiency and effectiveness of the different tasks that will be taking place in the particular learning environment. For instance, learning resource centre will require certain quantity and quality of light that need to be distributed evenly and adequately throughout the centre for a worthwhile colour resolution, clear images and contrast.

Economy: The cost of procurement of these visual facilities should be considered so as to be cost-effective. Some lighting facilities are expensive while some are less expensive, like fluorescent bulb, tube are economical even in terms of rate of energy consumption, that is, electricity.

3.4 Natural Light for Learning Environment

People employ different ways of bringing natural light into the learning environment. These ways include:

- **Clerestory:** This is the upper part of the wall of a building rising above the roof of a lower part of the same building and in which there are usually a number of windows for lighting to penetrate
- into the environment. This is found in some churches, mosques, auditoriums, lecture theatres and halls.
- **Skylight:** This is the use of transparent roofing sheets to cover buildings. This is to allow light to penetrate into their environment. This also is employed in some of the learning environments.

4.0 CONCLUSION

Since the visual sensory modality is one of the essential modalities by which learning is taking place, therefore, visual environment needs to be adequately taken care of by providing adequate, proper and suitable lighting facilities both naturally and artificially in the learning environment.

5.0 SUMMARY

In this unit, you have learnt the following:

- Visual Environment
- Factors affecting visualization
- Illuminations in learning environment
- Optimum visual environment
- Factors to consider for lighting learning environment
- Natural light devices for learning environment.

6.0 TUTOR-MARKED ASSIGNMENT

1. Describe vividly how a learning environment can be illuminated.
2. Explain the optimum requirements for visual environment.
3. Mention the factors to be considered for lighting visual environment.
4. State natural light devices for visual learning environment.

7.0 REFERENCES/FURTHER READING

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UNIT 5 FACILITIES FOR ACOUSTIC ENVIRONMENT

CONTENTS

- 1.0 Introduction
- 2.0 Learning Outcomes
- 3.0 Main Content
 - 3.1 Acoustic factors in a Learning Environment
 - 3.2 Problems of Excess Reverberation
 - 3.3 Sound Controlled Measures
 - 3.4 Physiological and Psychological Dimensions of Sound
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor-Marked Assignment
- 7.0 References/Further Reading

1.0 INTRODUCTION

The auditory sensory modality is as important as the other sensory modalities viz, visual, olfactory, tactile and gustatory in teaching and learning environment. This environment needs special acoustic facilities for effective and worthwhile instructional process.

In this unit, you will be exposed to acoustic factors in a learning environment and the required acoustic facilities for conducive and comfortable teaching and learning environment.

2.0 LEARNING OUTCOMES

By the end of this unit, you should be able to:

- explain acoustic environment
- discuss the problems of excess reverberation
- describe acoustic conditioning
- explain the physiological and psychological dimensions of sound.

3.0 MAIN CONTENT

3.1 Acoustic Environment

In this environment, the climatic condition is pervaded with sound. Therefore, the acoustic climatic needs acoustic facilities for the following:

- problems of excess reverberation
- process of sound transmission

- sound balancing
- relationships of spaces for effective acoustic environment
- effects of mechanical equipment on sound
- selection of furniture
- use of special materials.

All the above listed facilities should be provided for conducive and healthy acoustic environment thus making teaching-learning environment enabling for effective instructional process.

3.2 Problems of Excess Reverberation

This simply means too much noise that continues for some time after it has been produced because of the surfaces around it. This has implication for kind of materials used in constructing the learning environment because excess reverberation may constitute “noise factors” to effective instructional process if not properly controlled. However, to control or overcome excess reverberation the following can be employed:

- Reduction or elimination of unwanted sounds through putting up of notice with a sign post “DO NOT MAKE NOISE” or “NOISE MAKING IS PROHIBITED” or “LOITERING IS NOT
- ALLOWED”. Fixing the chairs and tables or desks, always shut off sound doors of air conditioning room to maximize desired speaking and hearing condition in the learning environment.
- Prevention of sound propagation from our activity to another by partitioning the learning environment (classroom) properly and keeping noisy classes together.
- Prevention or reduction of sound interference from external sources.
- Insulation of each classroom and not just partitioning cum conditioning so that noise in that class will not infiltrate into another.

SELF-ASSESSMENT EXERCISE

1. Explain the term “acoustic environment”.
2. Itemise four ways of preventing excess reverberation in the learning environment.

3.3 Sound Controlled Measures

Since sound travels not only through air, but through solid substance as well, the success of an acoustical treatment depends largely on the types of materials on the space surface. Sound can be conditioned in two major ways viz: structural designed and structural material.

- i. **Controlling Sound through Structural Materials:** This can be in two ways namely: porous materially conditioning and non-porous materially conditioning.
 - **Porous Materially Conditioning:** This can be done through acoustical ceilings, carpeting,
 - draperies (wood) heavy curtains in glassy windows. All these absorb sound and even prevent
 - reflection.
 - **Non-Porous Materially Conditioning:** Materials such as concrete wall, plaster, glassy
 - wood, do not absorb sound; they reflect the sound which reach them.

- ii. **Controlling Sound through Structural Design:** Sound can be conditioned through structural designs such as non-parallel surfaces, walls as well as saw-tooth walls. They disallow reflection. Certain louvres can also be conditioning, they are called 'Acoustic Louvres'. They also absorb sound.

Through insulation such as using double glazed doors and windows. Partitioning and zoning of rooms which are noisy together such as gymnasium, music, typing rooms, while library, computer rooms and audio rooms can be zoned together.

3.4 Physiological and Psychological Dimensions of Sound

Physiologically, different people react to sound in different ways depending on age, sex, colour, weight and culture. For instance, a younger child may be excited by the sound from a cat, while the older person may not find to be amusing. Also, most black Africans enjoy noisy environment, whereas to most white people it is an abomination.

A person with obesity in terms of weights is more prone to shock from a loud sound vibration while a light weight person is less-prone. Psychologically, much noise causes environmental pollution which may

lead to high blood pressure, headache, emotional instability and disturbance. However, from physiological point of view, there are certain decibel levels of sound to be heard. The levels are as follows based on decibel bearing

Level in percentage	
Threshold of hearing	0%
Whispering	15-20
Talking/Normal conversation	40-60
Thunder sound	110
Factory and industrial noises	100-140
Painful sound that disturbs the ear	120-140
Multiple engine jets	140-180

Source: USA CEFP (1998). *Guide for Planning Educational Facilities*.

Audio metre is the instrument used to measure the level of loudness of sound. Thus, the levels highlighted are decided through the use of the instrument.

4.0 CONCLUSION

Acoustic environment requires provision for special and up to date acoustic facilities that will be Information and Communication Technology compliant, so as to make teaching and learning environment more effective and conducive for instructional process in any educational system.

5.0 SUMMARY

You have studied the following in this unit:

- Acoustic environment
- Problems of excess reverberation.
- Acoustic conditioning
- Physiological and psychological dimensions of sound.

6.0 TUTOR-MARKED ASSIGNMENT

1. State the two major ways by which sound can be conditioned.
2. Explain vividly, the physiologically and psychologically dimension of sound.

7.0 REFERENCES/FURTHER READING

CEFP (1998). *Guide for Planning Educational Facilities*. Ohio, USA.

Rerowits, H. (1999). *Environment of Educational Facilities: A Guide to Planners and Administrators*. Syracuse University Research Institute.

ANSWERS TO SELF-ASSESSMENT EXERCISE IN UNIT 1

- i. The differences between rehabilitation and renovation are outlined below:**

Rehabilitation: It refers to the general overhauling of these existing facilities for better adaptation to new academic programmes. For example, a complete school building can be rehabilitated by changing the roof using long span aluminum sheets in lieu of iron sheets, rebuilding the dilapidated walls, painting the walls with attractive colours, installation of ceiling fans/air conditioning units, among others. While

Renovation: It refers to the process of returning the existing facilities to a good state of repair. That is to say that dilapidated buildings or poorly maintained facilities are sometimes considered to be in a state of disrepair. This is to say that dilapidated buildings or poorly This is the renewing of the existing facilities completely or a part thereof without changing the design, structure or function.

- i. The differences between remodeling and revitalization are outlined here:**

Remodeling: It refers to any structural change in the appearance, structure function of a building or improvement to the existing facilities such as building partitioning or roofing, and so on, in line with what is in vogue, or new academic programmes.

Revitalisation: It is a way of making the existing facilities stronger, modern and in fact more healthy and conducive for the new academic programmes. The longevity and durability of the facilities are to be maintained, sustained and even guaranteed.

ANSWERS TO SELF-ASSESSMENT EXERCISE IN UNIT 3

Question 1

Five factors that affect the thermal conditions of a place are:

- (a) Temperature
- (b) Wind
- (c) Humidity
- (d) Rainfall
- (e) Altitude

Question 2

Latitude is the distance of a place north or south of the equator measured in degrees. The equator is on latitude (0°) which divides the globe into two equal parts, that is, Northern and Southern hemispheres. Meanwhile, the source of all heat is the sun; hence the importance of latitude as far as thermal condition/temperature of a place is concerned. Also, Altitude is the height of a particular place above the sea level. The increasing altitude gives decreasing temperature at the rate of 1°C for every 150m. However, there are considerable variations from this average figure depending mainly on the amount of water vapour present in the air.

ANSWERS TO SELF-ASSESSMENT EXERCISE IN UNIT 4

1. The two major sources of light in the visual environment are (i) natural light from sun and (ii) artificial light from electrician.
2. Five factors that can affect visualization are: (i) colour (ii) size (iii) distance (iv) contrast and (v) brightness of the light.

ANSWERS TO SELF-ASSESSMENT EXERCISE IN UNIT 5

1. Acoustic environment is the environment that the climatic condition is revealed with sound. Therefore, the acoustic climatic needs acoustic facilities.
2. Four ways of preventing excess reverberation in the learning environment are:
 - a. Reduction or elimination of unwanted sounds through putting up of notice with a sign post.
 - b. Prevention of sound propagation from our activity to another by partitioning the learning environment.
 - c. Prevention or reduction of sound interference from external sources.
 - d. Insulation of each classroom and not just partitioning cum conditioning.
 - e.

ANSWERS TO TUTOR-MARKED ASSIGNMENT IN UNIT 5

1. The two major ways by which sound can be conditioned are:
 - (a) Controlling sound through structural materials
 - (b) Controlling sound through structural design

2. Physiologically, different people react to sound in different ways depending on age, sex, colour, weight and culture. While psychologically much noise causes environment pollution which may lead to high blood pressure, headache, emotional instability and disturbance.

**MODULE 2 REHABILITATION OF FACILITIES FOR
MEDIA UTILISATION**

Unit 1	Facilities for Aesthetic Environment
Unit 2	Planning of Educational Facilities
Unit 3	Design of Media Centre
Unit 4	Management of Media Centre
Unit 5	Facilities for M-learning Adoption and Utilisation in the Instructional Process

**UNIT 1 FACILITIES FOR AESTHETIC
ENVIRONMENT****CONTENTS**

1.0	Introduction
2.0	Learning Outcomes
3.0	Main Content
3.1	Aesthetic Environment
3.2	Factors Affecting Aesthetic Appreciation
3.3	Aesthetic Perception Variables
4.0	Conclusion
5.0	Summary
6.0	Tutor-Marked Assignment
7.0	Reference/Further Reading

1.0 INTRODUCTION

Health is wealth according to an aphorism. Therefore, to be living healthy and wealthy our environment needs a worthwhile aesthetic appreciation or in other word, the environment should be plausibly and appreciably beautified so as to foster our health status. This is also germane to the learning environment, because a well beautified learning environment enhances learners' attendance in the school, thus correspondingly enhances their academic performance. In this unit therefore, you will be exposed to aesthetic environment and those facilities to be provided for making learning environment conducive and comfortable for effective teaching and learning process.

2.0 LEARNING OUTCOMES

By the end of this unit, you should be able to:

- describe aesthetic environment
- explain factors affecting aesthetic appreciation of the environment
- discuss aesthetic perception variables.

3.0 MAIN CONTENT

3.1 Aesthetic Environment

The environment should be beautifully and hygienically maintained and sustained for its constant aesthetic appreciation. Therefore, the following factors are essential to the beautification of the environment viz: colour, proportion, fluidity and space, general appearance, unity and structural expression.

- **Colour:** This contributes tremendously to the aesthetic appreciation of the environment, more so, if it is very attractive and catchy. However, the choice of colour depends on individual's level of aesthetic appreciation, economy, taste and colour connotation. By and large, many people have soft spot for colours like red, blue, green, yellow and brown, among others.
- **Proportion:** The environmental beautification should be done proportionally or possibly symmetrically, so as to avoid a riot of colours. Also the colour scheme should be proportional, that is, moderation, in the use of colours, should be considered. If colour red is to be used, it should be applied reasonably with other colours such as yellow, blue etc.
- **Space and Fluidity:** The aesthetic appreciation should maintain proportional spatial distribution with quality (fluidity). That is, in terms of space, the colour should be moderately painted with proportional spacing and quality that is, not faintly printed. For instance, if red and blue colours are used, they should be applied evenly and uniformly.
- **General Appearance:** The appearance of a beautified environment should be generally attractive and a worthwhile aesthetic appreciation. The effect should be population-pull rather than population-push. A learning environment should be hygienically maintained and sustained and comfortable.
- **Harmony of Colours:** The colours used for painting should be in harmony and unity with each other. As aforementioned, a riot of

- colours should be avoided. Red colour should not be applied on the black colour; rather red can be applied together with white.
- **Structural Expression:** The structure to be beautified should be considered particularly in terms of colour structural expression. The expression should connote what the structure is meant for. For instance, a ceiling in the residential building is mostly painted with white colour. While iron poles erected to buttress a structure should be painted with black to prevent rustication and to maintain and sustain the beautification.

3.2 Factors Affecting Aesthetic Appreciation

For the environment to be aesthetic and immensely appreciated, the following factors should be taken cognizance of, functionality, interior and exterior of the environment.

- **Functionality of the Environment:** A good aesthetic environment should be functional. That, it should attract people and be used for the purpose it is established or constructed for. For instance, if a learning environment is appreciably and aesthetically constructed, the learners will be highly motivated to learn in the environment, thus, their academic performance will be tremendously enhanced. Therefore, this will also foster the functionality of the learning environment.
- **Interior Environment:** The interior or inner part of the learning environment should be aesthetically appreciated if possible more than the exterior (outside) so as to make teaching and learning more conducive and comfortable for both teachers and learners. Therefore, the interior parts of the environment such as the walls, ceilings and floors should be beautifully painted, decorated with terrazzo, ceramic, tiles, carpet, linoleum, particularly the floors. These will also enhance the acoustic, thermal and even the visual conditions of the environment.
- **Exterior Environment:** The exterior (outside) part of the environment particularly the building in the learning environment should also be beautifully maintained. The walls, doors, windows, roof should be painted with attractive and plausible colours that can be regularly maintained and even sustained. Possibly, the interior and exterior decorators can be employed for the maintenance and sustenance of the aesthetic appearance and appreciation of the learning environment (school environment).

3.3 Aesthetic Perception Variables

The following variables determine the level of aesthetic perception of the individual. They are the age, sex, race, socio-economic class, location (rural/urban) and sense of colours.

- **Age:** The age of the individual affects the perception of the aesthetic environment. In fact, the older the age the less the perception level decreases. That is, at younger age (20-40 years)
- the individual's level of aesthetic perception is higher than at older age (70 years and above). Children at the tender age, have perception for aesthetic environment with attractive and catchy colours such as red, blue, green and yellow. Therefore, this implies such that the red colour should be used in painting the learning environment (school buildings) so as to motivate and encourage them in their regularity in school attendance thus, correspondingly enhancing their academic performance.
- **Sex:** Both male and female individuals perceive beauty differently. In fact, from empirical studies, females are more body beauty conscious than males, while, the latter are more aesthetic environmentally concerned than the former. However, the two sexes need beautiful and healthy environment for work. This connotes that, both male and female teachers and students should be more conscious in terms of aesthetic appreciation of our environment.
- **Race:** The racial background of the individual determines his or her level of aesthetic appreciation. From research, findings showed that white people are more environmental aesthetic conscious than the black people most especially the black Africans. Therefore, in African countries particularly in Nigeria, our level of perception of aesthetic appreciation is at low ebb. This means that, Nigerians need to be encouraged and motivated so as to be more aesthetic environmental friendly and even conscious for hygienic and comfortable living, most importantly both in our learning and even residential environments.
- **Socio-economic class:** The socio-economic status of the individual also determines the level of aesthetic appreciation of that person. Most people with high socio-economic status have higher aesthetic appreciation than the people with low socio-economic status. More so, the former have enough money to beautify their environment more than the latter. Therefore, the economy of the individual is an indispensable variable that determines the

level of the person's environmental beautification.

- The implication of this is that, all the stakeholders in education should be involved in the environmental aesthetic of the learning environment by contributing their quotas both in cash and kind.
- **Location:** This simply means rural or urban location. That is, the dwelling place of a person determines his or her level of aesthetic appreciation particularly in the living environment. Most urban people have higher perception of the aesthetic appreciation than the rural people this may be due to the high poverty level of the rural dwellers and high opulent level of the urban dwellers. This indicates that, more attention should be focused at the rural areas in terms of the environmental beautification particular in both residential and learning environments by the government and in fact, other educational stakeholders. More so, both the rural dwellers and the urban dwellers should be more environmental conscious and friendly.
- **Sense of Colours:** The perception level of aesthetic appreciation is also being determined by the person's sense of colours. That is, some people appreciate certain colours than the other. For instance, many people have soft spot for attractive colours such as brown, white, red, green, blue and yellow, while some people like relatively attractive colours like pink, violet, indigo among others. In fact, the more distractive the colours are, the greater the level of perception of aesthetic appreciation by many people. By and large, all these factors and variables should be taken cognizance of in developing our environment aesthetically most especially within the school setting.

SELF ASSESSMENT EXERCISE

1. State five factors to be considered for aesthetic environment.

4.0 CONCLUSION

Aesthetic environment is indispensable within the teaching learning environment for conducive and effective instructional process to come by. In fact, a maintainable and sustainable aesthetic learning environment will no doubt enhance learners' academic performance tremendously.

5.0 SUMMARY

You have been exposed to the following in this unit:

- Aesthetic environment
- Factors affecting aesthetic appreciation.
- Aesthetic perception variables.

6.0 TUTOR-MARKED ASSIGNMENT

1. Mention three factors that affect aesthetic appreciation in the individual.
2. Highlight five variables that determine the level of aesthetic appreciation in a person.

7.0 REFERENCE/FURTHER READING

Beronita, N. (2002). *Aesthetic Environment of Educational Facilities: A Guide for Policy Makers/Planners*. USA.

UNIT 2 PLANNING OF EDUCATIONAL FACILITIES

CONTENTS

- 1.0 Introduction
- 2.0 Learning Outcomes
- 3.0 Main Content
 - 3.1 Who Should Plan?
 - 3.2 Factors/Conditions that Guide Planning
 - 3.3 Administrative and Supportive Services Requirements
 - 3.4 Site Selection
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor-Marked Assignment
- 7.0 References/Further Reading

1.0 INTRODUCTION

In planning educational facilities, planners should include the administrators, architects, engineers, teachers and even the students. Also, the following factors should be considered: institutional objectives and philosophy, curriculum requirements, societal needs, physical and social factors among others.

All these and the site selection for the educational facilities all are discussed concisely in this unit.

2.0 LEARNING OUTCOMES

By the end of this unit, you should be able to:

- explain the people that should be involved in the planning of educational facilities
- highlight the factors that can be considered for guiding the planning
- describe the site selection criteria for the planning of educational facilities.

3.0 MAIN CONTENT

3.1 Who Should Plan?

The following people should be involved in the planning of educational facilities.

- (i) **Administrators:** They include the educational project unit officers within the Ministry of Education (federal/state) and the chief executive officer of the institution (head of institution). For instance, if it is in secondary school, the principal; primary school, the head-teacher; university, the vice chancellor; college of education, the provost and polytechnic, the rector.
- (ii) **Community Members:** Members of the community should be involved in the planning of the educational facilities so that their needs will be catered for in the planning. They may include the head of the community (king/chief/emir), the communities secretary and some other recognised personalities in the community.
- (iii) **The Governing Council Members of the Institution:** The council is mostly being headed by the chairman, who is usually a well recognised and charismatic personality in the community or country.
- (iv) **The Parents-Teachers Association of the Institution:** The association should be involved particularly the president, secretary, treasurer so as to carry them along. Also, for the association to contribute its quota to the planning of the facilities.
- (v) **Architects and Engineers:** These are technocrats or experts in their various fields who will give their expert advice towards the planning of the facilities. Other experts such as quantity surveyors, building technologists among others, should be involved.
- (vi) **Resource Persons:** These are the experts in their various professions who are engaged or invited to give their expert advice or suggestion(s) on the planning of the educational facilities. For instance, if a sick bay or clinic is part of the facilities, medical doctors can be invited as resource persons to give their professional advice in the planning. Also, if a library is among the facilities, professionally qualified librarians should also be invited as resource persons.
- (vii) **Teachers:** The teachers in the institution should be equally

represented in the planning for the facilities.

(viii) Students: They should also be equally represented in the planning particularly the students' union executive (the president and the secretary). This will allow the students' needs to be properly catered for.

(ix) All these set of people should be involved in the proper planning of the educational facilities.

3.2 Factors/Conditions that Guide Planning

The following factors should guide the planning of the educational facilities.

- Institutional objectives and philosophy
- Curriculum requirements
- Administrative and supervisory policies
- Total environment: This include the visual, thermal, acoustic,
- aesthetic environments
- Future needs
- Physical needs
- Cultural needs
- Social needs.

(i) Instructional Objectives and Philosophy: The objectives and philosophy of the institution should guide in the planning of the facilities for the institution. The mission and vision of the institution should also serve as guides for the planning of the facilities so that the facilities will be utilized effectively for the achievement of the goals and objectives of the institution.

(ii) Curriculum Requirements: The following items should be planned for in the provision of the facilities.

- **Courses to be offered:** These may be arts, science, social sciences and technology etc.
- **Curriculum Trend:** This implies the direction of the curriculum, if it is for open distance learning, or full time learning or continuing education or remedial education.
- **Presentational or Learning Pattern:** This connotes the way the learning will be presented; textual, electronic or on-line or face- face contact or combination of these.
- Presentational or Learning trends

- Teachers and learners' activities based on the subjects and their space requirements.
 - Number, age and grade level of students involved. For instance, facilities for the youngsters should differ from the adult students.
 - **Furniture:** Furniture facilities for children are not the same with that of the adult learners.
 - **Special Utilities and Services:** These include facilities for science laboratories, home economics laboratory, library, clinic etc.
 - **Administrative Requirements:** These relate to teachers, counsellor's office, and head of the institution office among others.
 - **Utilisation Plans:** This connotes the plans the institution is to be utilised for. For instance, will the students be day students, boarding students or distance learning students
- (iii) **Administrative and Supervisory Policies:** The policies in administration and the supervision of the institution should also be considered as guides in the planning of the facilities. For instance, the administrative blocks for the institution particularly for the head of the institution should be located at a conspicuous place with easy accessibility. At the gate of the institution, there should be security post or cubicle for the security officers to supervise the vehicular and human traffic flows.
- (iv) **Total Environment:** This includes: the visual, thermal, acoustic and aesthetic environments are discussed in module 2 of this course material. So, it is advisable for you to read module 2 for thorough comprehension of this concept.
- (v) **Future Needs:** The needs for the future of the institution in terms of the increase in the students' intakes or enrolments, introduction of the new courses, population of the work force both academic and non-academic among others, should be projected at least five years.
- (vi) **Physical Needs:** These include the provision of facilities for the specially challenged person. That is, people that are physically handicapped who are using wheel chairs. They should be properly catered for, for their easy movement to the class/lecture rooms, hostels and within the institution environment. Pedestrians and motor bicycle riders should also be catered for in the planning of facilities.
- (vii) **Cultural Needs:** These include the provision of facilities for the people's needs for worshipping like church, mosque and shrine (if the need be).

- (viii) **Social Needs:** These include facilities for social interaction/gathering such as building of hall, auditorium, and lecture theatre among others. Local regulations concerning buildings in terms of size of windows, doors, specified roof, standard plan designed for each locality should be considered in the planning for the facilities. Also, facilities for eateries viz, cafeterias, *bukatarias*, common rooms, photographic and recording studios among others, should be provided.

SELF-ASSESSMENT EXERCISE

1. Enumerate five people to be involved in the planning of facilities for any institution of learning.
2. Mention five factors to be considered in planning for educational facilities.

3.3 Administrative and Supportive Services Requirements

The following facilities should be provided for the administrative and supportive services viz:

- (i) **Safety and Security:** Provisions of facilities for fire fighting equipment such as fire extinguishers, and buckets, ambulance, use of burglary proof, fire fighters' vehicle among others.
- (ii) **Mechanical Systems:** These include the facilities for supply of electricity, solar energy, pipe borne water, sewage disposal system and so on.
- (iii) **Community Programmes:** Facilities for library, playgrounds, for the public uses such as entertainment, reception for marriages, and also inter institution competitions.
- (iv) **Landscaping:** This provides facilities for aesthetic environment. That is, the beautification of the environment. The clearing of the compound by either the hired labourers or students in cases of private/higher institutions or public schools respectively. In some cases, horticulturists can be employed to provide horticultural aesthetic appreciation to the environment.
- (v) **Sanitation and Sewage:** There should be facilities for toilets and sewage disposal both at public places and hall of residence. Water closet or/and pit latrine toilets, dustbins and movable or vehicular waste containers should be provided at every strategic places within the learning environment.
- (vi) **Utilities:** These include facilities for power/energy supply such as electricity, solar energy, petrol/diesel engines and telephone facilities.

- (vii) **Food Service:** Facilities for cafeterias, *bukatarias*, or corporate eateries such as Mr. Biggs and individual food vendors should be provided depending on the need level of the institutions (primary, secondary and tertiary).
- (viii) **Gymnasium:** This is found mostly in the tertiary institutions, e.g. Department of Human Kinetics and Health Education, University of Ibadan. It is for recreation and relaxation. Because a maxim states “that all works and no play make Jack a dull boy”. Though in the primary and secondary institutions this may not be possible but provisions can be made for indoor games such as ping-pong games, badminton, and basket ball, among others.
- (ix) **Assembly Areas:** These facilities include the halls, auditoriums, lecture theatres, mostly in the tertiary and some private and public primary and secondary schools. In most public primary and secondary in Nigeria, open spaces are used for assembly due to inadequate or lack of provision for the facilities cum financial constraints.
- (x) **Administrative Block for the Institution:** In the primary and secondary schools, head teachers and principal’s office respectively, and in the tertiary institution like university, vice chancellor’s office should be provided.
- (xi) **Instructional Media Centre:** Centre for design, production, storing and utilization of instructional media should be provided. In the tertiary institutions, the centre is christened centre for educational technology or instructional technology centre, or educational technology centre etc. While, in the primary and secondary institutions, the centre is also given different nomenclatures such as, reading corner, nature corner, educational resources centre etc.
- (xii) **Storage Area:** In the primary and secondary institutions, rooms and laboratories are used for storage, while in the tertiary institutions there are many storage areas, such as laboratories, libraries, archives, information and communication technology centre, educational technology centre etc.
- (xiii) **Custodian Services:** These include facilities for storing materials which need maximum security like examination scripts, question papers, monies etc. Such facilities should be strong rooms, cubicles for the security officers etc. should be provided.
- (xiv) **Parking Areas:** Parking spaces for both private and public vehicles should be provided for the workers, students and public.

By and large, after the decision for the factors had been made, there should be sketch plan after which a building programme will commence with site selection which will be the focus of attention.

3.4 Site Selection

This can be grouped into two viz:

- i. **Soil and Terrain Condition:** The nature of the soil should be considered. Well- drained soil and plain topography or terrain should be preferred to rocky or rugged terrain or swampy topography which may be very expensive to develop.
- ii. **Utilities:** Sources of energy such as electricity and solar energy, also, water supply and sewage disposal system should be provided. Recreational, vehicular, pedestrian facilities all should be considered for the site selection. In fact, care must be taken in siting the institution very close to highway, market place, high tension electric voltage areas and other areas which are highly prone to hazards.

4.0 CONCLUSION

The planning of facilities for any institution is of paramount importance, and it is also a herculean task for the planners. However, certain factors such as institutional objectives and philosophy, curriculum requirements, administrative and supervisory policies, total environment, among others, should be considered. Moreover, the site selection should also be put into consideration for the planning of the educational facilities.

5.0 SUMMARY

In this unit, you have learnt the following:

- Participants in facilities planning process
- Factors to be considered for the planning facilities.
- Site selection criteria.

More discussion can also take place during your tutorial session with your colleagues and facilitator(s).

6.0 TUTOR-MARKED ASSIGNMENT

1. State five facilities that should be provided for administrative and supportive services
2. Mention two major conditions for the site selection of any institution.

7.0 REFERENCES/FURTHER READING

CEFP (1998). *Guide for Planning Educational Facilities*. Ohio, USA.

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UNIT 3 DESIGN OF MEDIA CENTRE

CONTENTS

- 1.0 Introduction
- 2.0 Learning Outcomes
- 3.0 Main Content
 - 3.1 Definition of Media Centre (MC)
 - 3.2 Types of Media Centre
 - 3.3 Setting Up of Media Centre
 - 3.4 Functions of Media Centre
 - 3.5 Spatial Arrangement of Media Centre
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor-Marked Assignment
- 7.0 References/Further Reading

1.0 INTRODUCTION

In any teaching and learning environment, a Media Centre (MC) is an indispensable facility that should be properly and adequately provided, maintained and sustained by the authority concerned, so as to facilitate the rate of instructional process. Therefore, in this unit, the design and effective cum efficient ways of establishing a worthwhile media centre are discussed vividly and comprehensively.

You are therefore advised to read and digest the information supplied in the unit thoroughly.

2.0 LEARNING OUTCOMES

By end of this unit, you should be able to:

- define educational Media Centre (MC)
- describe different types of MCs
- explain the setting up of MC
- highlight the functions of MC
- discuss the spatial arrangement of MC.

3.0 MAIN CONTENT

3.1 Definition of Media Centre (MC)

In course **EDT 831**, you were taught the design, production, selection, functions, utilisation, taxonomy and improvisation educational media. Therefore, make sure you read through the course material again because it is a prerequisite to this course.

A Media Centre is a place, or an environment or educational resources centre where a wide variety of educational or instructional media or materials, media services and facilities are provided to facilitate, teaching and learning process and in fact, to enhance the achievement of the instructional objectives. Teachers and learners use these media services and facilities to foster, enrich, stimulate and enhance instructional activities. The centre encourages and provides an enabling environment for the users to acquire some fundamental skills and basic knowledge in designing, planning, producing and utilising various types of educational media. A well-equipped media centre with proper and adequate organisation and management will surely provide much more services and facilities than a conventional library.

Globally, this type of centre has different nomenclatures in different places viz: Learning Resources Centre (LRC), Comprehensive Library (CL), School Library (SL), Multimedia Centre (MC), Instructional Media Centre (IMC), Learning Centre (LC) and Media Centre (MC) particularly in the Anglo-Phone countries of the world (UNESCO, 1978). In Nigeria, the centre is also given different names in various places, such as, Centre for Educational Technology (CET), Educational Technology Centre (ETC), Learning Resources Centre (LRC). Others include, Instructional Media Centre (IMC), Teachers' Centre (TC), Educational Media Centre (EMC), Instructional Technology Centre (ITC) among others. Sometimes, the different names reflect the objectives behind the establishment of such centre and the various activities and services they provided the orientation and preferred nomenclatures by the establisher(s).

3.2 Types of Media Centre

Based on the objectives, curricular tasks, availability of human and non-human resources and the financial capability of the centre, the following media types are identified by Abimbade (1999):

- Centralised Resources Centre
 - Decentralised Resources Centre
 - Coordinated Resources Centre
- (i) **Centralised Resources Centre:** This type of centre functions as a sole-facility within the state or local government level. It shoulders the responsibility of the acquisition, inventory, catalogue and storage mostly within the State Ministry of Education in Nigeria and it is usually christened Educational Resources Centre (ERC).
- (ii) **Decentralised Resources Centre:** It is a centre established within a particular learning environment (a school). It serves the teachers, the students and also the people in the locality where it is established. Acquisition, catalogue and storage of educational media are its major responsibilities. This type of centre is mostly found in the primary and secondary institutions in the country (Nigeria). In some institutions it is named Learning Resources Centre, Nature Corner, Reading Centre or Library, etc.
- (iii) **Coordinated Resources Centre:** This centre functions as a system and it networks institutional resources centre within the vicinity or country at large. It makes provision for expensive equipment and materials that other smaller centres could not afford to procure, such as, computer hardware, power point projector, television set, etc. In Nigeria for instance, the former National Educational Technology Centre (NETC), Kaduna, was performing these functions before the centre metamorphosed into the National Open University of Nigeria (NOUN), a couple of years ago.

3.3 Functions of Media Centre

A typical media centre should perform the following two basic functions:

- (i) It makes provision for facilities, materials and services to enhance and facilitate the achievement of instructional objectives.
- (ii) It keeps the teachers-on-job abreast of the current trends in educational and technological development globally with the quality of services, facilities and materials provided. This makes it possible for the teachers-in-service to update their knowledge in information and communication technology.

The following specific roles should also be performed by a media centre.

- (i) It serves as a forum for servicing teachers to discuss pedagogical issues and challenges.
- (ii) It serves as a reference and study centre for both teachers and learners. Thus, adequate and current information and materials be provided by the centre for easy consultation by the users.
- (iii) It provides useful and meaningful advice to teachers and learners about the selection and utilisation of various instructional media.
- (iv) It organises conferences, workshops and seminars, for the training of in-service teachers on various aspects of pedagogical practices and issues.
- (v) It encourages and enhances curriculum development activities and also the designing, planning and production of instructional media.
- (vi) It organises microteaching session for trainers and trainees in pedagogy in developing new teaching skills and revitalising the acquired ones.
- (vii) It provides opportunities for training in the utilisation of computer and multimedia technology and in fact, accessibility to internet connectivity.

SELF-ASSESSMENT EXERCISE

1. What is a media centre?
2. Describe three types of Media Centre that are in existence in Nigeria.
3. State five functions of Media Centre?

3.4 Setting up a Media Centre

The following steps should be taken in setting up a media centre:

- (i) The aims and objectives of the media centre should be vividly stated.
- (ii) A feasibility study should be carried out based on the stated aims and objectives so as to identify the target population of the study, their preferred media, interests, sources of finance for maintaining and sustaining the centre.
- (iii) Approval and support should be solicited for from the authorities that are germane to the establishment of the centre. Also, awareness should be created among the administrators, community leaders, politicians, teachers and a host of other prospective users.

- (iv) Staff recruitment after the approval of the establishment of the centre. Staff such as director, the media specialist or educational technologist as key staff members should be initially recruited. Other staff members can be recruited later as the need arises.
- (v) A building should be set aside for the centre. The recruited director should present a proposal to the concerned authorities with a vivid idea of how the building for the centre will be organised and arranged.
- (vi) The centre should be equipped with instructional materials and equipment.

3.5 Spatial Arrangement of Media Centre

Media centre can be spatially arranged thus:

- **Space:** For cabins and cubicles for individual student and large group discussion. Also, for storing instructional media (prints and non-prints).
- Facilities for the storage and distribution of technical materials
- **Workshops:** For production of metal and wood work, electronic, graphics, audio recording room, preview of video DVD room and computer room with internet provision (cyber café).
- **Office Accommodation:** For the coordinator/head of the centre, teachers and technical staff.
- Toilets
- Room for the A.V. Technician(s) with benches.
- Language laboratory
- Microteaching laboratory (as recommended by National Commission for Colleges of Education in Nigeria).
- Tables, charts and shelves for staff use with drawing boards for graphics. Also, large cupboards for storing materials.

4.0 CONCLUSION

A media centre is of paramount importance in any teaching and learning environment because of the significant roles that it performs. However, the centre is given different nomenclature in different places based on the aims and objectives, philosophy and perspectives of the establisher(s). Therefore, the establishment of the centre if properly executed and effectively utilized, it will facilitate instructional process, thus enhancing the achievement of the objectives stated for the instruction.

5.0 SUMMARY

You have studied the following in this unit.

- Definition of media centre.
- Types of media centre
- Setting up of media centre
- Functions of media centre
- Spatial arrangement of media centre

6.0 TUTOR-MARKED ASSIGNMENT

1. Itemise the steps to be followed in setting up of a media centre.
2. Highlight the spatial arrangement of a media centre.

7.0 REFERENCES/FURTHER READING

- Abimbade, A. (1999). *Principles and Practice of Educational Technology*. Ibadan: International Publishers.
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UNIT 4 MANAGEMENT OF MEDIA CENTRE

CONTENTS

- 1.0 Introduction
- 2.0 Learning Outcomes
- 3.0 Main Content
 - 3.1 Materials for Media Centre
 - 3.2 Categories of Personnel for Media Centre
 - 3.3 Training of Personnel for Media Centre
 - 3.4 Funding Strategies for Media Centre
 - 3.5 Ways of Equipping Media Centre
 - 3.6 Challenges in Managing Media Centre in Nigeria.
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor-Marked Assignment
- 7.0 References/Further Reading

1.0 INTRODUCTION

Effective management of media centre offers one of the best possibilities and in fact, opportunities for developing and encouraging a systematic and an integrated utilisation of various instructional media to facilitate and enhance the achievement of instructional objectives. Also, it provides a good opportunity for a holistic approach for designing strategies and methods for the utilisation of instructional materials. Therefore, in this unit, you will be exposed to the ways by which media centre can be effectively and efficiently managed.

2.0 LEARNING OUTCOMES

By the end of this unit, you should be able to:

- describe the various materials for a media centre
- mention different categories of personnel for media centre
- discuss the training of personnel for media centre
- highlight strategies for funding media centre
- state the ways of equipping media centre
- enumerate the challenges in the management of media centre in Nigeria.

3.0 MAIN CONTENT

3.1 Materials for Media Centre

The following materials and equipment should be provided in the media centre in consonance with their different classifications and the objectives and functions for which the centre is established.

- **Equipment:** Multimedia projector for microteaching laboratory with all necessary materials and equipment, portable projection screens, appreciable number of functioning desktop/laptop/palmtop computer systems, laser jet printers, scanners and other peripherals, tools for the maintenance and repairing in the various workshops, should be provided.
- **Non-Projected Media viz:** Display boards, bulletin boards, maps, models,
- **mockups, puppets, robots etc.**
- **Photographic Studio:** Digital cameras with computers, desktop/laptop and printer(s), equipment for lighting etc.
- **Sound/Audio Recording Studio:** CD, DVD recorders, DVD players, multimedia system with sound card and high resolution colour display.
- **Graphic Studio:** Computers–desktop/laptop, palmtop, laser printer, computer software viz (CorelDraw/fire fox etc), scanners, spiral binding machines, lamination machines, cut out letters, mechanical lettering devices etc.
- **Television Studio:** Modern television sets, DVD players, recorders, video editing equipment, television monitors cables, lighting equipment etc.
- **E-library:** Computers-laptop, desktop, palmtop with internet connectivity linking other libraries globally. Relevant books on visual, audio and audio–visual materials, design, production, selection and utilisation.
- **Reprographic Studio:** Computers, laser jet printers, scanners, photocopying machines, spiral binding device, lamination machines etc.
- **E-learning Room:** With appreciable number of functioning computers with effective and reliable internet connectivity. Cybercafé should also be included.

3.2 Categories of Personnel for Media Centre

The following categories of personnel should be involved in the management of media centre.

- i. **Professional Media Specialists:** Specialist in educational technology with at least first degree. Lecturers, media librarian, education officers among others are within this category.
- ii. **Administration supportive staff:** In this category, the employees are to perform administrative functions in the management of media centre. They include, administrative officers, accountants, clerical officers, drivers, computer operators, security officers etc.
- iii. **Technical Staff:** Engineers, technologists, and technicians are in this group. They are specialists in engineering either from university or polytechnics, specialising in media design, installation, operation and maintenance.

3.3 Training of Personnel for Media Centre

Professional media specialists should have a formal training at the tertiary institution of learning, particularly in a university, with a Master's degree in Educational Technology. Some universities in Nigeria are now running programmes in educational technology at Master's and Doctoral levels.

The personnel in the **second category** i.e. administrative support staff can be trained in the universities, polytechnics/technical colleges and colleges of education. They should be trained locally in order to acquire skills in the adaptation and utilization of local materials for production.

The **third category** of personnel can be trained in the polytechnics and technical colleges, particularly the technicians while the engineers can be trained in the universities. The centre can also organise conferences, seminars and workshops for personnel to put them in the mainstream of the new development in their areas and to train them in the recent trends in information and communication technology.

SELF-ASSESSMENT EXERCISE

1. Describe five materials that should be provided in the media centre.
2. Mention three categories of personnel that should manage the media centre.
3. Explain the training strategies for the personnel in the media centre.

3.4 Funding Strategies for Media Centre

In funding a media centre, the following strategies can be adopted:

- i. **Fund from government:** Government (federal, state, local) can give or allocate funds to the centre for paying the staff salaries, organising workshops, conferences, seminars and for the procurement of instructional materials such as computer sets, multimedia, projectors and other expensive materials.
- ii. **Donation:** Corporate bodies, non-governmental organisations, well-to-do individuals among others, can donate money and materials to the centre.
- iii. **Loaning of Materials:** Instructional materials can be loaned out to schools, organisations etc to generate fund.
- iv. **Sales of Produced Instructional Materials:** To generate funds to the centre, produced instructional materials can be sold out to schools or individuals.
- v. **Organisation of Workshop:** Fund can be generated by the centre through the organization of workshops to train people, like educational policy makers, planners, teachers, and other interested educational stakeholders in the design, production and utilisation of instructional media.

3.5 Ways of Equipping Media Centre

Four major sources of equipping media centres are:

- i. **Direct Purchase:** The centre can be equipped with the direct procurement by the centre director or manager/head, as case may be with the fund allocated to the centre by the authorities concerned. The type of materials procured are usually manufactured by large industries, thus they are expensive media. Such media include computer hardware, television sets, multimedia projectors, digital photographic cameras, DVD players, etc. They are usually purchased in large quantities.
- ii. **Donation:** Sources of equipping media centre could be through appeals to the prospective donors such as corporate organizations like MTN, Airtel, Glo, Petroleum Tax Fund (PTF) Zinox Computer Company Ltd, among others and well-to-do individuals and non-governmental organisations in the society for donations. In fact, PTF and some of these network

providers mentioned above have been donating instructional media particularly computer sets and peripherals, also mobile handsets with Sims cards to institutions in Nigeria (primary, secondary and tertiary).

- iii. **Loan:** A media centre can be equipped through loaning or borrowing of the materials needed from another centre based on signed accord or agreement between the two parties involved. However, a register containing the term of accord can be kept to indicate such items like, name of the borrower, institution, date, condition of the materials to be borrowed or loaned out, date to be returned, signature of the loanee and the name and signature of the loaner (officer) that authorized the release of the materials.
- iv. **Improvisation:** Combined effort of the teacher and learners can be utilised in producing instructional materials with the use of locally available materials. Local artisans can also be engaged in the production of instructional media using the local materials that are readily available. Such media that can be produced are charts, models, boards (portable, movable, magnetic tempo, chalk, bulletin) etc.

These four principal sources discussed above can be employed or adopted in equipping the media centre.

3.6 Challenges and Prospects in the Management of Media Centre in Nigeria

The management of media centre in Nigeria is being confronted with the following setbacks.

- i. **Financial Constraints:** Media centre in Nigeria are inadequately and in fact, poorly funded by the authorities concerned (federal, state, local government) in the various institutions and ministries.
- ii. **Mismanagement of Fund:** Fund allocated to the centre by the government, sometimes is mismanaged, diverted or siphoned by the authorities concerned. Hence, this financial misappropriateness serves as a handicap to the proper and effective management of the centre.
- iii. **Insufficient Spatial Allocation:** Space for the establishment of media centre in most Nigerian institutions particularly tertiary institutions (universities) poses a challenge. In many universities in the country, adequate and enabling environment

is not provided for the proper establishment and effective management of the centre. For instance, in University of Ilorin, Obafemi Awolowo University, University of Lagos and in fact, almost all the colleges of education in Nigeria have a well established media centre, with roomy spaces while in some universities like University of Ibadan, the establishment of the centre is not at all encouraging due to inadequate space allocated.

- iv. **Inadequate and unqualified Personnel:** Most of the media centres in Nigeria are inadequately staffed and in some, they are staffed with unqualified personnel.
- v. **Inadequate and Poor Storage Facilities:** Storage facilities in most of the institutions and even ministries with media centres are not at all encouraging. The facilities are not sufficient and they are poorly maintained.
- vi. **Inadequate Facilities:** Such facilities like physical structure (buildings), instructional media (functioning computer sets, multimedia power point projector and other peripherals) studios (television, photographic) laboratories (Micro-teaching and language) are inadequate or even lacking in many institutions in Nigeria particularly the universities.
- vii. **Poor Management and Maintenance Culture:** In Nigeria generally, our maintenance culture is terrible. Many instructional media are not properly maintained and installed. For instance, most of the media, particularly, computers are installed in warm or hot environment in lieu of air conditioned environment. Thus, the durability and the life span of these media are in jeopardy. Moreover, most of the media in the centre are already obsolete and therefore, their spare parts are no more available even from their manufacturers. These media need to be updated, modernized and revitalised.
- viii. **Inadequate Power Supply:** In Nigeria, the power supply (electricity) is not at all encouraging. In fact, the supply of power particularly electricity is at the state of “comatose”. The supply is also epileptic and erratic in nature. Therefore, most of the projected media are not maximally utilised. Some are just for “show case” or even “window dressing” in the centre. Some have been spoilt or damaged due to sporadic power surge fluctuation.

However, despite all these limitations or challenges in the management of media centre in Nigeria, it is hoped that there is a promising and prosperous future for the management of media centres, with the

advent of information and communication technology (ICT) most especially with the adoption and utilisation of computer inter and intra connectivity in the country. In most centres in our institutions, particularly tertiary institutions, (universities, polytechnics and colleges of education) most obsolete media had been upgraded, modernised or totally replaced with recent ones in consonance with development in ICT.

Moreover, at present in the country, specialists in media technology or educational technology are now ICT utilising multimedia projector instead of Over Head Projector (OHP), slide projector or opaque projector which are now outdated as a result of advancement in ICT. Also, there are many specialists in educational or media technology being produced in our universities at first degree, master's degree and doctorate degree levels and many are still in the process. In fact, many universities in the country are now running programmes in educational technology at both undergraduate and post graduate levels like the University of Ilorin, at postgraduate level (master's and doctoral degrees) the University of Ibadan and Obafemi Awolowo University, Ile-Ife, among others. Most institutions had found alternative to the erratic and epileptic power supply by PHCN by the procurement of standby generators and the adoption of solar energy.

By and large, there are prospects of better management of media centres in Nigeria with the opportunities presented through internet connectivity which has turned the whole world into a "global village" can be easily accessed on best practices from other parts of the world.

4.0 CONCLUSION

For effective and efficient management of media centres in Nigeria, there should be adequate funding, proper management of fund allocated, adequate staffing, good storage facilities, worthwhile maintenance culture, adequate and constant power supply, among others. With all the aforementioned put in place, it is hoped that the future of management of media centres in Nigeria is bright.

5.0 SUMMARY

In this unit, you have studied the following:

- Materials for media centre

- Categories of personnel for media centre
- Training of personnel for media centre
- Funding strategies for media centre
- Ways of equipping media centre
- Challenges and prospects in the management of media centre in Nigeria.

6.0 TUTOR-MARKED ASSIGNMENT

1. Explain the sources of funding of Media Centres in Nigeria
2. Analyse challenges that are confronting Media Centres in Nigeria.

7.0 REFERENCES/ FURTHER READING

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UNIT 5 FACILITIES FOR M-LEARNING ADOPTION AND UTILISATION IN THE INSTRUCTIONAL PROCESS

CONTENTS

- 1.0 Introduction
- 2.0 Learning Outcomes
- 3.0 Main Content:
 - 3.1 Meaning and Concept of M-learning
 - 3.2 Global Developmental History of M-learning
 - 3.3 The Growth of M-learning.
 - 3.4 Instructional Areas of Possibilities and Realities
 - 3.5 Challenges of the Adoption and Utilisation of M-learning in the Instructional Process
 - 3.6 Supportive Technologies
 - 3.7 Limitations of M-learning
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor-Marked Assignment
- 7.0 References/Further Reading

1.0 INTRODUCTION

Just like **electronic learning** which is christened “**e-learning**” that is, learning through computer internet connectivity which is gradually putting the conventional classroom instruction into oblivion, **mobile learning** is named “**m-learning**”. It is learning through the mobile devices particularly handsets, and is also now in vogue globally. E-learning and m-learning are both offshoots of network provision or internet connectivity which has turned the whole world into a “global village”. Both have been effectively adopted and utilised in the instructional process throughout the world. Meanwhile, in this unit, you will be exposed to mobile learning and its adoption and utilisation in the teaching learning process across the globe.

2.0 LEARNING OUTCOMES

By the end of this unit, you should be able to:

- define m-learning
- describe the global history in the development of m-learning
- explain the growth and scope of m-learning
- highlight the supportive technologies of m-learning

- discuss the challenges and prospects of m-learning in Nigeria.

3.0 MAIN CONTENT

3.1 Meaning and Concept of M-learning

M-learning is defined as “Handheld technologies, together with wireless and mobile phone networks, to facilitate, support, enhance and extend the reach of teaching and learning” (Schofield, West, & Taylor (2011). It is also defined by Masrek and Samadi (2017) as acquisition of any knowledge and skill through the use of mobile technology, anywhere, anytime that results in an alteration in behavior. M-learning simply means mobile learning which is abbreviated to “m-learning” just like electronic learning also abbreviated to “e-learning”. M-learning has different meanings and concepts in different communities. These meanings and concepts are:

- with a portable technologies where the focus is on the technology, which could be in a fixed location such as a classroom
- in a mobile society with a focus on how the society and her institution can accommodate and support the learning of an increasingly mobile population such as nomads, fishermen etc.

Across contexts where the focus is on the mobility of the learners interacting with portable or fixed technology that occurs across locations or that takes advantage of learning opportunities offered by portable technologies (Bob, 2006). This seems to be universally acceptable definition of m-learning

However, m-learning is related to e-learning and distance education, but its focus on learning contexts and learning with mobiles, makes it distinct from the e-learning and distance education (Attewell, 2005). According to Masrek and Samadi (2017), M-learning is also considered as truly promoting learner-centred learning because of the following features:

- (i) Portability-the small size and weight of mobile devices means they can be carried everywhere and help learning occur at anywhere and anytime,
- (ii) Connectivity-providing learners with connections to other learning such as through other people, devices or networks,
- (iii) Interactivity-mobile devices are potential tools for enhancing a cooperative learning environment,

- (iv) Context sensitivity-mobile devices enable learning to take place which can make greater use of a person's immediate context and surroundings,
- (v) Lifelong-mobile content consumption is continuous, there is no beginning, middle or end and
- (vi) Individuality-learning can be customised and based on previous learning experiences.

3.2 Global Developmental History of M-learning.

Globally, a couple of decades ago, technology became not just another contribution of service to humanity but an integral part of everyday life. With all the wonders of science and technology springing up daily, their reliability raised questions in minds of people across the globe. Meanwhile, mobile phone has wriggled its way to the hearts and lives of millions of people on the globe. In fact, throughout the world, the total number of mobile phone subscribers was estimated to be 2.14 billion (Nausmith, Lonsdale and Sharples, 2005). As at 2006, about 80% of the world population had mobile phone coverage. By 2010, it is expected that the figure will increased to 90% (Bob, 2006).

However, the field of mobile learning grew rapidly in the 1990s and with the US Palm Education Pioneers project and the most learning cum M-learning project funded by the European Commission. In fact, MOBI-learning was the first m-learning project that was supported by the European Commission under the Education Area of the Information Society (IST). In October 2001, the 3-year span European project began under the UK's.

Learning Skills Development Agency with partners in Italy, Sweden and the UK. It was a pragmatic response to three pressing socio-educational problems that were rampant among the young Europeans in the age range 16-24; that is, poor literacy cum numeracy, non-participation in the conventional education and possible social exclusion. Some of these target audiences may be unemployed or underemployed and may lack access to computer; many do however regularly use a mobile phone. Moreover, m-learning utilises inexpensive portable technologies that were already owned by, or likely to be readily accessible for the majority of young adults. MOBI-learning was a worldwide European-led research and development project exploring context-sensitive approaches to informal, problem-based and work place learning by using key advances in mobile technologies. With this research project, an m-learning architecture was developed to support creation, brokerage, delivery and tracking of learning and information contents. In fact, field-trials covered

“blended learning” as part of formal courses, “adventurous location” – dependent learning (during visits to museums) and “learning to interpret information sources and advice” such as acquiring medical information for daily needs.

To sum up, at present in Nigeria, m-learning is not yet embraced. Therefore it is optimistic that it will be adopted and utilised effectively in the teaching and learning process in the country so as to address some of the challenges confronting the distance learning students and those of the mobile population such as the nomads, fishermen.

3.3 The Growth of M-learning

Mobile phones have gone from being rare and expensive process of equipment used primarily by the business elites to pervasive low cost personal item in recent years. In fact, in many countries, mobile phones outnumber land-line phones, while many children and young adults now have them in their possession. For instance, in the developing countries like Nigeria, where the little existing fixed land-line infrastructure is marginalised, mobile phone especially the Global System Mobile Communication (GSM) is now a household item. At present, Africa has the largest growth rate of GSM subscribers in the globe. African markets are expanding nearly twice as fast as Asian markets (Naismth *et al*, 2005). The availability of prepared or pay as you go services, where the subscriber does not have to commit to a long-term contract, has helped fuel this growth in a monumental scale, not only in Africa, but on other continents as well (Naismth, *et al*, 2005).

In the past decade, m-learning has grown from a minor research interest to a set of significant projects in schools, workplace, cities and rural areas throughout the globe. More so, the technology seems to be well placed to distribute multimedia content opportunities for interaction. In fact, it is the wonder that the educators see as a powerful learning tool maturing before their eyes, while students are tapping into the many functions it offers in the schools (Devinder *et al*, 2007).

SELF-ASSESSMENT EXERCISE

1. What is m-learning?
2. Analysis ways through which m-learning promotes learner-centred learning.

3.4 Instructional Possibilities and Realities with M-learning

An educational school of thought believes in tapping every available resource including mobile technology, so far it will bring the desired result. Therefore, the possibilities and realities of using mobile phones in instruction have been put into practice by the educators in some developed countries, thereby incorporating it into the everyday instructional activities. For example, in the UK, studies revealed that around seven million young adults did not have basic skills in literacy and numeracy as they were unable to look up the word “plumber” in the yellow pages, yet they are proficient in the use of mobile phone facilities – the intricacies notwithstanding (Attewell, 2005). It is therefore, optimistic and realistic that to become educated via m-learning is an available option, as the mobile phone is the one device that people of this ICT era have in common. Meanwhile, in the University of Bradford, UK, academic staff have been supported financially for a two-year project to encourage young people to take up science and technological related subjects through mobile phones and computer games. This project is aimed at developing a set of educational games to teach science based subjects using mobile devices, since science subjects are perceived as “hard subject”, they need to find ways to explain these difficult concepts through digital media (Bob, 2006).

Moreover, studies have shown the possibilities and realities for learning through mobile phones with its existing features viz:

- **Short text message (STM):** The following instructions can be done through STM: quizzes, games, tests and tests preparation, opinion polling, classroom discussion, tutoring and extensive data for analysis and response.
- **Voice Mail:** Language lessons (e.g. in English and French Languages) using mobile flash cards, dictionary and phrase books, software guided tours, examinations, suggests cell-phone delivered lectures with feedback facilities.
- **Internet Browse:** Basic online reference tools search engines.
- **Global Positioning Systems:** Fieldtrips multiplayer on search games.
- **Graphical Displays:** Literature, instructional texts and animations.
- **Down loadable programmes:** Tools for collaboration, teaching programmes, fax senders, programming languages, access to other devices.

- **Video Clips:** TV journalism creative movie-making, suggests behaviour modelling clips.
- **Photography:** Data collection and documentation, visual journalism, creative writing stimulus (Sharples, 2007).

Furthermore, the principal benefit of mobile phones is the portability which enables them to be utilised for instructional event outside the classroom (Egunjobi and Ibode, 2005).

In conclusion, the utilisation of mobile phone in the instructional process particularly in developing countries like Nigeria is yet to be explored. But it is hoped that in a couple of years to come, this “mythical tool” will metamorphose into realistic instructional strategy just like its predecessor that is, e-learning, once it works in some parts of the world, it will latter become a global instructional tool even in Nigeria.

3.5 Challenges of the Adoption and Utilisation of M-learning in the Instructional Process

The challenges in the adoption and utilisation of m-learning in the instructional process are in two folds namely:

- Technical challenges
- Social and educational challenges

Technical Challenges are

(i) **Network Connectivity:** There are bottlenecks in the network connectivity particularly in the developing countries like Nigeria, where there are several network providers such as Airtel , MTN, Globacom, Starcom, Multilinks, Etisalat, among others. With these various network providers, connectivity among the networks for the subscribers constitute a setback. In fact, carrying about several sim cards of those various network providers is another setback for the subscribers or network users coupled with unreliable and erratic network provision with these different network providers. The exorbitant charges by the various network providers are also a great problem for the customers.

Battery Life: The battery life span in the mobile handsets is short. Thus, battery needs constant and regular recharging for maintenance and sustenance. However, this maybe difficult in the area in which the power supply is epileptic and even more so, if the mobile phone users could not afford to find alternative power supply like generator or solar energy.

Interaction with Small Devices: Mobile phone handsets are very small, hence, using them for instruction may be a little but difficult in handling and operating for the little children and aged adults.

Displaying Useful Content in Small Screen: Instructional content with large graphical and diagrammatical illustrations may be difficult to display in the mobile phones small screens.

(ii) Social and Educational Challenges

These are:

Developing appropriate theories of learning for the mobile learning and mobile age.

- Assessment of learning outside the classroom.
- How to support learning across many contexts.
- Design of technology to support a lifetime of learning.

The intrusion of formal education into daily life. That is, protecting the privacy of learners from being continually monitored and assessed through their mobile devices.

3.6 Supportive Technologies

To find solutions to the challenges discussed in 3.5, the following personal technologies can support mobile learning:

- Mobile phone, camera phone and smartphone
- Tablet PC
- Personal Digital Assistant in the classroom and outdoors.
- Graphing calculation
- Handheld Voting System.
- Sony PSP
- Learning Mobile Author (LMA)
- UMPC
- Handheld audio and multimedia guides in museums and galleries.
- Mobile Delivery and Tracking System (MDTS)
- Personal Audio Player e.g. listening to audio recording of lectures (Sharple, 2007).

3.7 Limitations of M-learning

Though, mobile phones are blessings to the users and at the same time they are “curses” or have negative aspects. These will be considered from two perspectives viz:

Economic Factors: These include the propensity to procure, maintain and sustain the mobile phone by the users. In fact, mobile phone have become a necessity and no more a luxury for people globally, therefore, it may be difficult for the students particularly the young ones who are still dependants to maintain and sustain the utilisation of the phone for instructional process. This may therefore increase the rate of theft of handsets in the schools and the society at large.

Examination Malpractice: The use of mobile phones has contributed negatively to the examination malpractices in the institutions of learning globally. For instance, in Nigeria, candidates are using their cell phones to cheat during examinations such as Universities Matriculation Examination (UME), conducted by Joint Admission and Matriculation Board (JAMB), Secondary School Certificate Examinations (SSSCE) conducted by West African Examination Council (WAEC) and National Examinations Council (NECO) among others, through text messages. This is not peculiar to Nigeria alone, it happens in other parts of the world like the UK, US, Germany etc.

Threat: Some people use mobile phones to threaten other people through the sending of messages using voice mail or/ and short message service.

Pornographic Images: Some people use their cell phones for viewing indecent or obnoxious photographs or pictures particularly the youths thus inducing or motivating them to involve in scandalous activities such as rape and other forms of immoral dealing and social vices.

Dupe: Some people use their mobile phones to dupe the others by asking them to send recharge cards or put certain amount of money somewhere to claim “false prize” that they have won through a certain promotion by any of the network providers.

However, those limitations can be prevented, minimized or even eradicated if proper measures are put in place through effective monitoring during the examination and proper control by the National Communication Commission (NCC) with the assistance of

the various network providers in the country.

4.0 CONCLUSION

Throughout the world, mobile phone has become an household item that all and sundry have access to. Meanwhile, it has been found useful in all human endeavours in which education cannot be an exception. However, its adoption and utilisation in the educational system has not been maximally and effectively utilised particularly in the developing countries like Nigeria, unlike the developed countries such as the UK, USA among others where they have utilised it to facilitate and enhance instructional process. It is hoped that, the developing countries like Nigeria will also borrow a leaf from those countries that have utilised the m-learning effectively and meaningfully in their educational systems to do similar thing in her educational system.

5.0 SUMMARY

In this unit, you have learnt the following:

- Meaning and concepts of m-learning.
- Global and developmental history of m-learning.
- Growth and supportive technologies of m-learning,
- Challenges in the adoption and utilisation of m-learning in the instructional process.
- Limitations and prospects of m-learning.

It is therefore expected, that you will create interest in researching into the adoption and utilisation of m-learning in the educational system in Nigeria, because it is a recent area for study or research.

6.0 TUTOR-MARKED ASSIGNMENT

1. Highlight five supportive technologies for m-learning.
2. Mention five limitations of m-learning utilisation in the instructional process.

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ANSWERS TO SELF-ASSESSMENT EXERCISE IN UNIT 1

1. Five factors to be considered for aesthetic environment are: (i) colour (ii) proportion (iii) space and Fluidity (iv) Harmony of colours and (v) General Appearance

ANSWERS TO SELF-ASSESSMENT EXERCISE IN UNIT 2

Question 1

Five people to be involved in the planning of facilities for any institution of learning are: (a) Administrators (b) community members (c) architects and engineers (d) resource person and (e) teachers

Question 2

Five factors to be considered in planning for educational facilities are: (a) curriculum requirement (b) total environment (c) physical needs (d) future needs and (e) social needs

ANSWERS TO SELF-ASSESSMENT EXERCISE IN UNIT 3

1. A media centre is a place or an environment or educational resources centre where a wide variety of educational or instructional media or materials, media services and facilities are provided.
2. The three types of MC that are in existence in Nigeria are: (a) centralised resources centre (b) decentralized resources centre (c) coordinated resources centre
 - (a) Centralised Resources Centre: This is type of centre functions as a sole facility within the state or local government level.
 - (b) Decentralised Centre is a centre established within a particular learning environment (a school). It serves the teachers, the students and also the people in the locality where it.
 - (c) Coordinated Resources centre: This centre functions as a system and it networks institutional resources centre with the vicinity or country at large.
3. Five functions of Media centre are:
 - (a) It makes provision for facilities, materials and services to enhance and facilitate the achievement of instructional objectives.
 - (b) It keeps the teacher-on-job abreast of the current trends in educational and technological development.
 - (c) It serves as a reference and study centre for both teachers and learners.
 - (d) It serves as a forum for servicing teachers to discuss pedagogical issues and challenges.
 - (e) It provides useful and meaningful advice to teachers and learners.

ANSWERS TO TUTOR-MARKED ASSIGNMENT IN UNIT 3

1. The steps to be followed in setting up of a media centres are:
 - a. The aims and objectives of the media centre should be vividly stated
 - b. A feasibility study should be carried out based on the stated aims and objectives
 - c. Approval and support should be solicited for from the authorities that are germane to the establishment of the centre.
 - d. Staff recruitment after the approval of the establishment of the centre.
 - e. A building should be set aside for the centre.
 - f. The centre should be equipped with instructional materials and equipment.
2. The spatial arrangement of a media centre are:
 1. Space
 2. Workshops
 3. Office accommodation

ANSWERS TO SELF-ASSESSMENT EXERCISE IN UNIT 4

1. Five materials that should be provided in the media centre are:
 - a. Equipment: multimedia projector for micro-teaching laboratory with all necessary materials and equipment
 - b. Non-projected media viz: Display boards, bulletin boards, maps, models etc.
 - c. Graphic studio: computer desktop/laptop, palmtop, computer software etc.
 - d. Sound/Audio Recording Studio: CD, DVD recorders, DVD players etc.
 - e. Photographic studio: Digital cameras with software
2. The three categories of personnel that should manage the media centre are:
 - a. Professional media specialists
 - b. Administration supportive staff and
 - c. Technical staff
3. The training strategies for the personnel in the media centre is that professional media specialists should be in a formal setting, training at the tertiary institution of learning, particularly in a university with a master degree in educational technology.

The second category i.e. administrative support staff can be trained in the university, polytechnics/technical, colleges, and colleges of education. The third category of personnel can be trained in the polytechnics and technical colleges.

ANSWERS TO TUTOR-MARKED ASSIGNMENT IN UNIT 4

1. Sources of funding of Media Centres in Nigeria
 - a. Direct Purchase
 - b. Donation
 - c. Improvisation
 - d. Loan
 - Direct Purchase: The centre can be equipped with the direct procurement by the centre direct or manager head.
 - Donation: Sources of equipping media centre could be through appeals to the prospective donors such as corporate organization.
 - Improvisation: Combined effort of teacher and learners can be utilised in producing instructional materials with the use of locally available materials.
 - Loan: a media centre can be equipped through loaning or borrowing of the materials needed.
2. Media Centres in Nigeria are confronted with the following challenges:
 - (i) Financial constraints
 - (ii) Mismanagement of fund
 - (iii) Insufficient spatial allocation
 - (iv) Inadequate power supply
 - (v) Inadequate and unqualified personnel
 - (vi) Inadequate and poor storage facilities
 - (vii) Poor management and maintenance culture
 - (viii) Insufficient spatial allocation.

ANSWERS TO SELF-ASSESSMENT EXERCISE IN UNIT 5

1. M-learning is defined as “Handheld technologies, together with wireless and mobile phone networks, to facilitate, support, enhance and extend the reach of teaching and learning” (Schofield, West, & Taylor (2011). M-learning simply means mobile learning which is abbreviated to “m-learning” just like electronic learning also abbreviated to “e-learning”.
2. Ways through which m-learning promotes learner-centred

learning are:

- (i) Portability-the small size and weight of mobile devices means they can be carried everywhere and help learning occur at anywhere and anytime,
- (ii) Connectivity-providing learners with connections to other learning such as through other people, devices or networks,
- (iii) Interactivity-mobile devices are potential tools for enhancing a cooperative learning environment,
- (iv) Context sensitivity-mobile devices enable learning to take place which can make greater use of a person's immediate context and surroundings
- (v) Lifelong-mobile content consumption is continuous, there is no beginning, middle or end and
- (vi) Individuality-learning can be customised and based on previous learning experiences.

ANSWERS TO TUTOR-MARKED ASSIGNMENT IN UNIT 5

1. The following are supportive technologies for mobile learning:
 - Mobile phone, camera phone and smartphone
 - Tablet PC
 - Personal Digital Assistant in the classroom and outdoors.
 - Graphing calculation
 - Handheld Voting System.
 - Sony PSP
 - Learning Mobile Author (LMA)
 - UMPC
 - Handheld audio and multimedia guides in museums and galleries.
 - Mobile Delivery and Tracking System (MDTS)
 - Personal Audio Player e.g. listening to audio recording of.
2. Below are the limitations of m-learning utilisation in the instructional process:
 - Economic factor
 - Examination malpractice
 - Threat
 - Pornographic images
 - Dupe

MODULE 3 MICROTEACHING FACILITIES

Unit 1	Definition, Concept and Process of Microteaching
Unit 2	History of Microteaching
Unit 3	Microteaching: Teaching Skills Part One
Unit 4	Microteaching: Teaching Skills Part Two
Unit 5	Microteaching: Teaching Skills Part Three

UNIT 1 DEFINITION, CONCEPT AND PROCESS OF MICROTEACHING

CONTENTS

1.0	Introduction
2.0	Learning Outcomes
3.0	Main Content
3.1	Definition of Microteaching
3.2	The Concept of Microteaching
3.3	The Process of Microteaching
4.0	Conclusion
5.0	Summary
6.0	Tutor-Marked Assignment
7.0	References/Further Reading

1.0 INTRODUCTION

In any recognised profession, certain skills are required to be acquired and utilised in practising the profession. Therefore, teaching as a profession is not an exception. Meanwhile, microteaching in the teaching profession exposes trainees in pedagogy to the essential skills that a trained teacher should be acquired and put into use in classroom situation for achieving meaningful and effective instructional process.

In this unit therefore, you will be familiarised with the definition, concept and process of microteaching.

2.0 LEARNING OUTCOMES

By the end of this unit, you should be able to:

- define microteaching
- explain the concept of microteaching
- discuss the process of microteaching.

3.0 MAIN CONTENT

3.1 Definition of Microteaching

Microteaching has different definitions based on the individual's perspective. For instance, to McKnight (2003) microteaching is a laboratory training procedure geared towards simplification of the complexities of teaching learning process. He explained further that, it is also a teaching in miniature, that is, a teaching scaled down in terms of class size, time, task or content and teaching skills. From another perspective, Brown (1975) defined microteaching as "contrived but nevertheless real teaching". It is a scaled down sample of actual teaching which mostly lasts for ten to thirty minutes and involves four to ten students (Ohuche and Izuah, 2002). They opined further that, microteaching session resemble a lesson but is much complex and shorter than a typical classroom lesson. In fact, a microteaching session simulates a regular classroom instructional period in every way except that both the time and the number of students are infinitesimal.

Microteaching concentrates on specific teaching under controlled conditions. Microteaching is scaled down sample of teaching. Just as a driver will not give his vehicle's key to a learner on a highway where there is continuous flow of traffic, so also a teacher trainee should not be exposed to a real situation even in the beginning. He should teach in a less risky situation where mistakes may be made without damage to pupils and to him. The complex act of teaching should be broken down into simple components making the task more manageable. Only one particular skill is attempted and developed during micro-teaching session. How to teach is considered more important than what to teach.

3.2 The Concept of Microteaching

Conceptually, microteaching prepares trainees in pedagogy (students-teachers in training) for the main teaching practice. Therefore, it should be established that a trainee in pedagogy works with a small group of real students. Though, a situation where it becomes difficult to provide actual students, their course mates (other trainees in pedagogy) play the roles of the real students. The adoption of this strategy is referred to as "peer-teaching". However, the adoption of this strategy (peer-teaching) witnessed many criticisms. The principal one among these criticisms is that, the other trainees in pedagogy used to replace the "real students" are matured more than the latter; therefore, they may over-react, thereby making the normal behaviours of the real students a mockery of the whole

situation during the microteaching session. Hence, at the end of the microteaching session, what might have been a rewarding exercise for the student teachers' may be accompanied with verbal battle or hot argument between them and the supervisor (lecturer in charge of the microteaching) who is supposed to monitor the exercise and give meaningful, constructive, pedagogical and professional comments and suggestions as feedback on the exercise to the trainees in pedagogy (student teachers).

However, peer-teaching has come to stay as the main microteaching strategy because, even when the college or university training the students for the pedagogical practices has a demonstration school, it will be very difficult to make use of the students, hence, the school programmes may be put into jeopardy. This calls for the lecturer supervising the exercise to be vigilant, observant and cautious so as to curb the excessiveness in the behaviours of the peer-group students in order to make the whole exercise effective and rewarding.

3.3 The Process of Microteaching

Though, according to Romizowski (1988) there are six steps to be followed in the process of microteaching, however, these had been classified into three major phases viz: modelling, practice and feedback (McKnight, 2003).

Phase I: Modelling: This is in three stages. **First stage;** the trainees in pedagogy observe a model of teaching episode where certain skills are demonstrated. **Second stage,** the trainees shape their behaviours after that of the modelled ones observed. **Third stage,** the trainees receive feedback on their performance. From the above, modelling is akin to watching of a live, written, audiotape, videotaped or filmed teaching episode which provides a short but clear example of a specific teaching skill to be acquired.

In general, there are different types of models that can be adopted in microteaching. However, three of these models are commonly utilized by the trainers in pedagogy. They include:

- (i) **Perceptual Model** (Filmed or videotaped teaching segments)
- (ii) **Symbolic Model** (Written transcripts of a teaching episode or written descriptions of a skills application)
- (iii) **Audio Model** (Audio taped teaching sequences.)

Meanwhile, it is advisable to adopt the **eclectic approach** to the modelling, that is, the combination of the perceptual and

symbolic models so as to achieve maximum efficiency and effectiveness in the microteaching exercise.

Phase II: Practice: A maxim states that “practice makes perfection”. Therefore, the trainees in pedagogy should put into practice the model of the skill(s) observed and acquired. The rehearsal should therefore take several times for proper and effective acquisition of the skills/practised.

Phase III: Feedback: The built-in-feedback mechanism in microteaching acquaints the trainees in pedagogy with the result of their performance in the microteaching exercise. This will enable them to evaluate themselves for improvement in their teaching skills acquisition.

3.4 Model Presentation

To achieve the desired positive effects, Adedapo (2018) stated that the following should be strictly adhered to:

- (i) A particular skill is defined to student’s teacher in terms of specific teaching behaviour and the objectives which such behaviour aims at teaching.
- (ii) The teacher educator can be given a demonstration lesson where the particular skill is employed. Videotape or a film based on the use of the specific skill, if available, can also be viewed. Or the teacher educator can at least present a prepared ‘episode’ so as to serve as a model for the trainees.
- (iii) The student’s teacher prepares a lesson plan based on the pre-decided model on a suitable topic relating to the particular skills which he proposes. More than the subject-matter, the technique of the behavioral component involved in that skill is considered important in micro-teaching, this is called the plan session.
- (iv) The student’s teacher teaches the lesson to a small group of pupils, preferably of peer group in a simulated condition. The college’s supervisor or a peer can observe the lesson given by the trainees and note down their observations in a specially developed proforma. The lesson may be videotaped if facilities exist.
- (v) Feedback is provided immediately to the student teacher by audiotape or videotape recorder. The student observes and analyses his lesson with the help of the supervisor. In the absence of the videotape or audiotape, peers who participated in the lesson as learners, peer observers, the college supervisor can provide the necessary feedback. The observation schedule maintained by the college supervisor and the feedback session. The tallies made in the reinforcement comments about instances of effective use of the skill and also situations where the skill

could have been more effectively made use of. This session is sometimes called 'critique session'.

- (vi) In the light of the feedback and supervisor's comments, the student teacher re-plans or restructures the same lesson or a different lesson in order to use the skill more effectively.
- (vii) The revised lesson is re-taught to a different but comparable group of pupils.
- (viii) The lesson is again observed or videotaped or audio-taped and observations are noted in the proformas as was done earlier in the teach session. Feedback is again provided on the reteach lesson. This step is called the re-feedback session.
- (ix) The plan, teach, feedback, re-plan, reteach and re-feedback sessions will constitute a single micro-teaching cycle. This cycle may be repeated till adequate level of skill acquisition takes place.

SELF-ASSESSMENT EXERCISE

1. Define microteaching.
2. Mention the three major phases in the microteaching process.

4.0 CONCLUSION

Microteaching is an indispensable course for trainees in pedagogy because, it exposes them to the skills that they need to observe and acquire for the herculean tasks head in the pedagogical practices.

5.0 SUMMARY

The discussion in this unit has been:

- The definition of microteaching
- The concept of microteaching
- The process of microteaching

6.0 TUTOR-MARKED ASSIGNMENT

"Microteaching is procedural in nature". Explain.

7.0 REFERENCES/FURTHER READING

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UNIT 2 HISTORY OF MICROTEACHING

CONTENTS

- 1.0 Introduction
- 2.0 Learning Outcomes
- 3.0 Main Content
 - 3.1 Global History of Microteaching
 - 3.2 History of Microteaching in Nigeria
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor-Marked Assignment
- 7.0 Reference/Further Reading

1.0 INTRODUCTION

Historically, any human endeavour could be traced to its origin. Thus, microteaching has its genesis, present stage and prospect or future which is therefore, the focus of this unit both from global and local perspectives.

2.0 LEARNING OUTCOMES

By the end of this unit, you should be able to:

- explain the global history of microteaching
- discuss the history of microteaching in Nigeria.

3.0 MAIN CONTENT

3.1 Global History of Microteaching

Globally, the genesis of microteaching could be traced to the evolution of the video technology in Germany. Meanwhile, little did the inventors of the tape recorder, think of the instructional implication and its utilisation in the pedagogical training of teachers until the globally documented efforts of Keith Acheson a doctoral student and Drs. N.B. Robert and W.A. Dwight of the Stanford University in 1961. However, the unflinching support bestowed on Allen and his team by the Ford Foundation boosted the morale of the team thus the team worked copiously on microteaching which was initially christened “demonstration teaching”. A couple of years later, microteaching was recognised and even acclaimed as an effective and efficient training technique in the training of teachers most

especially for pre-service preparation. For instance, in the American Teachers' Institutions in the 1970s, microteaching had been given acceptability and keen implementation.

In the 1970s cum later part of 1980s, microteaching spread like wide fire to countries like the United Kingdom, Malaysia, Australia and the archipelagoes of the Philippines. Furthermore, in the 1990s, it was universally accepted as an indispensable strategy in the training of trainees in pedagogy. In fact, it is also tremendously useful to the practising teachers who wanted to equip themselves in the up-to-date pedagogical practices in consonance with the information and communication technology development.

3.2 History of Microteaching in Nigeria

In the 1970s in Nigeria, microteaching was incorporated into the college programmes of Alvan Ikoku College of Education Owerri, with the assistance of the UNESCO grants given to the college.

Meanwhile, since the Alvan Ikoku College experience, most of the Teacher Training Colleges in the country adopted and adapted the new innovation (microteaching) in the preparation and training of the student-teachers in their various colleges particular in the Nigerian Colleges of Education. While in the Teachers' Grade Two Colleges it was still given the nomenclature of "teaching demonstration" in the 1970s up till early 1980s.

Moreover, in the 1980s, some scholars in the universities in Nigeria such as the University of Ibadan, Obafemi Awolowo University and the University of Ilorin carried out researches to examine the efficacy of microteaching on the student-teachers' performance in teaching practice.

The findings encouraged some of the universities in the country to adopt microteaching as one of the strategies in the preparation and training of their student-teachers in the faculties of education of these universities.

In the early 1990s, the National Commission for Colleges of Education (NCCE) in Nigeria made microteaching mandatory as part of accreditation requirements that must be properly put in place under educational technology centre in the colleges of education before any of their courses can be approved. Therefore, this mandatory condition brought microteaching to limelight most especially in the colleges of education. The federal government also gave financial assistance to the colleges for the establishment of microteaching laboratories within the educational technology centres. Since then,

microteaching has become one of the compulsory courses for the student-teachers in the colleges of education in the country.

By and large, it is optimistic that the Nigerian universities, particularly in the faculties of education through the recommendation of National Universities Commission (NUC), will incorporate microteaching as one of the compulsory courses to be offered for the training of student-teachers. Meanwhile, some universities had already incorporated microteaching as a compulsory course to be offered for the training of student-teachers e.g. Tai Solarin University of Education, Ijebu Ode and the University of Ilorin are good examples.

SELF ASSESSMENT EXERCISE

Explain concisely the global history of microteaching.

4.0 CONCLUSION

Globally, the birth of microteaching could be traced to the evolution of video technology in Germany, while in Nigeria, microteaching was first practised at Alvan Ikoku College of Education Owerri, in the 1990s. In Nigeria at present, all colleges of education have incorporated it into their programmes through the National Commission for Colleges of Education's recommendations. However, only a few universities have done so. Therefore, it is hoped that the NUC set the same condition for the universities as the NCCE has done for the colleges of education in the country.

5.0 SUMMARY

In this unit, you have learnt the following:

- The global history of microteaching
- The history of microteaching in Nigeria.

6.0 TUTOR-MARKED ASSIGNMENT

“The historical development of microteaching in Nigeria could also be traced to Alvan Ikoku College of Education, Owerri”. Justify.

7.0 REFERENCE/FURTHER READING

McKnight, P.C. (2003). *Microteaching in Training: A Review*

of Research in Pedagogy. London.

UNIT 3 MICROTEACHING: TEACHING PART ONE

CONTENTS

- 1.0 Introduction
- 2.0 Learning Outcomes
- 3.0 Main Content
 - 3.1 Set Induction Skill
 - 3.2 Stimulus Variation Skill
 - 3.3 Non-verbal Communication Skill
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor-Marked Assignment
- 7.0 References/Further Reading

1.0 INTRODUCTION

Skills are specialized ways of doing things. Therefore, every profession has its own peculiar and unique skills, teaching cannot be an exception. However, the following teaching skills will be discussed in this unit viz: set induction, stimulus variation and non-verbal communication skills.

2.0 LEARNING OUTCOMES

By the end of this unit, you should be able to:

- explain and put into practice set induction skill
- discuss and practise stimulus variation skill
- describe and rehearse non-verbal communication skill.

3.0 MAIN CONTENT

3.1 Set Induction Skill

At the inception of a lesson, a well-trained teacher should be able to set up and even induce his/her learners by arousing their interest, arrest their attention and eventually getting them ready for the instructional process. When all these have been done in the classroom situation prior to the lesson presentation, set induction skill has been utilised.

However, for set induction skill to be effectively and meaningfully strategized the following actions of the learners should be vividly observed and addressed properly:

- **Bored Look:** Boredom and fatigue should be put under keen observation by the teacher in his/her learners at the inception of a lesson. If a teacher gets to the classroom for his or her lesson, learners' facial appearance and in fact, psychological makeup, should be properly observed. If most of the learners are dozing or catnapping, it is an evidence that boredom/fatigue has set in, in the learners. Many reasons may be adduced to this viz: the weather may be inclement, that is, extremely cold or unpleasantly warm, lack of interest in the subject, the teacher's personality and appearance is not welcomed by the learners because of his/her wickedness or hostility to the learners, among others. However, teacher should be more empathical to the learners. He/she should motivate them and make sure his/her lesson is child-centred. He/she should make his/her subject to be "learners-pull" and not "learners-push".
- **Noise Making:** The learners may have turned the classroom situation into a noisy environment or "market place" if there is no teacher with them, or there is a pandemonium in the school environment caused by some bullying and insolent students. However, any noisy environment is not a conducive and congenial environment for a meaningful and an effectual teaching learning process. Therefore, a noisy environment should be curbed or properly put under control by the teacher before and even during the lesson by the teacher. He/she should be able to manage his or her classroom effectively and discipline should be firmly maintained and sustained by him/her throughout the instructional process.
- **Inattention:** For any meaningful teaching and learning process to take place, learners' attention should be properly arrested and their attention should also be focused on the teacher's presentation. In a classroom situation, learners' attention could be divided as in playing games or listening to music with their handset, bullying by some students, day dreaming, doing assignments in instead of paying attention to their teacher and so on. All these obnoxious behaviours from the students that can lead to inattention should be addressed and even arrested by the teacher by motivating and arousing the learners' interest through eclectic approach such as the combination of questioning and meaningful play way methods. Or use the instructional material produced by you by displaying it conspicuously in the classroom to arrest the learners' attention at the inception of the lesson. Meanwhile, the following strategies should be adopted in the practice of set induction skill:
 - Initiate your lesson by asking stimulating and thought

provoking questions.

- At the inception of the lesson, display your instructional media (regalia, models, pictures, charts, etc) conspicuously in the classroom. Let the learners pay keen attention to them and solicit their reaction.
- Just stand in front of the class without any utterance most especially during a noisy situation.
- Keep gazing at all directions in the classroom with hard look particularly when the students are not attentive.
- Fluctuate your voice when in the classroom to normal volume in a noisy situation, so as to gain learners' attention.
- Adopt moderate and plausible gesticulation.
- Give a gist of an interesting story or an exciting event which may not be related to the topic to be taught.
- Repeat your introductory remarks until learners' attention is arrested and focused on your presentation.

3.2 Stimulus Variation Skill

The skill of variability as it relates to the teacher's manner is specifically concerned with the variation, exquisite display and execution of voice, gesture and movement in the teaching arena (Fathima & Saravanakumar, 2019). More generally, it refers to the teacher's animation, enthusiasm and the ability to convince the students. In the classroom situation experienced that variation in mode of broad casting ideas to the students in terms of inflection, gesture, mobility, flexibility and expression forms a very important part of a teacher's personality which pupils mark as the teacher's overview, energy, confidence and competence (Strayer, 2003). Stimulus simply means something which can increase or cause reaction in human beings.

The main objectives of stimulus variation are to make teaching skills more professional and demanding. Fathima and Saravanakumar (2019), state that the impact of stimulus variation is concerned basically with;

- Arousing students' attention and further sustain it.
- Motivating learning through new exploration and investigation.
- Building positive feelings towards teacher and school.
- Catering to individual sensory preferences and facilitating learning.
- Promoting learning by involving students.
- Promoting educational entertainment.

Therefore, teacher needs to stimulate his/her learners by adopting eclectic and multimedia approaches to the instructional process. That is, he/she should combine two or more teaching methods and two or more instructional media in his/her teaching. Thus by doing these, various stimuli will be introduced to the learners hence, their focusing attention and interest will be maintained and sustained throughout the lesson.

However, Allen, *et al* (1969), identified six simple behavioural patterns that can be utilised in the variation of stimuli to the learners. These were later christened “stimulus variation skills”. They are: the use of gestures, focusing attention, varying interaction styles, using pauses, shifting sensory channels and teacher’s movement. These are discussed copiously below:

(1) **The Use of Gestures:** These are the actions which the teacher put up in the course of his/her lesson presentation to arrest the learners’ attention and even maintain and sustain their interest.

Moreover, gestures utilisation involves all the body movement such as the head, hands, legs and the whole body system in explaining his/her points vividly to the learners. Such actions are used to arrest, maintain and sustain learners’ attention and interest throughout the lesson. Meanwhile, the following actions can be adopted to address and arrest learners’ inattentiveness.

- Movement of the eyes: sideways, front and backways.
- A knock at the chalk or tempo board or table or desk.
- Tilting of the head upright, downward and sideways.
- Changing of facial expression, such as serious look, deep thought look, stern look and winsome smile when the learners’ attention has been arrested and focused.

(2) **Focusing Attention:** It is another attention arresting and focusing strategy. This can be employed in two way viz: verbal statements and gestures cum verbal statements:

a. **Verbal Statements:** These are the statements made by the teacher on certain essential and important points during the lesson. There are different ways this can be done viz:

- (i) “Pay special attention to this point”
- (ii) “This point is important, students”
- (iii) “Put these points at your finger tips”
- (iv) “Let these statements be registered deeply in your memory”

- (v) “Take special note of this point”
- (vi) “Add this word to your vocabulary”

These verbal statements mentioned above are not exhaustive, they depend on the individual teacher’s ways of expression. Therefore, more of the statements can be added by you.

- b. Gestures cum Verbal Statements:** As aforementioned, gestures can be used independently as stimulus variation strategy. However, when verbal focusing statement is employed together with gestures, the effects produced are more positive and effective than using it alone. The following are some of the verbal focusing statements which can simultaneously go along with gestures. Make sure you put these into practice so as to assist you tremendously in your pedagogical tasks and practices.

Gestures	Verbal focusing statement
• Teacher puts on a stern look	<input type="checkbox"/> Your performance is not encouraging.
• Teacher points to a statement on the chalk/ tempo board	<input type="checkbox"/> Take note of this statement
• Teacher claps and raises up his/her head	<input type="checkbox"/> Tells the students, this point is important take note.

You can make more of these gestures cum corresponding verbal statements. In fact, they are not exhaustive.

- (2) Varying Interaction Styles:** In the teaching/learning environment, teacher needs to interact with his/her learners. In fact, the more cordial and congenial the interaction is, the more conducive and comfortable the learning environment is to the learners. Therefore, the following four basic interaction styles can be adopted by the teacher during the instructional process.

- **Teacher-Students (Class):** This is a situation whereby the teacher is addressing a group of students or students in their class, particularly during the teaching/learning process. This is usually the most common interaction style in most of our learning environment. This type of interaction is always “teacher-centred” and therefore, little or no consideration is given to the learners during the instructional process. This is typical of lecture method of teaching. This style should be seldomly used in primary and secondary institutions though

in tertiary institutions it is frequently used, because of their high level of maturity and cognition, and in fact, teeming populations.

- **Teacher-Student:** This interaction occurs when the teacher is focusing attention on a particular student or the students individually. That is, teacher's teaching is more "student-centred". Individual student is being treated based on his/her differences. This interaction encourages individualism in learning. That is, the learner is able to learning at his/her own rate and pace. In fact, the style also allows the teacher to show empathy to the learners since there is a good rapport with individual learner.
- **Student-Student:** This interaction happens when a student is responding to an issue raised by the teacher, though the response is not encouraging, then, another student is called to modify the response given by the former student. This may continue among other students, until all the students are involved in the discussion one by one. The interaction encourages students' participation and also attention focusing is maintained and sustained.
- **Student-Students (class):** This situation occurs when the teacher puts a particular student in a position of leadership roles expected of the teacher to handle in the instructional process. However, the following points should be considered before the adoption of this style of interaction.
 - Teacher's responsibilities should be placed on a matured student who has the charisma and leadership acumen to control the whole class.
 - The student to be assigned the role should be properly prepared before the lesson or discussion.
 - Monitoring of the assigned student should be done by the teacher during the lesson or discussion. In fact, the students should not be left alone in the class to completely take over the teacher's roles.
 - The teacher should guide against giving assigned role of the teacher to a particular student perpetually so as to give room for favoritism or hatred.

By and large, in the classroom situation, interaction styles should be used so as to encourage conducive and comfortable learning environment, thus, effective learning will take place. More so, two or more of these interaction styles should be employed during the instructional process so as not to be monotonous in your interaction. This will also encourage good rapport between the teacher and the students and even among the students.

(4) **Pauses:** This is a stimulus that can be strategised in the classroom to arrest attention of the learners. During the instructional process, a teacher can just stop his/her communication suddenly to refocus or arrest students' attention. However, in order to adopt this strategy properly; the following points should be carefully studied and can be put into practice.

- Let the lesson content be broken into smaller units.
- The delivery system should also be broken into small units.
- Time consciousness should be observed. Do not be too fast in your delivery or too slow. Be moderate in delivery.
- During the delivery, watch the reaction of the learners on their faces.
- Avoid dominating the instructional process.
- Take the “pause time” to quickly eye-search round the class so as to watch or observe what the people are doing for attention focusing.

(5) **Shifting Sensory Channels:** During the teaching/learning process, it is advisable to make use all the five sensory organs or modalities namely, visual, auditory, olfactory, tactile and gustatory. As much as possible, shifting from one sensory modality or combination of two or more should be adopted during the instructional process.

Take note of the following points in order to develop shifting sensory channels properly.

- Make sure different instructional media are produced by you for a particular lesson (visual, audio and audio-visual).
- Adopt multimedia approach to your instructional process. That is a combination of two or more media (regalia, models, audio etc.).
- Synchronised visual with audio while producing your instructional media and make sure they are appropriate and suitable for the topic to be taught.

Meanwhile, read more about the utilisation of instructional media under the instructional media utilisation skill in the subsequent units.

(6) **Teacher's Movement:** Teachers should make sure he/she moves to the different directions in the classroom during the lesson so as to watch what the learners are doing thus making them to focus their attention to the teacher. In fact,

teacher's movement round the classroom will curb unwanted and distracting learners' behaviours or activities such as catnapping, dozing, side talks etc. However, the following possible movements can be employed by the teacher during the instructional process.

- Move round the class among the learners.
- Move to the left and right of the classroom among the learners.
- Move to the back and front of the classroom among the learners.

SELF-ASSESSMENT EXERCISE

1. Explain the term 'set induction skill'.
2. Describe vividly stimulus variation skill and its application to the pedagogical practices.

3.3 Non-Verbal Communication Skill

Communication process in the classroom situation takes two ways namely: verbal and non-verbal communication. While verbal communication is frequently and consciously used by the teacher, non-verbal communication is seldom and in fact, unconsciously used in the classroom. Therefore, non-verbal communication skill will be copiously discussed.

More than half of our face to face conversations are non-verbal and sign language, and gestures express our feelings and attitudes without saying a word (Bambaeeroo & Shokrpour, 2017). There was a significant correlation between the teacher's appropriate and timely verbal and non-verbal behaviors and students' achievement and good behavior (Babelan, 2012).

Non-verbal communication skill can be either natural or accidental or it may be planned. However, either of the two (planned or accidental) it can be expressed through different ways as follows:

1. The Language of the Face

The face is a powerful medium of communication. Through facial expression by the encoder or sender, a lot of interpretations can be deduced. For instance, a facial expression with winsome smile, connotes satisfaction and happiness, while, a stern look means dissatisfaction and disappointment to the speaker or sender (teacher) from the receivers (learners). However, learners should be trained on how they can interpret facial expressions of their teachers particularly during the instructional process. According to

Miller (1981), there are two types of facial expression viz: readily visible or fleeting and involuntary or voluntary.

Readily Visible or Fleeting: They are facial expression that are intentionally generated such as wrinkling of the forehead, upward movement of the eyebrows, jutting the chin, putting in a smile during the instructional process. All these kinds of facial expression have different connotations. For instance, an ephemeral winsome smile may express satisfaction or happiness or pleasure, while a poker faced expression may indicate dissatisfaction or displeasure.

Deliberate or Spontaneous Facial Expression: Voluntary facial expressions take place usually under emotional circumstances, such as angry, happiness, fearfulness among others. Whereas, involuntary facial expressions come in-form of fleeting facial expression such as, anger etc. meanwhile, voluntary facial expressions can be expressed to indicate likeness, hatred, love, fear, confidence, surprise, support, approval, disapproval and so on.

2. Body Language

Through the body movement, many expressions can be communicated to the people. In fact, body language is communicated through gesticulations. Therefore, through many gestures as afore-discussed, a lot of messages can be decoded by the receivers/learners. Gestures through arms, hand, head, fingers and legs can provide learners with a lot of messages. Though in the classroom situation, teacher should be very careful not to over-utilise gestures so as not to become a jester or clown at the presence of the learners.

3. The Space and Motion Language

The space in the learning environment for the teacher's and learners' movement connotes a lot of messages. For instance, if the seating arrangement is properly done, that is, learners are well arranged with tall ones at the back and short ones at the front of the class with roomy spaces for their movement, it indicates enabling and conducive environment for the learning to take place. Moreover, teacher's movement among the learners, touching, cuddling and patting them means a lot to them such as feeling of love, empathy, passion and in fact, they will feel happy and joyful, for their learning.

4. The Language of Time

The teacher and the learners must be time conscious, because a precious time lost can never be regained. Therefore, teacher should make sure he/she allocates time to his/her lesson. That is, a lesson or topic that should be treated for forty minutes should not be treated just for twenty minutes. To the learners, it may connote unpreparedness or unseriousness in the teacher. The teacher must get to the classroom in time. If the lesson is to start at 10a.m. he/she must be there on or before the time and not 10:30 a.m. The students also must be in the classroom before the time. This indicates the level of seriousness of the teachers and even the students.

4.0 CONCLUSION

At the inception of a lesson, set induction skill should be adopted to get the learners ready for the lesson by motivating them arousing their interest and inducing them for the learning tasks ahead. Meanwhile, stimulus variation skills need to be employed by the teacher to arrest the learners' attention and maintain and sustain their focusing attention and interest throughout the lesson.

Furthermore, the non-verbal communication skill should be utilized with the verbal communication and other skills discussed to make the instructional process effective and meaningful.

5.0 SUMMARY

You have studied the following in this unit:

- Set induction skill
- Stimulus variation skill
- Non-verbal communication skill.

6.0 TUTOR-MARKED ASSIGNMENT

At the inception of a lesson, describe vividly the teaching skill to be employed by a pedagogically trained teacher.

7.0 REFERENCES/FURTHER READING

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UNIT 4 MICROTEACHING: TEACHING SKILLS PART TWO

CONTENTS

- 1.0 Introduction
- 2.0 Learning Outcomes
- 3.0 Main Content
 - 3.1 Questioning Skill
 - 3.2 Categories of Questions
 - 3.3 Types of Questions
 - 3.4 Questioning Strategies
 - 3.5 Instructional Media Skill
 - 3.6 Reasons for the Use of Instructional Media
 - 3.7 Ways of Using Instructional Media
 - 3.8 Closure Skill
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor-Marked Assignment
- 7.0 References/Further Reading

1.0 INTRODUCTION

In the previous unit 3, you have been acquainted with the teaching skills such as set induction, stimulus variation and non-verbal communication skills. In this unit therefore, the treatment of teaching skills continues. Meanwhile, skills such as questioning, instructional media and closure skills will be copiously discussed. You are advised to study the skills religiously with thorough and vivid comprehension and digestion. In fact, make sure you put them into practice during your tutorial session with your facilitator.

2.0 LEARNING OUTCOMES

By the end of this unit, you should be able to:

- explain questioning skill and put it into practice
- describe instructional media skill and make a rehearsal with it
- discuss closure skill and practicalise it.

3.0 MAIN CONTENT

3.1 Questioning Skill

In the instructional process questioning is one of the indispensable skills that a good pedagogically trained teacher should be able to skillfully

and strategically utilise from the inception to the tail-end of the process. In fact, if skillfully and effectively used, it is a reliable “tool” for arresting students’ attention, maintaining and sustaining students’ interest and focusing of attention throughout the teaching and learning process.

The following are the benefit that can be derived from the use of questioning during the instructional process:

- i. It is a “sine qua non” evaluation tool to the teacher. It is through the questions asked by the teacher in consonance with the stated objective and based on the students’ responses that the teacher will know whether or not the objectives have be achieved.
- ii. It can be used to detect the students’ entry behaviours in a particular lesson. With questioning technique, previous knowledge of the students will be exposed to the teacher.
- iii. Questions can be used as a thought provoking strategy. With a well-structured question, deep thinking in the intelligent learners is provoked and challenges are posed to the mediocrities and dullards.
- iv. It is used to expose students’ thinking direction to the teacher; hence, it can be used to detect areas of individual student’s deficiencies on learning.
- v. It can be used to arrest attention, maintain and sustain learners’ interest throughout the lesson. If teacher poses questions to the learners frequently during the instructional process, the learning environment will be fully charged.

In fact, every learner will always be at alert because you never can tell who will be called to respond to the question asked by the teacher.

3.2 Categories of Questions

There are two major groups of questions: broad and narrow questions.

- (a) **Broad Question:** This type of question requires details in responding to it e.g. What is CPU in computer system? The answer to this question requires the full meaning of CPU – Central Processing Unit and its functions in the computer system.
- (b) **Narrow Question:** This requires a definite answer e.g. What is the full meaning of CPU in computer system? The answer to this question is Computer Processing Unit. This answer is narrow and definite while the former question is broad because the answer requires details, not just the full meaning of CPU.

3.3 Types of Questions

There are three main types of questions namely: Type I, Type II and Type III.

1. **Type I:** This comprises convergent and divergent questions
 - **Convergent Question:** This gives room to just only one specific correct answer; e.g. who is the President of Nigeria?
 - **Divergent Question:** It allows many possible answers; e.g. which is the best privately owned secondary school in your town?
2. **Type II:** This involves mental operation questions which are grouped into four viz: factual, empirical, productive and evaluative.
 - **Factual Question:** It tests students' ability to recall; e.g. state the formula for finding the area of a circle.
 - **Empirical Question:** This requires the learner to integrate or analyse before giving the answers; e.g. find the area of a square with 20cm in length.
 - **Productive Question:** It is usually open-ended question.

It requires imagination and reflective thinking in answering it; e.g. explain vividly utilisation of questioning skill in the instructional process.

- **Evaluative Question:** This requires placing judgments or value on something. It is also open-ended, though, it is usually more difficult to answer than the previous types of questions such as productive and empirical; e.g. who is more important, curriculum developer or curriculum implementer?
3. **Type III:** This is made up of focusing, prompting and probing questions.
 - **Focusing Question:** This is used to assess the amount of the knowledge gained by the students within a particular lesson. The question focuses on the present subject of discussion. Therefore, it may be factual, empirical, productive or evaluative.
 - **Prompting Question:** It is asked by the teacher in a way to suggest the answer to the student. It is a retraining of the original question in a way to assist the student to get the correct response; e.g. Teacher: 'What is the product of 4 and 5?'

Student Sola: 'No idea sir' Teacher: 'Okay, multiply 4 by 4'

Student Sola: 16

Teacher: 'Add 4 to 16'

Sola: '20'

Teacher: 'What is the product of 4 and 5?' Sola: '20'

Teacher: 'Very good, the answer is correct'.

Probing Question: This requires the testee to develop critical thinking, e.g. explain concisely your health status, describe vividly the life history of one of the great musicologists in Nigeria.

Faulty Questions: These are questions that some teachers ask the students which are faulty or badly structured because they are inexperienced or novice in the teaching profession. Though some experienced teachers also make this mistake seldomly or even frequently. These type of questions include: Badly worded questions viz: vague rhetoric, postscript, fill-in- the-blank, predetermined respondent questions.

- (i) Repeated questions
- (ii) Multiple questions
- (iii) Unlinked questions
- (iv) Limited questions

i. Badly worded question: These include:

- (a) **Vague questions:** These are "non-focus" questions e.g. Describe the ethnic diversity of Nigeria.
- (b) **Rhetoric questions:** They require "Yes" or "No" answer e.g. is it clear to you?

Do you understand? In fact, this has become habit or mannerism in some teachers. They usually end up their statement with any of these rhetoric questions.

- (c) **Postscript questions:** These are questions where answers are already in the questions e.g. Ibadan is the capital of Oyo State.

The capital of Oyo State is _____

- (d) **Fill-in-the-blank or complete the items question** e.g. Nigeria is made up of i. _____, ii. _____ and iii _____ ethnic groups. The question is ambiguous and not even

specific because there are many ethnic groups in Nigeria. Except the word major is included, any three ethnic groups mentioned by the testee are germane. But if three major ethnic groups are asked, the answers are the Yoruba, Igbo and Hausa.

- (e) **Pre-determined-respondent question:** This is a question where the name of a particular respondent or student is mentioned by the tester (teacher) before the question is asked e.g. Segun, what is the teaching skill that a pedagogically trained teacher should adopt at the beginning of the lesson?

Already, the teacher has mentioned a student's name; therefore, other students may feel unconcerned or even become inattentive or see their teacher has been partial.

To sum up, all these faulty ways of asking question by the teacher should be avoided.

- ii. **Repeated Questions:** Teacher asks questions repeatedly, that is, the same question is repeated, though structured differently with the same correct or right response or answer e.g. "Microteaching is a *sine qua non* for the trainees in pedagogy", Discuss or justify the inclusion of microteaching in the teacher education programme. If the two questions are asked in the same examination contexts, the responses to the two questions may be similar if not the same. Therefore, they are repeated questions which may confuse the students.

- iii. **Multiple Questions:** Question asked by the teacher is loaded and even complex to answer. That is, the question is two or three in one. E.g. Who is the current President of Nigeria and when and how did he come to power?

- iv. **Unlinked Question:** Sequentially, questions must be structured or framed to link each other in the instructional process e.g.

- (i) What is microteaching?"
(ii) Discuss concisely the three phases in the process of microteaching.

- v. **Limited Question:** Some teachers are in the habit of asking question when they pause or bereaved of facts during their presentation. Such questions are:

- Are you with me?

- Do you understand?
- Am I communicating? Etc.

3.4 Questioning Strategies

Olaniran and Akorede (2018) remarked that authors such as Wood & Anderson (2001), Sahin & Kulm (2006), Groenke & Paulus (2007) Wilson & Smetana (2011) and Paul (2016) asserted that in practicing effective questioning in the classroom setting, the following strategies should be adopted in using questioning skill during the instructional process:

- (i) Plan relevant questions: The essence of good questioning is in planning questions that are directly related to the concept or skill being taught.
- (ii) Phrase questions clearly: Clear and concise phrased questions communicate what the teacher expected of the students' responses.
- (iii) Ask questions at all levels: Learning gains increase as the variety of types of questions increase. Vary the level of difficulty as to include questions on both concrete and abstract levels.
- (iv) Ask higher-level questions to older students: Teachers should act as a facilitator of knowledge and ask deeper questions that will motivate their students engaging in higher-level thinking and communication.
- (v) Encourage wide student participation: Distribute questions to involve. The majority of students. Balance responses from volunteering and non-volunteering students and encourage student-to-student interaction.
- (vi) Allow adequate wait time: Give students time to think when responding. Allow three to five seconds of wait time after asking a question before requesting a student's response, particularly when high-level questions are asked. The more time a teacher waits for a reply from the students the better the response and will encourage other students to participate.
- (vii) Rephrase or redirect questions as needed: If a student is struggling to answer a question either redirect it to another or rephrase it so it is clearer.
- (viii) Probe student responses in a non-judgmental way: Ask students more questions in order to elaborate and clarify on their answer, to support a point of view, or to extend their thinking to discover new information. Teachers should also assist with student's incorrect responses.
- (ix) Encourage students' response: All questions should at least be

acknowledged.

- (x) Provide praise and acknowledgement: Acknowledge and emphasize correct responses and reward good answers justly.
- (xi) Do not repeat students' responses: Let students learn to listen for themselves.
- (xii) Use both covert and overt strategies: Do not direct the question to anyone until it is asked. This forces all students to pay attention and requires more students to answer the question mentally. The initial use of covert strategies and following them with overt strategies produces active involvement and better individual responses.

The following strategies should be adopted in using questioning skill during the instructional process.

- (i) **Wait Time:** Allow the learners to think very well after asking a question before they are called to respond to it.
- (ii) **Listening:** Response of the learner should be listened to by the teacher to know if it is correct or not correct response should be positively rewarded or appreciated e.g. excellent or clap for him/her if is at primary level.
- (iii) **Redirecting:** To encourage class participation, when a question is asked by the teacher, and many students signify by raising up their hands to respond to the question, call them one by one and later respond to their responses.

3.5 Instructional Media Skill

Instructional media are information carriers that can be utilized to facilitate teaching and learning process. Based on sensory modalities, they can be classified into three major groups viz: visual, audio and audio-visual media.

- **VisualMedia:** They appeal to sense of seeing e.g. regalia, models, charts, over head projector (OHP) maps, printed materials, etc.
- **AudioMedia:** They appeal to sense of hearing e.g. radio set, telephone, audio disk player etc.
- **Audio-Visual Media:** They appeal to senses of hearing and seeing e.g. television set, computer set digital video disk (DVD) etc.

3.6 Reasons for the Use of Instructional Media

In the instructional process, instructional media are used for the following reasons:

- To motivate and arrest learners' attention.
- To facilitate the rate of learning in the learners.
- To evaluate the learning process.
- To reinforce verbal messages.
- To make learning process interesting exciting and lively.
- To enhance students' performance.
- To foster teacher's presentation.
- To save teacher's time.
- To maintain and sustain learners' interest and attention focusing.
- To make the lesson more realistic and practical.

3.7 Ways of Using Instructional Media

- (i) They should be conspicuously displayed for every student in the class to see vividly especially if they are visual media.
- (ii) For the audio media, the sound system should be adjusted loud enough for all students to hear clearly but not too loud so as not to constitute "noise factor".
- (iii) For the projected media, that is electrically operated media, it is advisable to provide a standby alternative source of power in case there is erratic or epileptic power supply. Also, the screen for projection should be large enough for all students to see clearly.
- (iv) Calligraphically, lettering on charts should be done and produced with boldness and clarity for every student in the class to read at a distance.
- (v) The chalk or tempo board being a unique and peculiar instructional medium should be used judiciously, skillfully and effectively by the teacher in the following ways.
 - All written work on the board should be neat, tidy and legible.
 - The board should not be too loaded with facts fighting for space and attention.
 - Rub off or clean up the unwanted materials on the board.
 - Use the board from left to right in the demarcated columns.
 - Let two letters and figures written on the board be legibly and beautifully seen.
 - When teaching, the teacher should avoid blocking the students' view on the board. He/she should also avoid speaking or talking to the board during the instructional process.

However, instructional media can be used at the inception,

middle and tail-end of the lesson. They can be used to introduce the lesson, present the lesson and to evaluate the lesson. Therefore, they can be used throughout the lesson, though over-utilization and under-utilization should be avoided.

SELF-ASSESSMENT EXERCISE

1. Highlight five benefits derived from using questioning skill in the instructional process
2. State five reasons for using instructional material during the teaching-learning process

3.8 Closure Skill

A process, like instruction has both the “inception” and the “destination”. Therefore, just like the set induction skill is required to be utilised at the inception of the instructional process (lesson), also closure skill is keenly needed at the destination or tail-end of the process. Meanwhile, closure skill involves all the teacher’s and learners’ activities at the concluding portion of the lesson. Such activities include – recapitulation, revision, review, conclusion and summary of the lesson. However, the time used for the closure is very short comparing with the other aspects of the instructional process like presentation and introduction where longer time is spent.

The Significance of “Closure” in a Lesson

With a good closure in a lesson, teacher’s effort will be positively rewarded. Therefore, good closure is highly significant in a lesson because of the following reasons.

- (i) It enables the teacher to evaluate his/her lesson.
- (ii) Individual differences in the learners can be easily identified by the teacher.
- (iii) The teacher is able to consolidate the salient points in the topic taught.
- (iv) Self-assessment in the lesson by the teacher is made possible.
- (v) It determines teacher’s next level of action whether to advance or retreat.
- (vi) It enhances teacher’s efficiency and learners’ academic performance.

Activities at the Closure of the Lesson

Both teacher and the learners should be involved in the

following activities for a meaningful, logical and effective good closure of the instructional process.

- (i) Teacher moves round the class to supervise the learners' written work in their notes.
- (ii) The exercises done by the learners are checked by the teacher.
- (iii) Teacher writes exercises on the chalk/tempo board for the learners to solve.
- (iv) Questions are asked by the teacher based on the stated objectives.
- (v) If in the laboratories learners can be assisted by the teacher to operate some of the equipment exposed to during the lesson.
- (vi) If in the pre and primary levels, learners may be called to recite the poem(s) learnt during the lesson or previously.
- (vii) Teacher demands questions from the learners.

By and large, the following points should be noted to accomplish a worthwhile closure during the instructional process.

- (i) Closure is an integral part of the instructional process therefore should make sure it is plausibly and logically observed.
- (ii) The good social rapports that have existed during the lesson presentation should continue till the tail-end of the lesson (closure). Hence, it should not be terminated abruptly before the closing of the lesson.
- (iii) In order not to lose the focus of the lesson, the time frame for the closure should be brief and judiciously spent.
- (iv) Closure serves as the self-assessment time for the teacher so that he/she will know what will be the content for the next lesson and subsequently.

4.0 CONCLUSION

A good pedagogically trained teacher needs to evaluate his/her instructional process progressively. Therefore, in doing this, questioning skill is an appropriate and indispensable tool to be utilized for a worthwhile evaluation. Furthermore, he/she needs to facilitate the learners' rate of learning, hence, instructional media skill is adopted to perform the "magic" while, the closure skill is employed at the tail-end of the lesson to have an effective and logical conclusion of the teaching and learning process.

5.0 SUMMARY

In this unit, you have studied the following:

- Questioning skill
- Instructional media skill
- Closure skill

It is assumed that you have thoroughly read and digested the topics. Now prepare for the remaining part of these teaching skills in the next unit.

6.0 TUTOR-MARKED ASSIGNMENT

Justify the adoption of closure in the instructional process.

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UNIT 5 MICROTEACHING: TEACHING SKILLS PART THREE

CONTENTS

- 1.0 Introduction
- 2.0 Learning Outcomes
- 3.0 Main Content
 - 3.1 Examples and Illustrations Skill
 - 3.2 Planned Repetition Skill
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor-Marked Assignment
- 7.0 References/Further Reading

1.0 INTRODUCTION

In the previous units 1-4 in this module, different teaching skills that a pedagogically trained teacher needs to perform in the teaching and learning process were discussed in details. The skills include set induction, stimulus variation, non-verbal communication, questioning, instructional media and closure skills. In this last unit, the remaining parts of the teaching skills that are also highly essential for the professionally trained teacher to acquire and exhibit during the instructional process are copiously treated. They are examples cum illustrations and planned repetition skills. Therefore, you should endeavour to study these skills religiously, carefully and with thorough comprehension.

2.0 LEARNING OUTCOMES

By the end of this unit, you should be able to:

- explain the utilisation of examples cum illustrations skill in the instructional process
- describe the adoption of planned repetition skills in the teaching and learning process.

3.0 MAIN CONTENT

3.1 Examples and Illustrations Skill

On the surface, examples and illustrations seem to be the same, but with a close look, there are slight differences between them. While, examples

appear to be more concrete and real, illustrations on the other hand appear to be a little bit abstract, thus, they can even be used to explain the examples given graphically or diagrammatically. Examples may be in form of a story, demonstration, practical or real life show by solving a mathematical problem before the learners are given the main exercises to solve.

The Significance of Examples-cum-Illustrations in the Instructional Process

Examples-cum-illustrations serve the following purposes in the teaching and learning process.

- (i) They are used to clarify the truth and facts of the teacher's presentation.
- (ii) They stimulate imagination. The learners can visualize the situation being illustrated.
- (iii) They assist the learners to remember what they are taught.
- (iv) They make learning more interesting, exciting, lively and in fact, permanent in the learners.
- (v) They help the learners to comprehend an argument more vividly, logically and plausibly.
- (vi) They bridge difficult concepts that may be difficult to explain to the learners verbally. For instance, some concepts or issues may be difficult to explain to the learners with ordinary words of mouth, examples-cum-illustrations will help tremendously in conveying such facts to them.
- (vii) They make provisions for various groups of learners. That is, example-cum-illustrations if effectively and plausibly used, they assist the teacher to reach out to every individual learner at his/her standpoint.
- (viii) They can be used to arrest learners' attention and even to maintain and sustain their interests

Variables to Be Considered in the Utilisation of Examples- cum- Illustrations during Instructional Process

- (i) **Relevance and Appropriateness:** Examples-cum-illustrations to be cited by the teacher to the learners should be relevant and appropriate to the subject matter, topic, concept and issue under discussion. In fact, if irrelevant and inappropriate examples-cum illustrations are used by the teacher the learners can lose focus of the lesson.
- (ii) **Certainty and Currency:** The teacher must be sure and certain of the examples-cum-illustrations used or cited to the learners. The cited examples and illustration must also be current and not

outdated or obsolete, so that wrong information will not be given to the learners.

- (iii) **Moderation and Plausibility:** The examples-cum- illustrations used by the teacher should be moderate and plausible or reasonable in presentation so as to avoid time wastage and unwanted “noise factors”.
- (iv) **Strategic Placement:** Examples-cum-illustrations used by the teacher should be strategically placed within the period of the lesson so as achieve the purpose they are being cited for.

Moreover, the teacher should not over-stress or over-emphasize the cited examples-cum-illustrations so as not to become the focus of discussion for the learners. Thus, the main concept or topic being treated is not put into oblivion.

All these variables should be put into consideration for effective and meaningful utilisation of examples-cum-illustrations in the instructional process.

3.2 Planned Repetition Skill

1. Meaning of Repetition

Planned Repetition Skill is a classical teaching skill that teachers should understand, adopt and apply appropriately because of its role in the enhancement of mastery learning. This position was supported by Burns, Ysseldyke, Nelson, and Kaniye (2015) in their study which investigated the number of repetitions required to master multiplication math facts by analyzing data from 15402 3rd, 4th and 5th graders using National database, with result obtained indicating that students with lower math skills require significantly more repetitions. The occurrence of certain or a particular action more than once is simply referred to as repetition. Therefore, in the instructional process, repetition may connote:

- (i) teaching of a particular lesson which had been taught before
- (ii) frequent re-statement or re-mentioning of a particular question during the lesson
- (iii) frequent re-occurrence of statements during the instructional process
- (iv) frequent re-introduction of the same instructional media during the teaching and learning process.

2. Concept of Planned Repetition Skill

Conceptually, planned repetition skill is an intentionally planned re-occurrence of events or lesson which is skillfully implemented. Therefore, such a repetition could be planned by the teacher at his/her instance or planned by the learners at their own instance. Planned repetition may equally happen as a result of certain peculiar situation or circumstance that occurred during the instructional process. However, repetition can be planned during the teaching and learning process due to the following occurrences or circumstances.

- (i) In preparation to examination, the teacher intends to review or revise the previous topics taught with the learners.
- (ii) The lesson is stopped abruptly or prematurely due to stormy or/and torrential rainfall or any other uncontrollable circumstances that happened in the classroom or school compound.
- (iii) Through summative evaluation, the teacher discovers that a large portion of the stated objectives of the syllabus has not been achieved.
- (iv) The teacher observes that there is a need to emphasize an aspect of the lesson as against the other aspects.

3. Benefits Derived from Planned Repetition

The following benefits can be derived from planned repetition by the teacher and the learners.

- (i) **It aids assimilation of facts and consequently enhances remembering.** An aphorism states that “perfection occurs through constant practice”. Therefore, with planned repetition in the instructional process, practice connotes repetition of an action frequently which will make the individual learner becomes proficient in that action he/she repeated or practised. The repeated action/task by the learners becomes permanent in them.
- (ii) **It gives room for emphasis.** The learners are able to see the significance of repetition through the emphasised aspect of the topic taught.
- (iii) With planned repetition, all aspects of the lesson were touched in details more than the first occurrence of the lesson. In fact, the planned repetition enables the teacher to be copious so that the learners’ responses could be more comprehensive.
- (iv) **It helps in the removal of vague, ambiguous and**

nebulous concepts in the learners. With planned repetition of a lesson with more experienced teacher apart from the inexperienced teacher that taught the learners before, misconceptions on certain issues or concepts will be clarified and thoroughly comprehended by the learners.

- (v) The learners are able to consolidate the salient points from the lesson the teacher had taught them before through the planned repetition. In fact, the confusion in the mind of the learners will be cleared or completely removed if the lesson is repeated a couple of times.

4. Limitations of Planned Repetition Skill

The following are some of the demerits of planned repetition skill.

- (i) **Levity and Nonchalant Attitude:** The teacher may treat the first occurrence of the lesson taught with levity and nonchalant attitude if he knows that the lesson will be certainly repeated.
- (ii) **Confusion in the Learners:** An inexperienced teacher could end up confusing the learners by the time he/she repeats him/herself. This may happen when the teacher deviates completely from what he/she has mentioned before.
- (iii) **Indiscipline among the Learners:** Learners may soon form the opinion that the teacher will always repeat him/herself, hence they deliberately refuse to pay attention to the teacher's first round of speeches thus this may lead to indiscipline among the learners.
- (iv) **Time Wastage:** Intelligent and brilliant learners, who easily follow the teacher at his /her first presentation of the lesson, may feel that their time is being wasted by teacher's repetition of his/her speeches, hence, boredom and fatigue may set in, in them.

5. The Utilisation of Planned Repetition Skill in the Instructional Process

To maximize the benefits derived from a well-planned repetition skill and minimize the limitations, the following steps should be taken with sincerity and thoroughness.

- (i) **Pause as a Necessity:** It is necessary for the teacher to observe pauses while repeating himself/herself particularly when questions are asked by the teacher. The period of pausing is to allow learners to comprehend the real fact that questions demand for.
- (ii) **Progressive Evaluation:** During the instructional process, the teacher should evaluate progressively from the

inception of the lesson till the tail-end of the process. This means that the evaluation should be both “forward” and “backward” and vice-versa until the instructional objectives are achieved. Therefore, the repetition of the evaluation is akin to planned repetition which should be skillfully done. Moreover, this progressive/formative evaluation can also be employed in form of planned repetition in the teaching and learning of new words which need to be pronounced by the learners under the guidance of the teacher. Poems recitation, multiplication tables can also be taught through planned repetition skill so that the learners will be able to master the poems and the multiplication tables thoroughly and comprehensively.

- (iii) **Placement of Emphasis:** Through the use of planned repetition skill, emphasis can be placed on certain statements or points that are salient in the lesson. Therefore, the learners should take note of those points or speeches repeated several times by the teacher as areas of emphasis in the lesson.

SELF-ASSESSMENT EXERCISE

1. Explain concisely the teaching skill to be employed by a professional trained teacher when a lesson stopped suddenly due to unpleasant circumstance that occurred in the school.
2. Give five reasons why examples-cum-illustrations should be utilised during the instructional process.

4.0 CONCLUSION

Teaching skills which are usually being acquired through microteaching are essential tools for a professionally and pedagogically trained teacher. Therefore, those teaching skills viz: set induction, stimulus variation, non-verbal communication, questioning, instructional media, closure, examples-cum-illustrations and planned repetition skills should be acquired and exhibited by you during the instructional process. These will facilitate learners’ rate of learning, thus, consequently enhances their academic performance.

5.0 SUMMARY

In this unit, you have studied the following:

- Examples-cum-illustration skill.
- Planned repetition skill.

Therefore, these skills and the previous ones you have been acquainted

with should be carefully studied and always put into practice during the teaching and learning process. They could also be practised during your tutorial session with your colleagues and facilitator.

6.0 TUTOR-MARKED ASSIGNMENT

Explain vividly five benefits that can be derived from the use of planned repetition skill in the instructional process.

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ANSWERS TO SELF-ASSESSMENT EXERCISE IN UNIT 1

1. Microteaching is a scaled down training procedure geared towards simplification of the complexities of teaching. It is also a teaching in miniature, that is, a teaching scaled down in terms of class size, time, task or content and teaching skills.
2. The three major phases in the microteaching process are:
Phase I: Modelling:
Phase II: Practice:
Phase III: Feedback

ANSWERS TO TUTOR-MARKED ASSIGNMENT IN UNIT 1

Microteaching is procedural in nature as the complex act of teaching is being broken down into simple components as follows:

- (i) A particular skill is defined to student's teacher in terms of specific teaching behaviour and the objectives which such behaviour aims at teaching.

- (ii) The teacher educator can be given a demonstration lesson where the particular skill is employed. Videotape or a film based on the use of the specific skill, if available, can also be viewed. Or the teacher educator can at least present a prepared 'episode' so as to serve as a model for the trainees.
- (iii) The student's teacher prepares a lesson plan based on the pre-decided model on a suitable topic relating to the particular skills which he proposes. More than the subject-matter, the technique of the behavioral component involved in that skill is considered important in micro-teaching, this is called the plan session.
- (iv) The student's teacher teaches the lesson to a small group of pupils, preferably of peer group in a simulated condition. The college's supervisor or a peer can observe the lesson given by the trainees and note down their observations in a specially developed proforma. The lesson may be videotaped if facilities exist.
- (v) Feedback is provided immediately to the student teacher by audiotape or videotape recorder. The student observes and analyses his lesson with the help of the supervisor. In the absence of the videotape or audiotape, peers who participated in the lesson as learners, peer observers, the college supervisor can provide the necessary feedback. The observation schedule maintained by the college supervisor and the feedback session. The tallies made in the reinforcement comments about instances of effective use of the skill and also situations where the skill could have been more effectively made use of. This session is sometimes called 'critique session'.
- (vi) In the light of the feedback and supervisor's comments, the student teacher re-plans or restructures the same lesson or a different lesson in order to use the skill more effectively.
- (vii) The revised lesson is re-taught to a different but comparable group of pupils.
- (viii) The lesson is again observed or videotaped or audio-taped and observations are noted in the proformas as was done earlier in the teach session. Feedback is again provided on the reteach lesson. This step is called the re-feedback session.
- (ix) The plan, teach, feedback, re-plan, reteach and re-feedback sessions will constitute a single micro-teaching cycle. This cycle may be repeated till adequate level of skill acquisition takes place.

ANSWERS TO SELF-ASSESSMENT EXERCISE IN UNIT 2

Explanation of the global history of microteaching is that microteaching prepares trainees in pedagogy (students-teachers)

in training for the main teaching practice. Therefore, it should be established that a trainee in pedagogy works with a small group of real students. Though, a situation where it becomes difficult to provide actual students, their course mates later trainees in pedagogy play the role of the real students.

ANSWERS TO TUTOR-MARKED ASSIGNMENT IN UNIT 2

The history of microteaching in Nigeria. In the 1970s in Nigeria, microteaching was incorporated into the college programme in Alvan Ikoku College of Education Owerri with the assistance of the UNESCO grants given to the college. Meanwhile, since the Alvan Ikoku college experience, most of the teacher training colleges in the country adopted and adapted the new innovation (microteaching) in the preparation and training of student-teachers in their various colleges of particular in the Nigeria colleges of Education.

ANSWERS TO SELF-ASSESSMENT EXERCISE IN UNIT 3

1. Set Induction Skill is when the teacher is able to set up and even induce his/her learners by arousing their interest, arrest their attention and eventually getting them ready for the instructional process.
2. Stimulus Variation Skill is related to the teacher's manner, is specifically concerned with the variation, exquisite display and execution of voice, gesture and movement in the teaching arena. There six simple behavioural patterns that can be utilised in the variation of stimuli to the learners. These were later christened "stimulus variation skills". They are: the use of gestures, focusing attention, varying interaction styles, using pauses, shifting sensory channels and teacher's movement.

ANSWERS TO TUTOR-MARKED ASSIGNMENT IN UNIT 3

At the beginning of the lesson, Set Induction Skill is employed by the teacher to set up and even induce the learners by arousing their interest, arrest their attention and eventually getting them ready for the instructional process. Meanwhile, the following strategies should be adopted in the practice of set induction skill:

- Initiate your lesson by asking stimulating and thought-provoking questions.
- At the inception of the lesson, display your instructional media (regalia, models, pictures, charts, etc) conspicuously in the classroom. Let the learners pay keen attention to them and solicit their reaction.

- Just stand in front of the class without any utterance most especially during a noisy situation.
- Keep gazing at all directions in the classroom with hard look particularly when the students are not attentive.
- Fluctuate your voice when in the classroom to normal volume in a noisy situation, so as to gain learners' attention.
- Adopt moderate and plausible gesticulation.
- Give a gist of an interesting story or an exciting event which may not be related to the topic to be taught.
- Repeat your introductory remarks until learners' attention is arrested and focused on your presentation.

ANSWERS TO SELF-ASSESSMENT EXERCISE IN UNIT 4

1. The following are the benefit that can be derived from the use of questioning during the instructional process:
 - (i) It is a "sine qua non" evaluation tool to the teacher. It is through the questions asked by the teacher in consonance with the stated objective and based on the students' responses that the teacher will know whether or not the objectives have be achieved.
 - (ii) It can be used to detect the students' entry behaviours in a particular lesson. With questioning technique, previous knowledge of the students will be exposed to the teacher.
 - (iii) Questions can be used as a thought provoking strategy. With a well structured question, deep thinking in the intelligent learners is provoked and challenges are posed to the mediocrities and dullards.
 - (iv) It is used to expose students' thinking direction to the teacher; hence, it can be used to detect areas of individual student's deficiencies on learning.
 - (v) It can be used to arrest attention, maintain and sustain learners' interest throughout the lesson. If teacher poses questions to the learners frequently during the instructional process, the learning environment will be fully charged.

In fact, every learner will always be at alert because you never can tell who will be called to respond to the question asked by the teacher.

2. Instructional media are used for the following reasons:

- To motivate and arrest learners' attention.
- To facilitate the rate of learning in the learners.
- To evaluate the learning process.
- To reinforce verbal messages.

- To make learning process interesting exciting and lively.
- To enhance students' performance.
- To foster teacher's presentation.
- To save teacher's time.
- To maintain and sustain learners' interest and attention focusing.
- To make the lesson more realistic and practical.

ANSWERS TO SELF-ASSESSMENT EXERCISE IN UNIT 4

Good closure is highly significant in a lesson because of the following reasons.

- (i) It enables the teacher to evaluate his/her lesson.
- (ii) Individual differences in the learners can be easily identified by the teacher.
- (iii) The teacher is able to consolidate the salient points in the topic taught.
- (iv) Self-assessment in the lesson by the teacher is made possible.
- (v) It determines teacher's next level of action whether to advance or retreat.
- (vi) It enhances teacher's efficiency and learners' academic performance.

ANSWERS TO SELF-ASSESSMENT EXERCISE IN UNIT 5

1. Planned Repetition skill should be employed when a lesson stopped suddenly due to unpleasant circumstance that occurred in the school.
2. Five reasons why examples-cum-illustrations should be utilized during the instructional process are:
 - a. They are used to clarify the truth and facts of the teacher's presentation
 - b. They stipulate imagination
 - c. They make learning more interesting, exciting, lively and in fact, permanent in the learners.
 - d. They help the learner to comprehend an argument more vividly, logically & plausibly
 - e. They can be used to arrest learner attention and even to maintain and sustain their interest.

ANSWERS TO SELF-ASSESSMENT EXERCISE IN UNIT 5

The following benefits can be derived from planned repetition by the teacher and the learners.

- (i) It aids assimilation of facts and consequently enhances remembering.
- (ii) It gives room for emphasis.
- (iii) It enables the teacher to be copious so that the learners' responses could be more comprehensive.
- (iv) It helps in the removal of vague, ambiguous and nebulous concepts in the learners.
- (v) The learners are able to consolidate the salient points from the lesson the teacher had taught them before through the planned repetition.