COURSE GUIDE

ODL 722
MATERIAL DEVELOPMENT AND TEL

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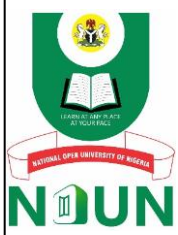

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INTRODUCTION

ODL722 – Material Development and TEL is a 3-credit unit. The course is a core course in second semester. It will take you 13 weeks to complete the course. You are to spend 44 hours of study for a period of 11 weeks which include the first week of orientation. The remaining two weeks which made up the 13 weeks will be for end of semester examination. The credit earned in this course is part of the requirement for graduation.

You will receive the course material which you can read online or download and read off-line. The online course material is integrated in the Learning Management System (LMS). All activities in this course will be held in the LMS. All you need to know in this course is presented in the following sub-headings.

COURSE COMPETENCIES

By the end of this course, you will gain competency in:

- Course material development
- Instructional design
- Planning and designing unit of a course
- Technology Enabled Learning (TEL)
- Development of institutional TEL Policies
- Define, and use Blended Learning approach to Distance Learning
- Conduct assessment in Distance Learning.

COURSE OBJECTIVES

The course objectives are to:

- Developed Course Material
- Design unit of course
- Apply TEL in Distance Learning
- Develop assessment skill in Distance Learning

WORKING THROUGH THIS COURSE

The course is divided into modules and units. The modules are derived from the course competencies and objectives. The competencies will guide you on the skills you will gain at the end of this course. So, as you work through the course, reflect on the competencies to ensure mastery. The units are components of the modules. Each unit is sub-divided into introduction, intended learning outcome(s), main content, self-

assessment exercise(s), conclusion, summary, and further readings. The introduction introduces you to the unit topic. The intended learning outcome(s) is the central point which help to measure your achievement or success in the course. Therefore, study the intended learning outcome(s) before going to the main content and at the end of the unit, revisit the intended learning outcome(s) to check if you have achieved the learning outcomes. Work through the unit again if you have not attained the stated learning outcomes.

The main content is the body of knowledge in the unit. Self-assessment exercises are embedded in the content which helps you to evaluate your mastery of the competencies. The conclusion gives you the takeaway while the summary is a brief of the knowledge presented in the unit. The final part is the further readings. This takes you to where you can read more on the knowledge or topic presented in the unit. The modules and units are presented as follows:

Module 1 ODL Course Material.

Unit 1 ODL Course Material: What is it?
Unit 2 ODL Course Material Development (Instructional Design)
Unit 3 Planning Units of ODL Course Material
Unit 4 Assessment in ODL Course Material

Module 2 Technology-Enabled Learning (TEL)

Unit 1 Introduction and strategies for TEL
Unit 2 Institutional Policies and Infrastructure for TEL
Unit 3 Implementing Policies and Strategies of TEL

There are seven units in this course spread across ten weeks to complete with assignments.

PRESENTATION SCHEDULE

The weekly activities are presented in Table 1 while the required hours of study and the activities are presented in Table 2. This will guide your study time. You may spend more time in completing each module or unit.

Table I: Weekly Activities

Week	Activity
1	Orientation and course guide
2	Module 1 Unit 1
3	Module 1 Unit 1
4	Module 1 Unit 2
5	Module 1 Unit 2
6	Module 1 Unit 3
7	Module 1 Unit 4
8	Module 2 Unit 1
9	Module 2 Unit 2
10	Module 2 Unit 3
11	Revision and Response to Questionnaire
12	Revision and Response to Questionnaire
13	Examination

The activities in Table I include facilitation hours (synchronous and asynchronous), assignments, and Discussion Forum. How do you know the hours to spend on each? A guide is presented in Table 2.

Table 2: Required Minimum Hours of Study

S/N	Activity	Hour per Week	Hour per Semester
1	Synchronous Facilitation (Video Conferencing)	1	11
2	Self-Study and Asynchronous Facilitation (Read and respond to posts including facilitator's comment, self-study)	2	22
3	Assignments, Discussion Forum, and portfolios	1	11
4	Examination		2
	Total	4	46

ASSESSMENT

Table 3 presents the mode you will be assessed.

Table 3: Assessment

S/N	Method of Assessment	Score (%)
1	Portfolios	10
2	Discussion Forum	10
3	Assignments	20
4	Final Examination	60
Total		100

PORTFOLIO

A portfolio has been created for you tagged "**My Portfolio**". With the use of Microsoft Word, state the knowledge you gained in every Module and in not more than three sentences explain how you were able to apply the knowledge to solve problems or challenges in your context or how you intend to apply the knowledge. Use this Table format:

APPLICATION OF KNOWLEDGE GAINED

Module	Topic	Knowledge Gained	Application of Knowledge Gained

You may be required to present your portfolio to a constituted panel.

DISCUSSION FORUM

Your contributions in the discussion forums will be scored. You are expected to make your post on the discussion forum before you can read the posts of others.

ASSIGNMENTS

Take the assignment and click on the submission button to submit. The assignment will be scored, and you will receive a feedback.

EXAMINATION

Finally, the examination will help to test the cognitive domain. the test items will be mostly application, and evaluation test items that will lead to creation of new knowledge/idea.

HOW TO GET THE MOST FROM THE COURSE?

To get the most in this course, you:

- Need a personal laptop. The use of mobile phone only may not give you the desirable environment to work.
- Need regular and stable internet.
- Need to install the recommended software.
- Must work through the course step by step starting with the programme orientation.
- Must not plagiarise or impersonate. These are serious offences that could terminate your studentship. Plagiarism check will be used to run all your submissions.
- Must do all the assessments following given instructions.
- Must create time daily to attend to your study.

FACILITATION

There will be two forms of facilitation – synchronous and asynchronous. The synchronous will be held through video conferencing according to weekly schedule. During the synchronous facilitation:

- There will be one hour of online real time contact per week making a total of 11 hours for eleven weeks of study time.
- At the end of each video conferencing, the video may be uploaded for view at your pace.
- You are to read the course material and do other assignments as may be given before video conferencing time.
- The facilitator will concentrate on main themes.
- The facilitator will take you through the course guide in the first lecture at the start date of facilitation

For the asynchronous facilitation, your facilitator will:

- Present the theme for the week.
- Direct and summarise forum discussions.
- Coordinate activities in the platform.
- Score and grade activities when need be.
- Support you to learn. In this regard personal mails may be sent.

- Send you instructional videos and audio lectures, and podcasts if need be.

Read all the comments and notes of your facilitator especially on your assignments, participate in forum discussions. This will give you opportunity to socialise with others in the course and build your skill for teamwork. You can raise any challenge encountered during your study. To gain the maximum benefit from course facilitation, prepare a list of questions before the synchronous session. You will learn a lot from participating actively in the discussions.

Finally, respond to the questionnaire. This will help RETRIDOL to know your areas of challenges and how to improve on them for the review of the course materials and lectures.

LEARNER SUPPORT

You will receive the following support:

- Technical Support: There will be contact number(s), email address and chatbot on the Learning Management System where you can chat or send message to get assistance and guidance any time during the course.

- 24/7 communication: You can send personal mail to your facilitator and the centre at any time of the day. You will receive answer to you mails within 24 hours. There is also opportunity for personal or group chats at any time of the day with those that are online.

- You will receive guidance and feedback on your assessments, academic progress, and receive help to resolve challenges facing your stuides.

MAIN COURSE

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MODULE 1 ODL COURSE MATERIAL

UNIT 1 ODL COURSE MATERIAL

CONTENTS

1.0 INTRODUCTION

It is important we start reading this text by refreshing memories of what ODL is. Open Distance learning combines two forms of education – Open Education and Distance Education. Both forms focus on expanding access to learning. There are two factors that characterise Open and Distance Learning. These include:

1. Its philosophy (i.e. philosophy of Open and Distance Learning, which aims to:
   remove barriers to education
   (a) allow students to study what they want, when they want and where they want. In summary, ODL is about increasing access and increasing educational choice.
2. ODL System typically use technology to mediate learning, for example:

   (a) printed workbooks
   (b) audio cassettes/videos
   (c) radio
   (d) the web.

There are several variants of ODL that exist and are presented below:

(a) Correspondent Course; where students study for professional qualifications and degrees,
(b) Interactive radio instructions; where classroom-based pupils learn from studio-based teachers,
(c) Open learning systems using workbooks, study centres and online conferencing to enable working adults to gain school leaving qualifications.

(e) Web-based courses to upgrade persons without their having to leave their work places.

Terminologies

In the course of this course, you will come across terms; used in ODL and instructional designs (course materials).

(a) Learner: Anyone who will learn from the materials that is designed for the course. Some learners are registered as students; others are not students.
(b) Any learner who is using ODL materials and is registered for support and assessment with an educational institution.
(c) Learning Aim: The performance expected from learners once they have completed a course.
(d) Learning Objectives/Intended outcomes: a specific piece of learning that learners are expected to achieve as a result of studying a small part of a course.
(e) ODL Course: the total offering to students studying by ODL – thus an ODL course include learning materials, tutorials support, assessment, administration and so on.
(f) ODL Course Materials: The Learning materials for an ODL Course.
(g) Wrap-round Materials: a set of materials (in any medium designed to make some other set of materials (e.g. textbook) more accessible to ODL learners.

2.0 OBJECTIVES

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

- state the philosophy of open and distance learning.
- list different variants of the open and distance learning
- describe the structure of a typical course material.
- list some examples of embedded materials.
- compare an ODL course material with conventional textbook.

3.0 MAIN CONTENT

3.1 ODL Course Material: What is it?

We would want to approach the question by looking at an ODL course material as any text, video, material in CD, which is produced with the sole objective of assisting the distance learning to study a specific assigned course. Most importantly the material is designed in such a way that it cans assist the learner who may not have the opportunity of a teacher or course facilitator in a classroom space, teaching the student. The ODL material is written in such a way that he distant learn on learn the material by himself (self-regulated).

ODL Course materials are written sometimes by individuals, but more often by small teams made up of people with skills. Such skills include:

- Curriculum designers
- Instructional designers
- Tutorial support
- Print and web designers

The bulk of what will be presented in this course will focus on the instructional designer inputs.

There are four principal ways in which course materials or instructional materials can be produced. These may include:

(1) They can be produced by an instructional designer, who is the content provider and writer,
(2) They may be produced by an instructional designer who omissions free-lance content providers to write the material,
(3) The can also be provided by an instructional textbooks provided by the teacher traditional textbooks provided by the teacher.
(4) They can be produced by a team of people who include content providers, instructional designers, and specialists like audio and video producers.

SELF-ASSESSMENT EXERCISE

i. What do you understand by ODL Course material?
ii. List 4 principal ways in which ODL course materials can be produced.

3.2 The Structure of ODL Materials

If you take a look at a random sample of ODL course materials, you are likely to be struck by how different they look from traditional textbooks. You will notice four things that stand out:

(i) the wide range of learning devices
(ii) the relatively low proportion of text compared to learning devices
(iii) that space that is often provided for learners to write their answers in, and
(iv) the layout overall that is generous.

SELF-ASSESSMENT EXERCISE

i. What are the characteristics of Open and Distance Learning?
ii. List 4 variant of Open and Distance Learning (ODL)
iii. How would you define the following: learning, students, learning aim, ODL Course?

The example below presents the above features;

Example 1: Sample of an ODL Text

Edu 423: *Overview of Measurement or Evaluation*

Module 1; Unit 1: Meaning of Terms

Test and Testing Text

Simply put, a test is a measuring tool or instrument in education. More specifically, a test is considered to be kind or class of measuring device typically used to find out something about a person. Most of the times, when you finish a lesson or lessons, in a week, your teacher gives you a test. This test is an instrument given to you by the teacher in order to obtain data on which you are judged. It is an educational common type of device which an individual completes himself or herself, the intent is to determine changes or gains resulting from lessons learnt. It may be in the form of inventory, questionnaire, opinionnaire, scales, etc.

Testing on the hand is the process of administering the test on the pupils. In other words, the process of making you or letting you take the test in order to obtain a quantitative representation of the cognitive or non-cognitive traits you possess is called testing. Thus, the instrument or tool is the test and the process of administering the test is testing.

SELF-ASSESSMENT EXERCISE

i. What is the major difference between test and testing?
ii. Give an example of a test.

Example 2: Sample of an ODL Text

Unit 1: Topic 2

Animal Group	**Main features that adapt organism to its environment**
Mammals	Mammals have their hair for insulation. Many mammals have sweat glands for temperature regulation. The females carry the developing young in the womb during pregnancy and have mammary glands which produce mild, for feeding (sucking) the young after birth. The parent care for the young until they become self-supporting.

Self-Check

1. Read through the following passage and complete it by adding the most suitable word or words in the spaces.

   A moth is an …….. because it does not have backbone, and an arthropod because it has limbs and an ……. skeleton. A moth is an insect because it has ……. legs, two pairs of ……. and …… body regions. It differs from an arachnid, such as a …….. because arachnids have ……. of legs.

2. Why is dolphin classified as a mammal but haddock classified as fish?

Review
In this topic you have found out about the way animals are classified. You have learnt the characteristics of each main group. You will probably have observed at least one real animal for yourself, and will have been able to identified some of these characteristics.

Answers to Activities

Activity 1

We hope you have been able to discover the following information:

1. Sparrow, vertebrate, bird (feathers, wings, beak, hard-shelled egg).

2. Woodlouse, invertebrate, arthropod (exoskeleton, segmented body, jointed limbs), insect, (three body segments, three pairs of legs).
3. elephants: Vertebrates, mammal (hair, pregnancies, mammary glands to suckle young).
4. Beetle: Invertebrate, arthropod (exoskeleton, segmented body, jointed limbs), insect (three body segment, three pairs of legs).

Self-Check Answers

1. Invertebrate, jointed, exo; three pairs, wings, three, spider/scorpion/tick/mite, four pairs.
2. a dolphin has pregnancies and suckle the young via mammary glands, a fish does not do this and has a scaly skin, gills and fins.

3.2 Embedded Devices

In *section 3.2*, one of the four major things that stand out in a typical ODL course materials is learning devices. It was Martens (1998) that fashioned the term embedded devices to describe all the devices that instructional designers include in their materials.

The most common embedded materials include@

- learning objectives
- test of prior knowledge
- advance organisers
- activities
- feedback to activities
- examples
- self-tests
- summaries and lists of key points
- study tips
- animations (in materials)
- hypertext links (in electronic materials)

We will see why these devices are necessary in typical ODL materials as we discuss theories of instructional design. We will note especially that the cognitive approach to instructional design stresses the use of learning devices such as:

- learning objectives
- tasks broken down into small steps
- learners assessed against stated objectives
- a wide variety of tasks but with the scope of the stated objectives
- Materials 'chunked' into small, meaningful pieces
- Mnemonics used to aid memory
- Advance organisers used to help learners see the structure of the topic and
- Simplification of the real world.

3.2.2 Space for Learners' Answers

It is common place to provide answer spaces in ODL text materials, reflecting the widespread teacher belief that this encourages learners to complete activities. Lockwood reported a report a research by Henderson (1993) which found that questions without answer spaces were answered by 40% of learners, but the same questions with answer spaces were answered by 90% of learners.

3.2.3 The Generous Layout

- Writer on ODL instructional design repeatedly mention the desirability of a "generous" layout and the liberal use of "white space". The comparison between typical ODL material and a typical text book is presented in the table below:

3.3 Comparison of ODL Materials and Textbooks

Table 1: Summarises a comparison between typical ODL materials and traditional textbooks.

ODL Material VS Textbook

S/N	Typical ODL Material	Typical Textbook
1	Are divided into study units, sometimes representing a week's work.	Are divided into chapters, based on topics rather that units.
2	Include a study guide on how to	Do not include study guides

	use the materials and how to study by oneself.	or study guidance.
3	Include a study tips (e.g. on note taking).	Do not include study tips.
4	Include examples.	Include examples.
5	Include diagrams and pictures.	Same.
6	Provide feedback on answers.	Do not provide feedback.
7	Include numerous activities.	Have few or no activities.
8	Are tightly structured.	Are more loosely structure.
9	Address the learner as **"You."**	Use passive language (e.g. if can be seen that or the reader will not.
10	Have generous layout, often including space for learners to write in.	Have pages filled with text, figures, tables, lists, and other graphic elements-there is no space for learners to write in.
11	Serve as an audience, the individual learner.	Serve as a dual audience; the learner and the teacher.
12	Attempt to meet all the needs of the learner.	Assume that learner has a teacher who will be able to amplify the printed text.

SELF-ASSESSMENT EXERCISE

i. List the factors that characterise Open and Distance Learning
ii. Define the following concepts as applied in Open and Distance Learning:
iii. Learning
iv. Student
v. Learning aim
vi. ODL course.

4.0 CONCLUSION

In this unit, the philosophy of open and distance learning has been explained and the various types of open and distance learning enumerated. The structure of a typical ODL course material is also highlighted. The unit ends with a comparison of an ODL course material and a typical textbook.

5.0 SUMMARY

The summary of the main points in this unit are given bellow:

- There are two factors that can characterise ODL
- These factors include:
  a. Philosophy of ODL
  b. Its depended on technology to drive process
- Many variants (types) of Open and |Distance Learning exists including correspondence, instructive radio instruction, online learning open learning system.
- ODL course material are text, videos, which are produced with the sole aim of assisting the difficult learner to study specific acquire course
- ODL course materials stand in the gap between student and classroom
- ODL course materials can be produced by curriculum designers, instructional designer, tutorial support, print and web designer
- There are 4 ways of producing ODL course materials including: 1. By instructional designer who is the content provider, commissioning free lands writers, converting convention textbooks to ODL materials by a team of writers.

6.0 TUTOR-MARKED ASSIGNMENT

1. Explain the characteristics of open and distance learning using the philosophy that guides its operation.
2. List and explain 4 variants of the open and distance learning mode of educational delivery

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UNITS 2 ODL COURSE MATERIAL DEVELOPMENT (INSTRUCTIONAL DESIGN)

CONTENTS

1.0 INTRODUCTION

This section will help us looked the theories of instructional design. We will also look at the approaches that lead to three views of what the functions of leaving materials in ODL should be and what sort of devices should be inserted in ODL material in order to promote effective learning. The instructional designer uses all of this information to fulfil his role or her role.

2.0 OBJECTIVES

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

- state what instructional design is
- list the importance of instructional designing
- explain the processes of instructional design
- explain the theories that guide instructional design
- list some functions of an instructional designer
- explain the types of instructional design.

3.0 MAIN CONTENTS

3.1 Instructional Design

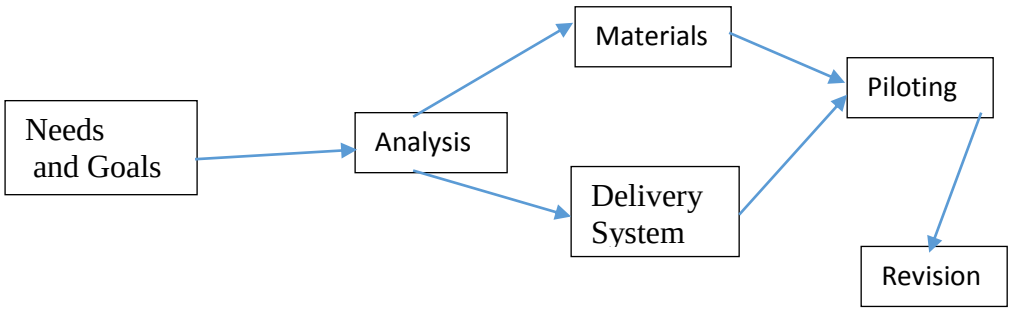
Essentially instructional design is how to design learning process. For an adult learner or a distance learner, his learning material is designed in such a manner that the material can stand in the place of the teacher, so that all that the teacher will do in the presence of the student are encapsulated in the material by the instructional designer.

This Instructional Design is the systematic development of instructional specifications using learning and instructional theories to ensure the quality of instruction.

It involves the process of analysis of learning needs and goals and the development of instructional materials and activities; and try-out and evaluation of all instructions and learner activities. According to Romiszowksi (1981), instructional is a goal-directed teaching process which is more or less pre-planned. Instructional design is thus a process that works in a systematic way to translate learners' needs and goals into successful learning.

3.1.2 Instructional Design process

Figure ( ) shows the processes an Instructional design may follow:



In a typical classroom setting, the basic resource is the teacher. He or she may use other resources such as textbooks, or audio-visual aids, but the teacher remains the central component of the system. He/she performs many functions for example:

- defines what is to be learnt
- provides information
- gives examples
- explains

- questions
- set learning tasks, both for individual and groups marks works
- answer learners' questions
- check what learners have learnt
- provides feedback to individual learners on their progress
- provides other resources (like textbooks)
- gives advise on how to use those resources
- gives study advice and
- helps with individual problems.

In distance learning, there is no teacher. The teacher is replaced by a combination of learning materials and tutors. Tutors have short (limited) time with students who may be studying at home. This presupposes that he learning materials have to carry out all the function of teacher listed above in a classroom-based situation, except marking and giving feedback. In other words, the learning materials themselves will define what the learner will learn, how to learn it, provide information, give examples and so on.

Creating materials that do all these is technical (complex) tasks. This course is meant to ease the difficulty of writing course materials

SELF-ASSESSMENT EXERCISE

i. What do you understand by Instructional Design?
ii. Why is a good Instructional Material necessary in distance learning programme?
iii. Draw the diagram of a typical Instructional Design process.

3.1.3 Theories of Instructional Design

In designing a course of instruction, Instructional designers must depend on theories of learning and instructions, which particular theory is used by a designer depends on what instruction he/she designs for what level and age. Open and Distance learning (ODL) has passed through three main phases, each based on a particular theoretical approach (COL, 2005). These approaches include:

1. The Gagne (1968) Behavioural Theory Approach which stressed that the aim of instructional design was to create a particular conditions needed for a particular type of learning conditions needed for a particular type of learning. This approach describes the conditions that a students needed for learning things such as rules concepts and problem-solving.

2. The Cognitive Learning Approach which emphasizes design based on characteristics of individual learners.

3. The Constructivist Approach (Most recent) which lays emphasises on learners' activities as the mechanism for learning (Elen and Clarebout, 2001).

Scholars today espouse more of the constructivist approach, many also believe that other theories have their place and still ca be applied in situations that demand their usage.
A new and modern approach is the Classical Instructional Design techniques. This approach is predicted on pre-determined learning outcomes, constrained and sequential instructional interactions, and criterion-referenced evaluation (Jonassen et al 1993).

In the table below, the uses of the various learning theories are summarized below:

Type of Theory	**Learning tasks to which theory is often applied**
behavioural	Role memorising, training people to do routine tasks (e.g. issue driving licences) Learning arbitrary information (e.g. irregular verbs) Learning rule systems (e.g. the rule for assessing a person social security benefits). Learning procedure where variation is not acceptable equipment).
Cognitive	Classifying. Concept Learning. Problem-solving Procedures, Reasoning and Argument. Rules.
Constructive	Case Studies Complex Situations Real-World problem-solving

Designers also build devices into their learning materials. These devices help to identify which approach the designer are using at a particular time and activity. These devises are presented in the table that follows:

Table: Learning Devises associated with each type of theory:

Type of Theory	Learning Devices Used
Behavioural	Learning objectives stated – tasks broken down into small steps. Most tasks have clear right or wrong answer Learners assessed against stated learning objectives The learning package prescribes what is to be learnt.
Cognitive	Learning objectives stated Tasks broken down into smaller pieces Learners assessed against stated learning objectives Material is chunked into small, meaningful pieces. Mnemonics are used to aid memory Advance organisers are used to help learners see the structure of the topic. Simplification of real-world situations The learning package tend to prescribe what is to be learnt.
constructivist	Learner choice of task or situation Authentic real-world situation Case studies Complexity of real-world presented in the task Collaborative learning tasks Opportunities to learn from observing others (e.g. trainee teaching as observer in the classroom) The learning package tends to be open-ended in terms of what is to be learnt. Selve evaluation rather than formal assessment.

3.1.4 Functions of Instructional Designer

There is no prescriptive list of tasks that an instructional designer carrier out in training theory into the day-to-day work, but the following are typical:

- Determine what the learners need to know (a stage often called learning needs analysis or training needs analysis)
- Develop learning outcomes
- Decide how learning will be assessed at the end of course (or during the course if the assessment is in stages)

- Allocate outcomes to the various sections of the course (usually called units)
- For each unit:
    - Decide the types of activity needed to achieve each outcome
    - Decide the examples needed to help learners learn each outcome
    - Identify any graphics needed
    - Plan any self-assessment needed for that unit.

- Write the units
- Test and evaluate the materials, and
- Revise to take account of the evaluation results.

SELF-ASSESSMENT EXERCISE

i. List common learning devices used in:
    (a) Behavioural theory
    (b) Cognitive theory
    (c) Constructive theory.
ii. Discuss the typical functions of an instructional designer.

3.2 Types of Instructional Designs

There are many ways to classify instructional design. Here we will cite the example of Rowntree (1994) which classify instructional design into:

(1) tell-and test
(2) tutorial
(3) reflective action guide

These three corresponds to the behaviourist, cognitive and constructive learning approaches respectively. The tutorial approach is mostly applied in ODL. It is important to note also that an instructional designer might use all the three approaches in one course, depending on the learning objectives to be achieved at any one point in the course.

3.2.1 Tell-And-Test

In this approach, each topic consists of a piece of explanatory test (with diagrams and examples as may be necessary), followed by a test to check whether learners have learnt the material. A course might consist of tens or hundreds of such tell-test sequences. The emphasis of the method is one memorising rather than understanding.

The obvious advantage of this type of material is that it is comparatively easy to produce and can easily be created from existing teaching notes or lecture notes. The disadvantage is that it contains almost nine of the Cognitive devises thought to be necessary by researchers for long term retention and none at all of the Constructivist devises. The overall rating is that this approach is not very effective.

Currently, ODL materials do not encourage this approach, except, regrettably in online web-based courses now on offer. Large numbers of instant online courses are simply lecture notes turned into web pages with sometimes, a set of self-test questions at the end. We do not recommend this approach.

3.2.2 Tutorial Type

The tutorial approach is characterised by the writer presenting some form of input (e.g. text, diagram, case study) and then setting an activity on it. The activity seeks to help the learner understand the material being taught. A complete unit consists of a succession of input-activity sequences. ln this way the material mimics the teacher who gives some input and then ask a question or sets a task in the classroom. Most ODL materials are based on this approach.

The tutorial model works very well when the material to be taught is a well-defined body of knowledge and methods. For example:

- foreign languages
- mathematics
- sciences
- accountancy
- medicine.

Management Sciences and creative writing are specifically very well written as tutorial because no one best way to manage and a writer must find his or her own way to write. It is worth noting that the tutorial style was developed in print ODL material. When applied to web material, one must be careful in the navigation of a web tutorial sites. The reason is that the tutorial model assumes a carefully controlled order of presentation of input, activity and feedback. If learners are allowed to freely navigate a website, the above order will be lost and so will undermine the tutorial’s structure. This can be avoided using carefully controlled hyperlinks.

Example 2: Example of a Tutorial Style of ODL Teaching

UNIT 5: UNDERSTANDING DECIMALS

Recurring decimals

Look back at your earlier work on division. You may have had problems with dividing the tray of flapjacks among certain numbers of people. When you divided it among nine people, at some point you probably thought, 'Oh, it goes on forever!' each time you divided it you had one left over.

Decimals that go on ever are called RECURRING DECIMALS.
They are written with a dot showing the recurring figure:
$0.1 = 0.1111111\ldots$
Or two dots showing the recurring part:
$0.5432 = 0.54324324\ldots$
Decimals that end are called TERMINATING DECIMALS

15. Write out the first ten figures after the decimal point in these recurring decimals. For example:

    $0.3254 = 0.3254545454\ldots$

    (a) 0.3 (b) 0.285714 (c) 3.64 (d) 7.12
    (e) 0.543 (f) 0.637 (g) 0.16 (h) 2.342

16. Write out these decimals using recurring decimals dots. For example: $1.34444\ldots. = 1.34$

    (a) 2.464646 … (b) 0.666666 … (c) 3.24444 …

    (d) 0.327327327 … (e) 0.515515515 … (f) 6.333333 …
    (g) 7.2411111 … (h) 11.11111111 …

17. Look at your table in Questions 2. Some fractions give recurring decimals and others give terminating decimals. (Notice how your calculator 'end' the recurring decimals.)

Fractions giving terminating decimals	Fractions giving recurring decimals	Fractions giving decimals that go on forever without recurring
1/5	1/3	

Source: *GCSE Maths Intermediate (National Extension College, Cambridge*

3.2.3 Reflective Action Guide

Reflective action guides take an essentially constructivist approach to material design. Such material usually aims to support learners in learning from their own experiences (e.g. at work). Typically, such materials will:

- broadly defined aims but no precise learning outcome
- Set projects
- Set tasks that require the learners to engage with others (who, for example, may be other learners or people at work)
- Encourage the learner to record and reflect on their own experience (e.g. by keeping a learning journals)
- Use case studies; and
- Set activities that are open-ended, often being based on the learners' own experiences.

3.2.4 Mixing Instructional Design types

An Instructional designer may decide to mix the types of ODL designs within a course to suit different needs. This is acceptable. The most common mix would be a combination of tutorial to cover outcomes associated with well-defined material. For example, a course on interviewing might contain some very well-defined outcomes (e.g. ones to do with how to use open and closed questions), and some material on the total experience of being an effective interviewer.

The former part might be done using a tutorial approach, and the latter might be done using reflective action guide.

3.3 Creating an ODL Material-Method

There are three basic ways of producing an ODL course. They include:

- Writing it from scratch
- Adapting an existing ODL Course
- Producing a wrap-round guide to an existing non-ODL resources such as a textbook.

A simple course may be created through the use of only one of these methods or all three employed for different parts of the course.

The real benefit of transformed materials is their flexibility. They can be added to, modified, adapted and retargeted depending on the audience (Davis and Smith, 1996). The major disadvantage of transforming

materials is the perceived uniqueness of the curriculum (Dhanarajan and Timmers, 1992).

3.3.1 Writing a New Course Material

The most compelling reason for writing new course material is when there are no existing materials (ODL or textbook) that cover the subject you need, at the level you need and in the language you need. The second probable reason to write your own course material is degree of control. Whenever you work from existing materials, you will face a range of constraints imposed by the approach, like copyright and what you can do with the materials.

3.3.2 Adapting Existing Course Materials

There are two main reasons that compels a course designer or an institution to adapt or decide not to produce an ODL Course Material from scratch. These reasons also compel designers to do a wrap-round-course. These may include:

1. **Time:** Producing a new ODL course material from scratch take a lot of tie. In well-established ODL institutions, a minimum of two years will be required to identify the need to get a new material ready (COL, 2005). In new ODL institutions a lot of training in the skill of instructional designing will be mounted for staff, including the establishment of new systems. All these takes long time.
2. **Cost:** writing ODL course materials from scratch is costly. There are many steps involved such as:

- Planning
- Writing
- Reviewing
- Revising
- Editing, and
- Piloting are labour-intensive and difficult to rush. The resulting high cost may be justifiable if the course is to be used by a large number of learners. In this case, the unit cost will be low. Anything to the contrary will defeat one of the advantages of ODL: its cost-saving potential.

3.3.3 Wrap-Round Method

A third method of producing an ODL Course is what is called Wrap-Round decision, which involves producing a guide to existing non-ODL resources such as a textbook.

3.3.4 Advantage and Disadvantages of the Various Approaches of Producing Materials

ADVANTAGES		
Write Own Materials	***Adapt other ODL Materials***	***Wrap-Round other ODL Materials or Textbook***
Complete control of content. Complete control of future use and adaptation. Can sell rights to the material to other organisation.	Faster Not so expensive as writing your own. Give access to teaching expertise not available locally.	Very fast and can be quite cheap.
DISADVANTAGES		
Takes longer time costs more.	May be restricted in the changes you can make. May be restricted on how you can use the material you produced.	May produce a clumsy learning package. You will need to revise your wrap-round every time the original material is changed. The original material may go out of print.

3.3.5 Making The Write/Adapt/Wrap-Round Decision

- The decision to write (costly and time consuming) should only come when the other options are considered unavailable.
- In adapting new material, it may be necessary to add the following devices to an existing material to meet your need. Such devices include:

- Study advice
- Activities

- Examples
- Self-tests
- Summaries
- Assessment materials
- Link to local sources
- Case studies
- Additional media elements such as audio tapes, websites etc.

3.3.6 Levels/Steps/Issues in Adapting Materials

Rowntree (1990) distinguished various levels (types) of adaptation which include:

- Badging (simply putting the name of another institution and logo on the cover of an adapted material to make it new.
- Adding local examples
- Adding new content
- Adding new media to the adapted material.

Davis and Smith (1996) listed following five steps used by designer to adapt existing ODL Materials:

- Decide on the changes needed
- Get permission to make the changes (an OER material may not need such permission)
- Make the changes
- Pilot, and
- Revise according to your taste.

There are, however, issues that can arise in adapting materials including:

- Copyright, in which the adapting institution is expected to tidy before embarking on adaptation. Open Licence materials however can be adapted be recognition of original owners without the necessity of a formal permission.
- Changes in the original version of the materials for adaption. If the originating institution updates (revises) its version of the materials, your agreement with the institution should open enough to allow you have access to those updates.

Issue of Going Out of Print:
This issue is related to Wrap-round materials. A problem may arise for an ODL material created around existing ODL material or textbook that go out of Print. If a wrap-round material has the original text updated, the wrap-round may no longer fit the new version.

Dhanarajan and Timmers, 1992 had suggested a close collaboration between the contracting parties when adapting materials.

3.3.7 Evaluation of Existing Materials for Adaption

In creating an ODL course materials, decision has to be taken, whether to write form scratch or to adapt. As in most cases, adapting an existing material is less costly and saves time. However, it is important to evaluate (assess) existing materials before adapting. The designer or an institution must:

- Choose between different available materials
- Decide what changes or additions need to be made to those materials.

In deciding of a material, you must first decide:

- Your target learner group e.g. age, sex, prior education, preferred mode of study.
- The curriculum to be taught e.g. its aims and outcomes
- The level of the course e.g. secondary school leavers, undergraduate
- The delivery language (language of instruction), and
- The delivery media.

The following evaluation checklist may help you:
- Is the content appropriate?
- What prior knowledge is assumed?
- Is the content up to date?
- Is the content accurate and authoritative?
- Is the coverage comprehensive?
- Is the language level appropriate?
- Are there plenty of activities and are they of high quality?
- Are the progress test adequate?
- Is it acceptable in terms of cost?

SELF ASSESSMENT EXERCISE.

i. What do you understand by instructional design?
ii. Why is a good instructional material necessary in a distance learning programme?
iii. Draw an annotated diagram of a typical instructional design process.

4.0 CONCLUSION

In this unit, we have explained what instructional design entails including its importance. We have also learned the process of instructional design, and the theories of instructional design. The types of instructional design and the functions of instructional designer were also highlighted.

5.0 SUMMARY

- Instructional design essentially entails how to design a learning process.
- It is defined as the systematic development of instructional specification using learning theories to ensure the quality of instructions.
- It analyses learning needs and goals and the development of instructional materials.
- Is a classroom situation the teacher determines the instructional process.
- In distance learning the instructional materials stands in the place of the teacher.
- The theories of learning that guides the development of instructional design include: the behaviourist, the cognitive and the constructivist theories.
- Scholars today espouse more of constructivism.
- The instructional designer is the one who designs the process of instruction
- He determines learners needs and developed learning outcomes etc.
- There are three ways of classifying instructional designs like, (1) tell-and-test (2) tutorial (3) reflective action guide.
- An instructional designer may deploy more than one of these ways and thus will be using mixed design type.
- There 3 basic ways of producing ODL course materials which include: (1) writing from scratch (2) adapting an existing ODL material (3) produce wrap-round guide.
- Two reasons may compel an institution to adapt material which include time, and cost.
- The course materials to be adapted must be evaluated to suit he purpose for adaption.

6.0 TUTOR-MARKED ASSIGNMENT

1. What do you understand by instructional designing?
2. Why is a good instructional material necessary in a distance learning programme?
3. Draw the diagram of a typical instructional design process.

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UNIT 3 PLANNING AN ODL COURSE

CONTENTS

1.0 INTRODUCTION

To plan an ODL Course instructional designers must be sure that all the details about the course must be planned before the course starts. That is planning make sure that:

(1) The learning materials are ready (this is because the courses are mostly based around learning materials).
(2) The profiles of the learners are ascertained.
(3) The Context issues, which looks at the circumstances under which the students will study are planned.
(4) The aims and objective of the course are well document.
(5) A thorough content analysis, which details what to include is done
(6) A course specification and guide are also planned.

2.0 OBJECTIVES

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

- identify components of learning profiling
- discuss the context under which students will effectively do their learning.
- analyze the content of a course
- write the unit of a course
- define various access devices

3.0 PLANNING ODL COURSE

3.1 Learning Profile

The starting point of planning an ODL Course is the Learner who are you planning the course for? How old will they be? What prior knowledge (education) will they have? Why do they want to study? Answers to these questions give you a picture of a typical learner for the course you are planning.

Profiling learners is important because it provides the instructional designers with data that will enable him or her to make informed judgments about key aspects of the learning materials he/she will design.

Typical content of learner profile would be:

- Literacy level
- Age group
- ITC skills
- Reasons for studying
- Home situation
- Prior knowledge (educational background
- Learning situation.

How do these help the instructional designers do their work?

Table: Summarise how an instructional designer uses learner profile data.

Types of Data	**Uses (Designer needs to know this to decide**
Level of Literacy	Level of language to use when writing
Age Group	What type of example to use? The extent to which designer can draw on learners' experience (e.g. older learners will have more experience of work).
ICT Skills	The skills you can assume learners have and which will have to be taught.
Reason for Studying	The approach and type of example to use to best motivate learners (e.g. learners studying law to become layers might be motivated by a different approach that that of learners studying law to help them as managers of small businesses.
Home Situation	Does the learner have a place to study? Does the learner have access to electricity?
Prior Knowledge	The knowledge you can assume that learners already have and the knowledge that you must teach.
Learning Situation	The sort of tasks you can set (e.g. can you set a task that may lead to going to the library).

A typical learner profile table will look like:

Category	**Examples**
Personal characteristics	- age - gender - family circumstances - work circumstances.
Reasons for studying	- To gain entry into another course - to obtain qualification - for pleasure.
Prior Knowledge	- the qualifications the learners already have - other learning they have completed - learning problems they might have (e.g. misconceptions and bad study habit)
Prior Study Skills	- experiences the learners already have of studying other than classroom - their ability to organize their own time - their note taking skills - their self-assessment skills - their ITC skills.

Study Circumstances	- their access to the library - their access to a computer and internet - their access to other learners - their ability to visit Study Centres.

SELF-ASSESSMENT EXERCISE

i. list likely components of a typical learner profile.
ii. what use can a designer put learner profile to?
iii. why is learner profiling important to designer?

3.1.2 Context Issues

In planning an ODL course, it is important to consider the following context issues:

– Where the learner will study (location)
– What resources that have access to (local centre, library, computer centre, radio, telephone, television)
– What resources can be provided to them.

These constitute context issues in instructional design. The course designer will have to make decisions regarding these. It must be noted that ODL leaners are of necessity not congregated in a single place. Some may even be working and others may study from home. They need to make out time to tackle their studies. In this regard, decisions have to be made by designers or ODL institutions to make materials accessible to students or students to access the materials at designated local study centres (the NOUN style). Sometimes also, students are assumed by designers to have access to certain resources like the library, the internet café.

The following figure illustrates how learners may access resources

Figure …….. : Levels of Access to Resources

Method of Access to resources

1. Provided as part of Course Materials
2. Assumed that students have Assess to at home
   Decreasing
   Accessibility
3. Assumed students have Access to in the
   local community
4. Provided at Study Centre.

The figure above presupposes that the instructional designer must try as much as he/she can to use materials that are most accessible to students/learners and as little as possible of items that are least accessible to learners.

Some example of possible resource requirement for a particular ODL Course may include:

- Resources provided as part of course materials e.g. workbooks, textbooks.
- Resources assumed to be accessible at home e.g. pens, paper, calculator.
- Resources assumed to be accessible in local community e.g. internet café, radio,
- Resources provided at study centre e.g. Tutorials, computers, for developing ITC skills.

A checklist of equipment that can be assumed ODL students have access to may include:

- Textbooks
- Libraries
- Computers
- Internet
- A place to study quietly
- A place to keep materials
- Study centres
- Other students
- Electricity
- Pens, paper, rulers, drawing equipment
- Calculators
- Audio tape players
- Video players
- Radio
- Television
- Tutors
- Local centres.

Role of Tutorial Support

One of the important resources listed that students/learners will have access to is the tutor. What is the role of the tutor or tutorial support to the lerner? These tutors may assist the student in:

– Correspondence (letter, e-mail)
– Marking/commenting on written work
– Telephone discussions led by tutors, including online discussion
– Tutorials
– Weekend study sessions
– Field trip
– Newsletters and newspapers
– Radio tutorials
– Self-help groups
– Social events
– Websites (e.g. bulletin boards)

To the designer, the decision is which bits of the course should be allocated to the tutors, who are usually sourced from nearby institutions of equal status. The training of these tutors in some aspect of the ODL instruction is usually not the responsibility of the designer.

3.1.3 Aims and Objectives

Before the instructional designer begins to write a material, he/she must be guided by these four ways of describing the content of a course:

1. a general description
2. a content list
3. A set of aims
4. A set of learning outcomes.

3.1.3.1 Course Aims

Aims provide the students, teachers, and other interested parties with an understanding of the most overarching general statements regarding the intended consequences of a learning experience (Fry, 1999).

Aim is a general statement of either:
(a) what the learner might learn of
(b) what the teacher will do (Rowntree, 1994)

Course aims are therefore:

– High level and generalized
– Give a sense of direction of a course
– Serve two main functions which may include:

(a) Means by which a course team sates their vision of what they want to teach,

(b) Provide means of communication the purpose of the course and justification for its creation.

Examples of statement of Aims:

1. This course will provide (give) you an understanding of ….
2. This course aims to equip you to work as …..
3. This course aims to help you critically evaluate ……

Aims are important, but they play little part in the day-to-day work of instructional designers because they are broadly expressed.

3.1.3.2 Objectives/Learning Outcomes

An objective is an intent communicated by a statement describing a proposed change in a learner – a statement of what the learner is to be like when he successfully completes a learning experience (Mager, 1962).

Learning outcomes are synonymous with objectives as these are observable character changes in the learner in the course or at the end of learning experience.

There are three levels of objectives:

– Technical (objective) level to be reached o completion of the piece of learning
– Intermediate level: this refers to particular piece of learning that needs to be achieved in order to reach the terminal (or end)
– Enabling level: Objective that is not stated in the terminal level, but needed in order to achieve it e.g. search skills will be needed by learners to see a journal article, in order to read a course, but search skill is not stated in the objective.

Examples of Learning Objective:

– By the end of this unit, you should be able to name the capital cities of South America.
– By the end of this unit, you should be able to critically evaluate a research paper.
– By the end of this unit, you should be able to solve quadratic equations by factorization.

Learning objectives can be set at unit, course or modules levels. A sample objective at the unit level is given below:

In order for us to develop a learner support strategy that liberates and encourages learners to, not only become participants in the learning dialogue, but also contribute to better society for all, you should be able to:

– Identify the need of the distance learner
– Explore the various categories of learner support
– In the light of identified needs
– Examine the concept of learning cycles
– Identify different stages in learning cycle
– Describe the various forms of support required by the learners and provided by the relevant stakeholders.

3.1.3.3 Uses of Learning Objectives

– For the instructional designer, learning objectives:

- Help him/her to choose the right media
- Create activity
- Plan self-test and assessment.

– For the tutor, learning Objectives:

- Show them what they should expect their students to be able to do
- Show them what the main points of the course are.

– For students, learning objectives:

- Help them choose a course
- Check their progress.

A typical learning objective has three components (parts) :

- Terminal behavior which is what the learners should be able to do.
- The condition: Under which the learners should be able to do it
- The criteria: For judging acceptable performance e.g. at the end of this lesson, learners should be able to cut a steel bar, using a computer controlled lathe to an accuracy of one part per thousand. Note the three parts of that objective:

    1. Terminal: Cut a steal bar
    2. Condition: Using computer controlled lathe
    3. Criteria: To an accuracy of one part per thousand.

It is advised that learning objectives should always be stated in action verbs:

SELF-ASSESSMENT EXERCISE

i. Write an example of a learning objectives and indicate the here parts.
ii. State the roles of tutorial support in planning for a typical ODL course.

3.2 Content Analysis

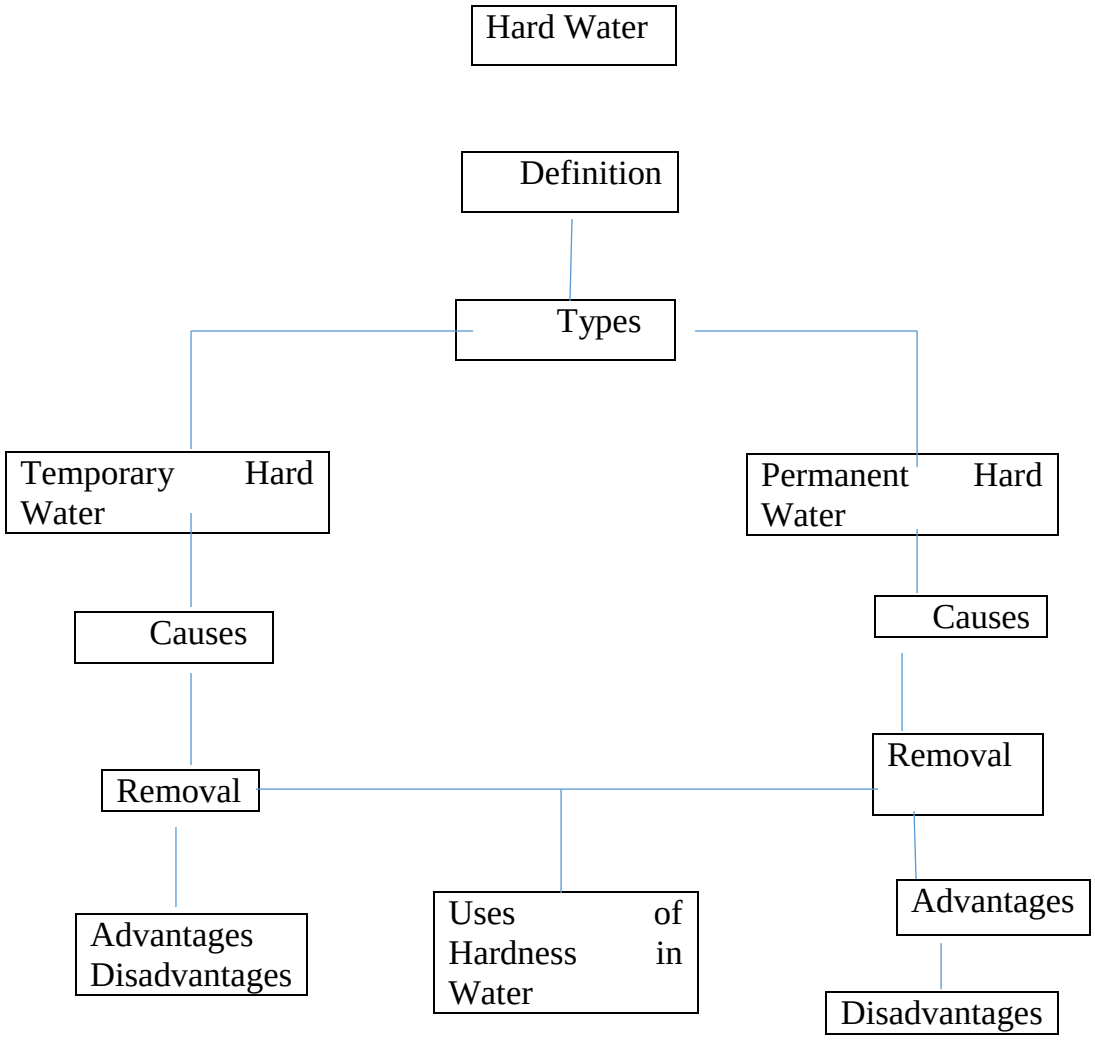
Introduction

The issues of what to include in the planning of a course is very important. Romiszowksi (1986) defined three basic approaches to planning content of a course:

- Topic- approach
- Concept-oriented approach
- Task or objective oriented approach.

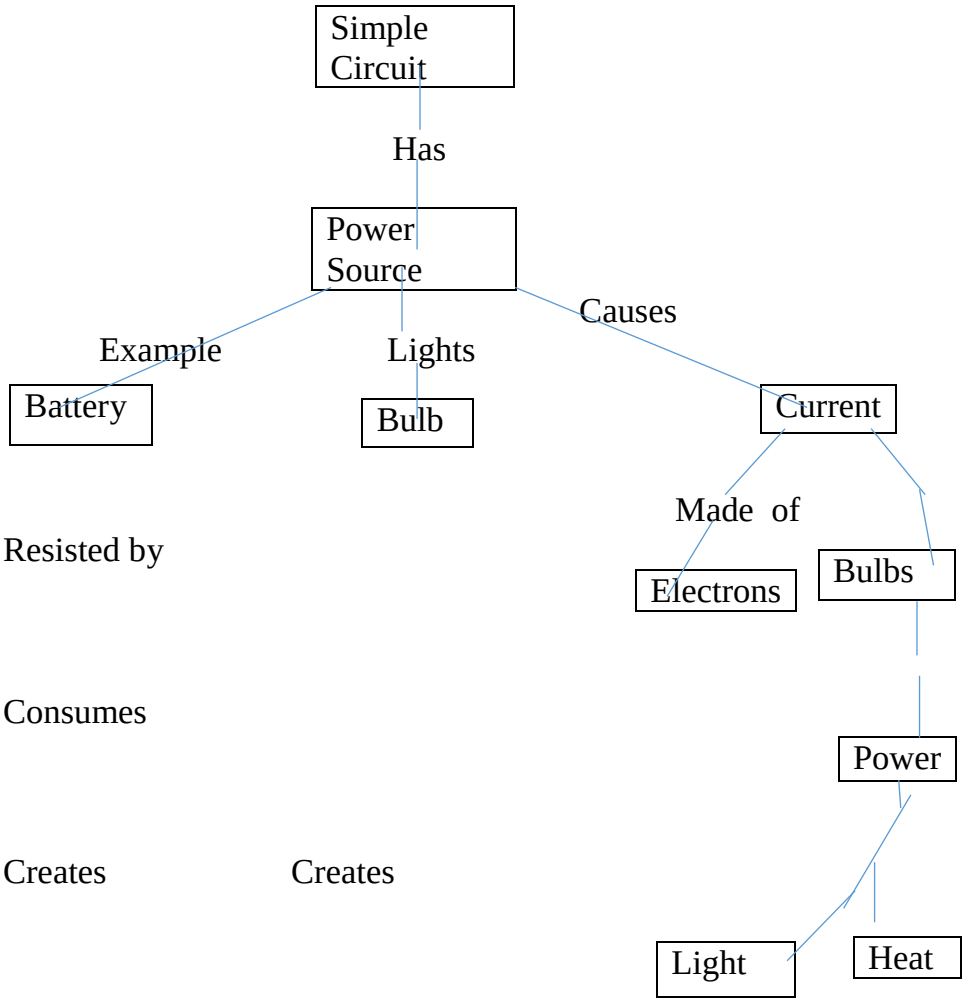
3.2.1 Topic-oriented Content Approach

In the topic-oriented approach to content, the course designer starts from the topic (Traditional Syllabus Method). Then he/she breaks down the topic into components or its associated sub-topics. Example is given below using Hardness in water:


Hard Water
Definition
Types
Temporary Hard Water
Permanent Hard Water
Causes
Causes
Removal
Removal
Advantages
Disadvantages
Uses of Hardness in Water
Advantages
Disadvantages

3.2.2 Concept-Oriented Content Approach

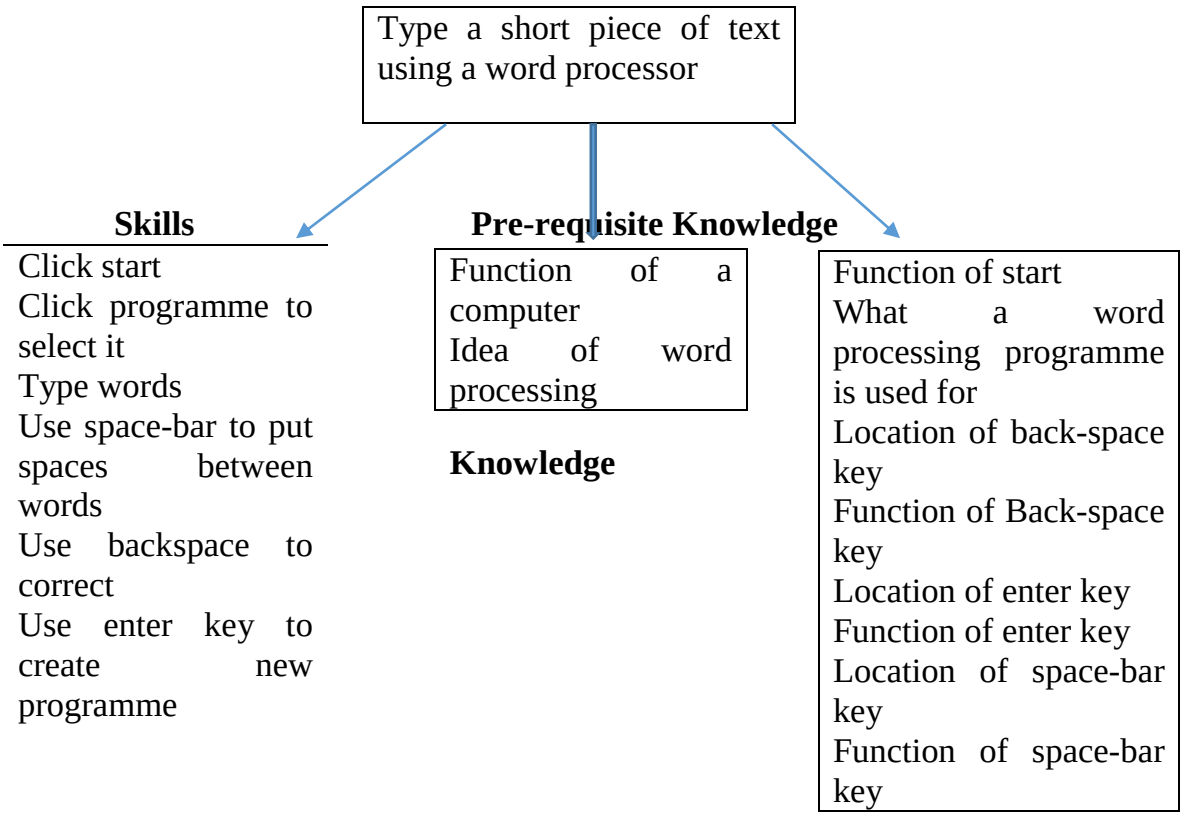
This approach is similar to the topic-oriented approach, but focuses on concepts rather than topics. It works well in concept reach subjects like the sciences. A sample of concept map is provided, with concepts each in separate box (linked by verbs or verb phrases) that show how the concepts relate to each other.
Example:



Concepts are excellent way of establishing an intellectual coherent structure to what is to be learnt. They help to clarify the relationship between the different concepts; providing an idea of teaching order.

3.3.3 Task-Oriented Content

In this approach, the instructional designer starts from the overall that the students are expected to have, and then break it down into learning objectives. Example is given below for guide:



Overall achievement here is for a student to type a short piece of text using a word processor. The objective is broken down into skills, and the knowledge needed to function in the skills box. The students already have a prerequisite knowledge of functions of computer as well as word processing.

3.2.4 Course Specification

The course Specification is the most important document to be produced during the development of a course. Its function is to define what is to be produce. It is of particular importance where there is a team of people working on a single course, because the specification helps ensure that the various specialists work in an integrated and holistic manner. A course specification might be needed in order to gain agreement by university or institutional management to offering the course, to support its contents, to validate it, and to release funds for its development.

The first step in developing a course specification is to consider who might use it and fork what purpose. This is because, apart from the

course designer, the course specification might be used by authors, support staff and finance staff. The various users of course specification and purpose are set out in the table below:

Table ……..: Main Users of Course Specification/Purpose for Users

Users	**Purpose**
Instructional Designer	As the basis for commissioning work from others (e.g. authors, designers, website creators) As the basis for managing the development of t course (e.g. financial control, project management).
Authors	As the specifications of what they will have to write, both in terms of content and instructional design format.
Support Staff	As the basis for planning the support activities for the course.
Marketing Staff	As the basis for preparing prospectus entries and other publicity.
Registry Staff	As the basis for putting the course o the computer system As the basis for accepting students into the curse
Finance Staff	For budgeting and cost control.

A typical course specification may contain the following entries:

1. **General:** Course title, course aims, learners' needs (qualifications and so on), learners' vignettes (personal circumstances), expected learning honours, and number of weeks, pre-requisite skills and knowledge assumed.

2. **Content:**
   - Learning outcomes at unit level
   - Unit titles

3. **Instructional Design**
   - Typical activities for each learning outcome.
   - Media to be used
   - Sample unit – probably the most effective way to convey to authors just how they should write.

4. **Tutorial Support**
   - Type of tutorial support to be provided (e.g. distance tutor, online tutor, and workshop)
   - Assignments to be submitted to tutors

5. **Assessment**
   - Assessment details (e.g. number of occasions when assessment will take place and the type of assessments)

6. **Development testing details**
   - Which part of the course will be tested
   - How the testing will be done

7. **Finance**
   - budget.

3.2.5 The Course Guide

Course guides (different from study guide) are devices to help learners orientate themselves to a new course and learn how to use it. Course guides also act as reference sources for use when learners have a problem with their course.

Course guides are developed for learners for the purpose of:

- to explain the aims of the course
- to outline the components and structure of the course
- to describe how to use th course
-. To provide administrative information, and
- to provide information on assessment.

A typical course guide may contain the following items:

1. an overview of the course
2. the aims of the course
3. a statement of any pre-requisite knowledge and skills that the course assumes.
4. a list of contents
5. an explanation of the structure of the course, e.g. how it is divided into.
6. a list of the various components (e.g. workbooks, cassettes, webpage) and some explanation of what they are for.
7. a course schedule with dates of key events such as exams
8. details of the support system and who to content about different problems

9. an explanation of the assignments to be submitted and the system for submitting them
10 an explanation of how to use the course (e.g. how to use activities, self-Assessment and objectives)
11. study skill advice (e.g. how to plan your time, how to make notes, how to learn from the web)

Sample Course Guide

Content
Introduction
What you will learn on this Course
Course Aims
Working through this Course
Course Materials
Study Units
Set Textbooks
Assignment File
Presentation Schedule
Assessment
Tutor-Marked Assignments (TMAs)
Final Examination and Grading
Course Marking Schedule
How to get the most from this Course
Tutor and Tutorials
Summary

Open University of Nigeria (NOUN).

3.3 Planning (Writing a Unit of Learning)

Introduction

Most ODL courses, the content are subdivided into units. In print each unit is like a chapter of a book. Once the content has been allocated into units, the units have to be turned into units of learning. In textbooks this would simply take the form of expository material, on ODL, content include: activities, examples, feedback, self-assessment, summaries etc.

In National Open University (NOUN) , course materials, the courses are divided into Modules. Each Module is subdivided into units. In each unit, the following three stages are observed:

- Explain what the session will be about (introduction and objective)
- Conduct the session (main content)
- Remind learners what the session was about and check if they have learnt it (summary, exercise and feedback).

3.3.1 Structure of a Unit of Learning

Every unit of Learning has a three-part structure:
- Explain what the session is all about (introduction)

This normally takes the form of:

(1) Expository
(2) Comparative:

Reminding learners what they previously know which will help them to understand the new thing to learn.

- Conduct the Session, involving:
  (1) state the topic(s)
  (2) state the objectives
  (3) Write the main content.

- Stage 111: Remind the learners what the session was about (a recap) and check that they have learnt (formative evaluation). Do the following:

1. summarize the main points
2. conduct exercises
3. receive feedbacks

Typically, the components of the unit of learning may take the form:

Introduction:
1. Unit number and tittle
2. Statement of introduction
3. Content list
4. Statement of pre-requisite knowledge or pre-test (set induction).
5. Learning objectives for the unit
6. List of any equipment to use for the unit
7. Other resources need
8. Time required.

Teaching activities
The teaching activities will involve:
(1) Examples
(2) Explanatory notes
(3) Teacher/students activities and feedback
(4) Diagram and illustrations
(5) Topic summary.

Closing Activity involving:
(1) Unit Summary
(2) Self-test based on the Unit of Learning
(3) Objectives
(4) Link-forward to the next Unit.

3.3.2 Writing Activities

Learning activities are the most important part of unit of learning. Learning activities keep learners purposely engaged with the instructional materials. If they are removed, learners will resort to memorizing the text.

The need for a high level of activity is a problem for instructional designers of print and web materials since both media are essentially passive.

Learning activities can also be called:

(a) In-text questions
(b) Self-assessment questions.

In-text questions are meant for formative assessment of learning, as distinct from self-assessment question which is at the end of a uit, and function as summative assessment.

Types of Activities
There are very little agreements among researchers over how best to classify activities. However, Rowntree (1990) listed the following five types of activities:

(1) Report own observations,
(2) Restate facts, principle etc.
(3) Distinguish between examples of concepts and principles
(4) Give own examples and
(5) Apply new concepts and principles

The Indira Ghandi national Open University (IGNOU) also presented a more sophisticated Taxonomy of activities, shown below:

Taxonomy of Activities (IGNOU)
Types apart, the question is how many activities are need in learning unit? The following suggestions are made:
- Every learning outcome should have an activity
- Most learning outcomes should have activity

- Learning outcomes that have more than ten or so activities are perhaps too large and should be splitted into similar outcome.

It is better to have too many activities than to have few. Most instructional designers have favoured activities like:

- Report on own observation or experience
- Recall what has been taught
- Give or explain examples
- Give examples from own experience
- Apply new concepts or principles.

Activity tasks may include:

1. Short answer tasks
2. An extended answer task
3. A true-false task
4. A multiple choice task
5. A matching task
6. A full-in-the-blank task
7. A put in order task
8. A complete the graph/diagram/table task
9. A create something task
10. A collect data task.

SELF ASSESSMENT EXCERCISE

i. What does the planning accomplish for a course writer?
ii. What content issues would be analyzed before a writer commits to writing a course material?
iii. State the uses of Learning objectives (outcomes) for the following:
   (a) The instructional designer
   (b) The course tutor
   (c) The student.

4.0 CONCLUSION

The essential features of planning an ODL course were the focus of this unit. Thus the unit highlights the components of a learning profiling, discussed the context under which students do their learning, analyzed the content issues in a course, demonstrates how to write a unit of a course and lists various access devices.

5.0 SUMMARY

- An ODL course materials is made up of several units in a module
- A unit of a course is properly planned
- The starting point of unit planning is to determine learner profile.
- The learners profile is an important document needed by the instructional designer
- Context issues that are important for unit planning include (1) locations of study for the learner (2) what resources do learners have access to (3) what resources can learner be provided.
- The tutor is an important resource which learners/student must have access to.
- The content of a course is described in four ways, namely (1) general course description (2) content list, (3) a set of aims, (4) a set of learning outcomes.
- The aims provide the students, teachers and other interested parties with the understanding of the most overarching general statements regarding the intended consequences of a learning experience.
- Limit objective or learning outcomes is an intent communicated by a student describing a proposed change in a learners- what the learner will be like when he successfully complete a learning experience.
- There are three levels of learning objectives or outcomes- terminal, intermediate and enabling.
- The are three components of a typical learning objectives- terminal behaviour, the condition and the criteria.
- There are three approaches to content

Analysis-topic
- oriented approach,
- concept oriented approach
- Task or objective oriented approach
- A course specification functions to define what is to be produced.
- A unit of a course has the following structure.

a. Expository
b. Conduct the session
c. Remind the learners what the session is about.

- There are several types of activities in a unit of a course which may include:

Report on observation (2) Restate facts (3) distinguish between examples of concepts (4) give own examples (5) apply new concepts.

6.0 TUTOR MARKED ASSIGNMENT

1. List likely components of a typical learner profile.
2. Write an example of a learning objective and indicate the **three** parts.
3. State the role of typical tutorial support in planning for a typical ODL Course.

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UNIT 4 ASSESSMENT IN ODL COURSE MATERIALS

CONTENTS

1.0 INTRODUCTION

Assessment is important in both ODL and the traditional face-to-face (f2f) methods. One important difficulty with assessment in ODL is that OCL students can be assessed without being observed. In-test assessments are important in ODL because of the limited time for student-tutor contact. This unit will highlight the types of assessments in instructional materials, quality of such assessments, planning and writing self-assessment tests, planning and writing tutor-marked assignments (TMAs).

2.0 OBJECTIVES

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

- list the main types of assessments used in instructional materials
- explain what is meant by formative, summative assessments.
- define validity
- define reliability
- explain how to determine validity and reliability.

Assessment is important in instructional designs because:

- Decisions on what to teach, and to what depth are embedded in the assessment plan,

- Most students are assessment focused; they look forward to what is to be assessed.

The instructional designer therefore, will ask the following fundamental questions:

- How can learners' need for formative assessment b met?
- How can designers make sure that assessment is valid and reliable?
- What should be the balance between continuous and final assessment?
- Distinguish between continuous and final assessment
- Write a sample of self-assessment
- Write a sample of tutor-marked assignment.

3.0 MAIN CONTENT

3.1 Types of Assessment

3.1.1 Formative Assessment

Formative assessment comprises all those activities designed to motivate, to enhance understanding and to provide learners with an indication of their progress (Morgan ad O'Reilly, 1999). Formative assessment often takes place informally in the classroom as the teacher asks questions, respond to learners' questions, and walks around giving advice. It is usually informal, unplanned actions by the teacher, but they are important for everyday teaching-learning situations.

In the ODL (when there is no facilitator), there is almost no opportunity for any formal interchange, since learners and tutors rarely meet. This means that formative assessment must be consciously designed into the learning materials. This can be done using devise such as:

In-text questions
Activities
Self-assessment tests.
Quizzes

These devises formats of assessment in ODL materials and they are very important. Without them, leaners have little ideas as to how much progress they are achieving and may be unaware of any mistakes they are making. Formative assessment methods in ODL include:

- Activities and their feedback
- Self-assessment tests (print, online)

- Non-assessable tutor-marked assignments and their feedbacks and
- Comments from peers in group work, both face-to-face and online.

SELF-ASSESSMENT EXERCISE

i. List some formative assessment methods used by instructional designers
ii. Why are in-text questions, activities, and self-assessment test important in ODL course material?

3.1.2 Summative Assessment

Just as in traditional face-to-face method, summative assessment is also provided in ODL institutions. On each course in order to:

- Inform students (learners) of the standard they have achieved,
- Find out whether the course is effectively reaching its aims,
- certify to third parties (e.g. employer) the level of knowledge that each student has reached, and
- make decisions about students' eligibility for further courses.

Summative assessment always carried out against the stated aims and objectives of the course, and which answers the question "to what extent have the learners met the stated aims and objectives of the course, may take the form of:

- Tutor-marked assignments
- Marked assignments
- Course work, and
- Exams (e.g. end of semester exams)

3.3 Validity of and Reliability of Assessment

1.3.1 Validity of Assessment

Validity refers to the extent to which a given assessment method assesses what it is meant to assess. For example, if a course contains learning aim "to be able to conduct a simple conversation in French or Hausa", a written exam I French of Hausa would not be skills, not speaking skills as stated in the aim.

Generally, validity is a problem in all education, since the classroom environment limits what can be taught and what can be assessed. You will easily aggress that, for example, business course concentrate on

discussion and writing about business and not on running businesses, and teacher training courses concentrate on theorizing and writing about education, not on teaching. As a result, most assessment tends to lack validity. Unfortunately, the constraints under which ODL often operates also create problems of validity in ODL assessment. In ODL, operators tend to assess what is practicable to assess, rather than what should be assessed.

It is important to strive for validity as far as possible. One way to do this is to ensure that the assessment method matched the active verb i the learning outcome. Example is given below for a first-aid example in health science course:

1. **Describe** the ABC procedure for resuscitation a patient.
2. **Explain** the ABE procedure for resuscitation a patient.
3. **Use** the ABC procedure for resuscitation a patient.

The action verbs in each case (bold case) are at three different Bloom levels (knowledge, comprehensions, and application) and so require different assessment methods, if they are to be validly assessed, as shown below:

Table ……. Matching Test Item to the Desired Bloom Level

Outcome	**Assessment Method**
Describe ABC	Ask for a verbal or written description of ABC procedures.
Explain the ABC Procedure	Ask for a verbal or written explanation of the ABC procedure.
Use the ABC Procedure	Ask the student to stimulate the ABC procedure on a dummy.

3.3.2 Reliability

Reliability simply refers to the idea that, if a person is assess on more than one occasion, the outcome should be the same. A sort of score repetition for a series of test on the same objectives. In that case, we describe the scores as consistent.

In practice, there are always variations in assessment outcomes. Learners perform differently on different days, different teachers give different scores, and learners' performances may be influenced by the type of test used.

These variations can be reduced by applying the following procedures:

1. Have more than one assessment. Three assessment for example, are much more reliable that one.
2. Spread the assessment over time
3. Use more than one assessment method. Some learners do better with certain methods.

SELF-ASSESSMENT EXERCISE

1. How will you define the terms:

(a) Validity
(b) Reliability

2. Why would course designers strive to ensure that their in-text questions are valid and reliable.

3.1.4 Continuous Versus Final Assessment

It is left with the instructional designer, course tutors and institutions, whether to use several (continuous) assessments or just one final assessment. We have made a case above that several assessments increases reliability, as that is one argument in favour of continuous assessment. Other arguments in favour of continuous assessment are provided in table …. below:

Table ….. Comparison Between Continuous and Final Assessment

	Advantages	**Disadvantages**
Continuous Assessment	Encourages course designer to plan a build-up skill Helps students consolidate what they learnt Helps students reflect on their progress May be less stressful for student More reliable	May be more costly Requires more organization Require more record keeping May lead to fragmentation of curriculum May lead to over-assessing lower level objectives.

Final Assessment	Students can relax more while taking their course. They are not repentedly being assessed. Students have to reflect and consolidate material before being assessed. Assessment is whole course rather than topic based. Simpler to organized.	Stressful for some students One assessment is less reliable measure of learning than several assessment.

3.2 Planning and Writing a Self-Assessment

Self-Assessment is not of much importance in the face-to-face teaching, but very important in ODL. In the classroom, like we noted before, learners have many opportunities to informally measure their progress: they w question from teachers, they ask and get responses from teachers, they do short test, even oral tests, they hear discussion of problems raised by learners. On the other hand, there are fewer opportunities available to ODL students to assess their own progress. At the same time, learner-tutor contact is necessarily limited. Thus ODL students generally have insufficient means to judge their own progress. Self-assessment tests are one means of making up for this deficiency. Generally, self-assessment test covers one unit of the course, and each test is aimed at:

- provide learners with summative feedback on their learning of that section,
- Help learners identify any errors and misunderstandings they may have, and
- Provide learners with advice on additional (remedial) study to deal with those errors.

And so for instructional designers, the following question can guide their writing self-assessment into learning materials:

- What method can I sue to build self-assessment into the learning materials?
- What should the self-assessment test?
- What type of question should I build into the ODL courses?

3.2.1 Format of self-Assessment Test

A good self-assessment test:
- Takes the minimum amount of time necessary to give the learners a clear picture of their progress.
- Tests as much of the content of the section as possible.
- is of a reasonable length in comparison with the length of the study section.
- uses questions that are diagnostic in character, and
- provide feedback on correct answers and likely wrong answers.

3.2.1 Steps in Writing Test Questions

1. Start with an idea for the question
2. Write down the answer that you expect
3. Use the answer to help you write a question that requires the answer that you want.
4. Write down the common mistakes you expect students to make.
5. Write the feedback to those common mistakes.

By writing down the answer (step 2) before you write the question, you will be better able to choose the right wording for the question.

3.2.3 Guides for Planning/Writing Assessment

The instructional designers are guided by the following in planning and Writing Assessment:

(a) How many assessments will do?
(b) What type of assessments?
(c) How long should the assessment de?
(d) How long will it take teachers to mark?
(e) When should the assessment take place?
(f) Does the assessment cover course aim and outcomes?

3.3 Planning and Writing Tutor-Marked Assignments (TMAs)

Tutor-Marked Assignments (TMAs) are commonly used as shorthand for any piece of work that the tutor responds to. That piece of work may or may not be accessed.

The tutor-Marked Assignments serve the following purposes:
- help learners to identify the most important parts of the course,
- help learners to see the standard of work that is expected on the course if marked formally,

- Contribute to the overall assessment; if marked summatively,
- Provide an opportunity for tutor-learner dialogue,
- Provide detailed and prsonalised feedback to learners,
- help learners relate what they are learning to their own situation.
- Help pale learners through the course.

In writing the assignments designers must bear in mind that, an assignment normally consist of one or more questions or tasks, Race (1992) and Rowntree (1990) have suggested the following as guideline that can help produce appropriate set of questions/tasks for tutor-marked assignments:

1. Make the task clear by specifying the required format fo the answer (e.g. bullet list, essay, table, diagram)
2. Choose tasks that provide good opportunities for giving feedback to learners.
3. Make sure that every learner will be able to do at least one question well.
4. Use active verbs in the task. These help give students a clear idea of the type of response that tutors want.
5. Ensure that the selection of questions and tasks provide good coverage of the section of learning covered by the assignment
6. Check that the sort of task required in the assignment has been adequately prepared for in the activities – and if it is not, adjust the activities.
7. Consider whether you want the assignment to reflect the sort of task and the standard of tasks that will be set in the final examination.
8. Consider having a special examination – practice assignments towards the end of course.
9. Tell learners what the marking criteria for each question.
10. Provide model answers.

SELF-ASSESSMENT EXERCISE

i. How would you define the terms:
(a) Validity
(b) Reliability

ii. Why would instructional designers strive to ensure that their in-text questions are:
(a) Valid
(b) Reliable
iii. List two major types of assessment that are needed in ODL system.

4.0 CONCLUSION

In this unit, we have listed and explained the types of assessment used in instructional materials including the definitions for validity and reliability. How to determine validity and reliability were also discussed.

5.0 SUMMARY

In this Unit, the following points were stressed and recapped here for your case of recall:

- Two main types of assessment: Formative and Summative assessments were discussed.
- Formative comprises all the activities designed to motivate, to enhance understanding and to provide learners with an indication of their progress.
- In the ODL, where opportunity for teacher-learner interaction is limited, activities built into the course units serve for formative assessment.
- They may include in-text questions, activities and self-assessment test, quizzes.
- Summative assessments take the form of end end of course or end of unit tests.
- They are provided by institutions or course tutors.
- They are always carried out against the stated objectives and aim of the course.
- Takes the form of tutor-marked assignment, computer-marked assignments, course work and end of semester exams.
- Validity and reliability of tests and assignments are very important aspects of instructional materials.
- Most educational process question in the face-to-face and ODL have problem of validity.
- Effort must be made to solve this problem.
- Reliability simply refers to the idea that if a person is assessed on more than one occasion, the outcome should be the same on the same or similar test.
- The variations that may be observed in the reliability scores can be minimized by using several test instead of one.
- That is why continuous assessment is preferred to one final assessment
- Self-assessment tests are one important means an ODL student use in limiting the deficiency of non-interaction with teachers.
- They must be properly harnessed by course or instructional designers
- They are formats for planning and writing self-assessment tests.

- There are several purposed served by tutor-marked assignments. The ODL course materials encourage the inclusion of tutor-marked assignments.
- Designers are encouraged to follow the Rowntree (1999) guidelines in writing tutor-marked assignments.

6.0 TUTOR-MARKED ASSIGNMENT

1. List some formative assessment methods used by instructional designers.
2. Why are in-text questions, activities and self-assessment tests important in ODL Course materials?

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MODULE 2 TECHNOLOGY ENABLE LEARNING

UNIT 1 INTRODUCTION AND STRATEGIES FOR TEL

CONTENTS

1.0 INTRODUCTION

Over the years, and especially following the development of the internet in the 1990s, technology has played significant role in the teaching-learning environment. Not only are information concerning certain phenomenon quickly access from the internet, textbooks have been easily obtained from the used of information and communication Technology (ICT) particularly. The inception of the World Wide Web (www) in 1995 had also improved on the gains of ICT, and impacted on learning. It is also worth mention, the role of computers, application software, interactive whiteboards, digital cameras, digital recorders, projectors, and other technologies in enhancing learning. One can say without equivocation, that there has been considerable increase and growth adoption of technology within educational institutions, for both distance and on-campus teaching and learning. In most advance countries of the western world, "digital learning environment" are now almost ubiquitous, and their use by teachers and students can no longer be considered a novelty or the domain of enthusiasts alone (COL, 2016).

The trend is also fast improving in Nigeria. Every secondary and university student has on his/her hands smart phones, laptop, tablet or one technology gadget or the other to aid learning. We are indeed in the digital age and in the "4th Industrial Revolution." ICT has come to stay in Education, and ICT in education would mean Teaching and Learning with ICT.

In Module 2, we will try to look at how technology has enhanced (enabled) learning the teachers' role in this, institutional policies and strategies to adopt TEL, and other related issues.

2.0 OBJECTIVES

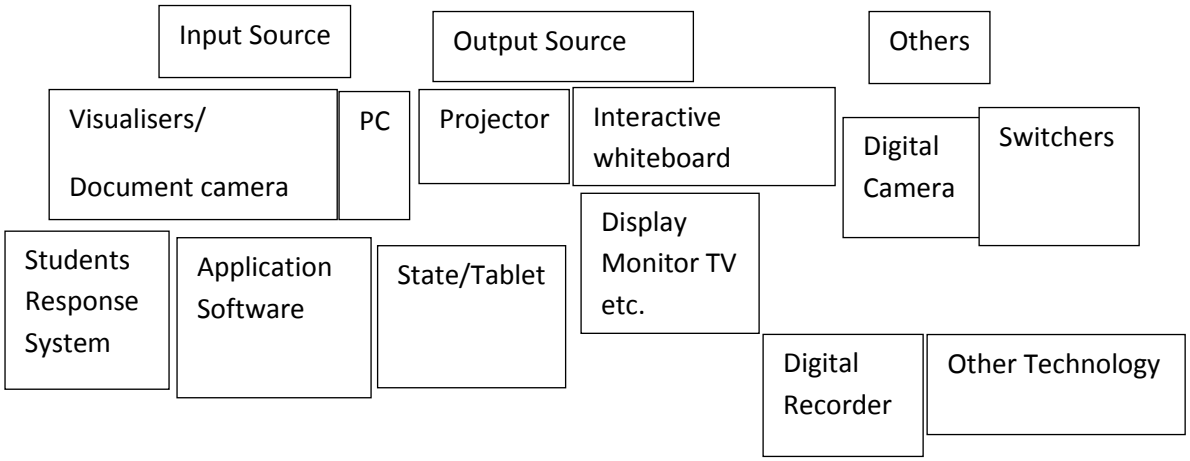
By the end of this unit, students (learners) should be able to:

- define technology enabled Learning (TEL)
- State some benefits of TEL
- State some aims and goals for institutional TEL adoption and needs
- explain the roles of teachers as agents
- enumerates instructional strategies for TEL

3.0 MAIN CONTENT

3.1 Technology Enabled Leaning Definition

COL (2016, defined Technology Enabled Learning as "the application of some form of digital technology to teaching and/or learning in an educational context., whether the "Context' is formal or non-formal, what is important, and emphasized is that there is an intention for learning to result from the human-technology interaction. It is important to recall here that teaching has involved the use of teaching aid (pictures, drawings, sketches, life objects etc.), which are believed to aid the teacher in lesson delivery, and the students in understanding. This observation has been there for decades. The present concept (TEL) has been favoured by the development of the internet in the 1990s and the inception of the World Wide Web (www) in 1995. The internet and the www have ensured considerable growth in the adoption of technology within educational institutions, whether the distance or on-campus teaching and learning. Such technologies may come in three categories:



There are different terms that are related to using digital technology to aid teaching and learning in formal or non-formal education. Each term describes particular characteristics of the phenomenon; examples include: computer-based learning, network learning, e-learning and technology enhanced learning (more recent). Technology enhanced learning suggests that technology can enhance learning in some way. The concern of practitioners should be how the enhancement of learning by technology benefits learners. We favour the term 'technology Enabled Learning (TEL), which clearly describes the use of technology to support students' learning. Using this term makes it possible to avoid potential ambiguities and differing interpretations of the process. The word enabled refers to facilitation; meaning that learning is made possible (facilitated) by the use of technology. Technology Enable learning is just about making learning possible, whether that means different ways of serving existing learners or potentially, providing opportunities for learners who were previously regarded as being "out of reach" – that is those learners who typically have little access or none to educational opportunities because of a variety of circumstances.

3.1.2 Benefits of Adopting TEL

It is believed that institutions, teachers, and learners can benefit from adopting TEL. benefits also depend on institutional policies, teachers' commitments and learners access to relevant technologies etc. generally, adopting TEL can result in the following benefits:

1. Increasing technology use by students I preparation for their world of work. Results in developing familiarity and skills.
2. Achieving financial benefits for institution e.g. increasing students' enrolment, reaching new target audiences etc.
3. Increasing accessibility for students who would not be able to attend conventional classroom sessions (due to location, disability, or work/domestic commitments).

4. Changing the environment in which educational activities can be undertaken to increase flexibility for students in terms of where, when and how they study.
5. TEL provides students with additional opportunities to communicate with teachers, support staff and fellow students.
6. Enables students to become self-directed learners.
7. TEL ensures greater consistency in the quality of teaching and availability of resources.
8. It increases flexibility of teachers in terms of where and when they undertake their teaching and assessment activities.
9. Enables feedback on learning activities and assignments to be provided more rapidly to students.
10. TEL improves teaching practices of academic staff (e.g. increasing learner engagement t active, student centred learning.
11. It is also believed that TEL enhances quantitative improvement in student learning outcomes (i.e. higher marks or grades achieved). It also enhances deeper understanding, conceptual development, and better application of knowledge to real-world situations.

3.1.3 Needs for Institutional Aims or Goals:

Individuals and institutions use TEL. this presupposes that just as it is important for individual teachers to have a clear rationale for using TEL, it is also important for institutions to specify a coherent (easy to understand) set of aims or goals that they hope to achieve by using TEL.

Institutions should not just state that they are adopting TEL because "it improves the students experience "or enhance students learning."

What actually do these statements (imprecise as they are), actually mean? Institutions should consider and state what they want to achieve through the use of TEL. Now, let us look at some statements of aims of institutions adopting TEL:

- Increasing the international reach of the university (college) etc. by offering course that can be taken by learners anywhere in the world (e.g. MOOCs massive Open Online Course).
- Helping students in remote hilly places to access learning by increasing flexibility for students in order to attract group of learners who are difficult to reach.
- Using TEL we want to respond to the needs to employers and the perceived needs of current and future learners.
- offering courses in association with other institutions on a collaborative teaching or franchise-type basis.
- We adopt TEL to reduce the costs associated with processing students enquires, enrolments and registrations and assessment and examination procedures etc.

The above are sample aims for institutions for adopting TEL. there are many others, as the list is inexhaustible. Whatever reasons an institution has for implementing TEL; it needs to make explicit statements about the benefits it expects to derive for learners and teachers.

We must state from the onset that the introduction of TEL might affect multiple institutional policies and areas of activity. For example, assessment polices might need to be reviewed and amended if one aim of implementing TEL is to increase co-operative or collaborative student project work. Measures must be set to counteract plagiarism in students' work or assignments. It might involve developing students' academic practices and digital literacy skills. It might also involve redesigning assessment tasks so that they rely less or reproduction of course materials and resources.

SELF-ASSESSMENT ASSIGNMENT

i. Explain the term "Technology Enabled Leaning (TEL).
ii. List 5 benefit for institutions adopting TEL.
iii. Why is a good statement of aim important for any institution intending to implement TEL?

3.2 Teachers as Agents: Roles of Teachers in TEL

Just like in the face-to-face (f2f) learning environment, the teacher is one critical factor for the successful implementation of TEL. the ability of teachers to know why, when and how to use TEL for teaching and learning (in the best way possible) is very important. Besides, getting teachers to use TEL effectively is not a simple task. It involves very complex varieties of intrinsic and extrinsic influences. Most researches on teachers' application of TEL in teaching and learning do not tend to relate the teachers' use of TEL to how the teachers think about the process of teaching and learning, vis avis:

1. Their beliefs
2. Their practices (how they enact their belief in their teaching activities)

It must be noted that only by changing the conceptions and beliefs of the teachers, regarding teaching and learning (with or without technology) can any significant changes be made in their teaching practices. For TEL to be successfully adopted, teachers' support is important, so that they can review, reassess, and modify their conceptions of teaching and learning and come to terms with the use of technology to aid both teaching and learning. In general teachers' support can take the form of:

- Personal capacity building through research
- Adopt and adapt mindset
- Improving their passion and drive
- Critically reflect on continuous technology in education changes
- Continuous practice
- Remaining highly competent.

Many factors can determine how teachers in higher education employ technology to change their teaching practices and/or the learning practices of their students. Some of these influences include:

1. Individual differences in teachers' attitudes to the adoption of innovations (Rogers, 1995).
2. Individual differences in teachers' conceptions of and approaches to teaching (Kember & Kwan, 2000; Sammelowicz and Bain, 1992; 2001; Trigwell and Prosser, 1996).
3. The established departmental /faculty/intuitional ethos and ways of working (Hockings, 2005; Knight and Trowler, 2000; Mayes, 2005; picking, 2000).

3.2.2 Planning Institutional Strategies for TEL

TEL is an expansive project for any higher institution. It is believed that technology, ICT can influence the way we do things in modern world. It can also influence the way institutions and departments in institutions function. And in higher education, the adoption of TEL is believed, will greatly affect teaching and learning. It is pertinent then for institutions to strategies for the adoption and eventual implement of Technology Enabled Learning (TEL).

The following questions may help institutional decision making in adopting TEL:

- What proportions of the teaching staff already have some experience of using technology for teaching and learning?
- What proportion of teaching staff have expressed some interest in using TEL?
- What proportions of teaching staff have expressed some reservations about using TEL?
- What proportions of the students already have some access to computing equipment?
- What proportions of the students already have some experience of using technology for learning?
- What proportions of the students have expressed some interest in using TEL?

- What proportions of the library and academic support staff already have some experience in using TEL?
- What proportion of the library and academic support staff have expressed some interest in engaging with the adoption of TEL?
- What proportion of the senior academic mangers have engaged in discussions about the implications of implementation or expanding the use of TEL?
- What proportions of teaching spaces in the institution are equipped for TEL activities? (COL, 2016)
- What proportions of teaching spaces in the institution are suitable for TEL and associated activities?

These items (questions) can be used for an action research with the aim of establishing rough approximation of the extent to which TEL may be adopted in any institution. It can also lead to the institutional planning strategies for implementation of TEL.

3.2.3 Learning from the Experiences of Others

The volume of research on the use of technology for teaching and learning is encouraging. What is not encouraging however is the small proportion of published accounts of projects involving use of technology for teaching and learning which provide a clear indication of educational rationale and anticipated outcomes for both teachers and students involved and the institution. Since we lack this important information, it is becoming difficult for those concerned – and any other educators who might be interest – to learn any useful lessons from the experiences of others. Thus, it is reasonable to ask questions about the outcomes achieved following investment of large amount of money and time in TEL. However, most of the time, attention seems to be focused more on technology or tools involved in the project, rather than the teaching or learning processes and practices. Most times, it is just assumed that engaging in TEL is a "magic wand" for better teaching – learning outcomes.

Teachers seem to ask:

1. What can I use this technology or tool for?
2. They are supposed to ask "how can I enable my students to achieve the desired or necessary learning outcomes? Or What forms of participation or practice are enabled for learning? (Kirkwood, 2014).

It is necessary to note that the use of technology in itself is very unlikely to result in improved educational outcomes and ways of working among teachers and students. There are many other conceptual factors that exert

far mire greater influence on the process of teaching and learning. It has however been observed that educators and managers of educations frequently appear to be taken in by the extravagant claims made about various technologies and the promised advantages and benefits they can bestow. As each new piece of technology is developed and deployed in educational setting. People tend to forget the research and innovations that led to the previous ones. Practitioners tend to view each new piece of technology as novel, and that there is nothing to be learnt or derived from the knowledge and experience of the previous technology (Kirkwood or price, 2005). We must bear in mind that technologies and tools are very transient and short-lived than the educational issues that they claim to address. Therefore, instead of assuming that "new" equates with "different" or "better", educators need to improve their knowledge and understanding of the implications of what is already known about TEL, not just in terms of technical issues, but; are important in terms of epistemology (theory, Methods, validity, scope) and pedagogy.

SELF-ASSESSMENT EXERCISE

i. Discuss the role of teachers in the adoption of Technology. Enabled Learning (TEL)
ii. What factors can influence teachers in higher education to employ in their teaching practice.
iii. Write 5 questions that may help institutions to make decision on the adoption of TEL.

4.0 CONCLUSION

In this unit, we have defined technology-enabled learning (TEL), and listed some benefits of TEL. The aims, and goals of instructional TEL adoption and the roles of teachers as agents in the implementation were also explained.TEL instructional strategies were also explained in this unit.

5.0 SUMMARY

We recap the following main points of this unit here to help you recall what has been discussed thus far:

- There has been increased interest in the use of technology in teaching and learning from the decades of the 1990s to date.
- The inception of the World Wide Web (www) in 1995 had improved on the gains of ICT.
- There has been considerable increase in the adoption of ICT in education.

- ICT in education means teaching and learning with ICT.
- Technology Enabled learning is defined as the application of some form of digital technology to teaching and/or learning in an educational context; whether formal or informal.
- Different terms have been used to denote TEL e.g. computer-based learning, network learning, e-learning, technology-enhanced learning
- Technology Enabled Learning is about making learning possible.
- Teachers, students, and institutions can benefit from TEL.
- Increasing technology use by students can prepare them for their world of work. There are many more benefits.
- Institutions wishing to adopt TEL must set goals and aims
- for example, one aim could be helping students in remote hilly places to access learning by increasing flexibility for students in order to attract group of learning who are difficult to reach.
- The teacher is as critical in the TEL experiment as in face-to face interaction.
- The ability of teachers to know why, when and how to use TEL is important.
- getting teachers to use TEL involves very complex intrinsic and extrinsic influences.
- For teachers to appreciate TEL, their conceptions about teaching and learning must change.
- Teachers' support for use of TEL may take the form of:

  (a) Personal capacity building through research
  (b) Adopt and adapt mindset
  (c) Improving their passion and drive
  (d) Critically reflecting on continuous technology in education changes
  (e) Continuous practice
  (f) Remaining highly competent.

- Many factors can determine how teachers in higher institutions employ technology, which may include individual differences in teachers; to the adoption of innovations.
- Institutions may need to plan strategies to adopt TEL, using well thought out queries.
- Experiences from other institutions are also important for institutions to learn, when adopting TEL.

6.0 TUTOR MARKED ASSIGNMENT

1. List 3 benefits of adopting TEL for an Institution.
2. What forms would teachers' support for TEL take?
3. What 5 questions would a higher institution use in making decision for the adoption of TEL.

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UNIT 2 INSTITUTIONAL POLICIES AND INFRASTRUCTURE FOR TEL

CONTENTS

1.0 INTRODUCTION

In the last unit, we looked at what Tel is, its benefits, and institutional planning and strategies for TEL. We also described the teachers' role as agents for implementation of TEL in any institution. In this unit, we intend to discuss policies and sample strategies for TEL, which can be used by institution to draft their individual Tel strategies for their institution. TEL is mostly encountered in what is termed Blended Learning (BL). In this unit, we present the slides in Blended Learning of a workshop of Dual Mode Initiative at the National Open University of Nigeria (NOUN). To start, we will look at some factors that affect TEL that are rarely discuss because they are taken for granted.

2.0 OBJECTIVES

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

- enumerate some teachers and students' assumptions about teaching and learning.
- tabulate the advantages and is advantage of TEL for teaching and learning.
- discuss some intuitional assumptions about teaching and learning with Technology.
- list components of TEL institutional policy.
- define Blended Learning
- explain the categories of Blended Learning.
- illustrate a Blended Learning Environment.

- state why blended learning is important (uses).
- discuss models of blended learning.

3.0 MAIN CONTENT

3.1 Assumptions about Teaching and Learning

The terms teaching and learning has constantly been in use in the course of our studying these units. It is the same thing in all educational institutions. Their meaning however is most times taken for granted. Teachers most times feel that others understand what they mean by teaching and the teaching process and what these involve, and even how teaching is being conducted. When teachers assign learning activities to students, they also assume that the learners share their understanding of what purpose is to be served. There assumptions most times are not correct at all. For example, a teacher might think of teaching in terms of:

- Imparting knowledge and skill for learners
- Making learning possible, and
- Developing students' conceptions and understanding of a topic.

These variations in teachers thinking most influence their view of learning.

Leaners, however, are likely to think of teaching as:

- Conveying ad explaining the topics of a syllabus, and
- Telling them what they need to know and understand for assessment purposes.

Learners may also think of learning as:

- Acquiring new knowledge and skills
- Memorizing information in order to pass the course (and possible use I the working life), and
- Changing the ways, in which they think about and understand aspects of their subject and teal-world issues and problems.

In summary, learning might be considered as being:

Either: About quantitative change
About acquisition
A solitary activity.

When using TEL, a number of different specialists, other than the teacher might be involved in creating materials, resources etc., and they all need to be sure that they have shared understanding of the precise

educational intention and purpose of their task. When students use TEL materials, resources and activities without a teacher present to explain precisely what learners are expected to do and why. The educational rationale, therefore, has to be covered as part of the teaching/learning activity itself.

Teachers usually about the content of materials, when they consider using digital technologies to support teaching and learning TEL is here seen in terms of the capacity to store and deliver teaching materials (text, pictures or diagrams, sounds, moving images) digital. TEL is also seen as aids in finding and retrieving resources (e.g. from specialist repositories or through open searching of the web). Teachers also think of TEL in terms of the communication that it can facilitate (teacher-student or student-student) and the dialogue that can be enabled in the form of synchronous or Asynchronous delivery.

The situation above is akin to the general conception of teaching as:

1. Transition of knowledge (teacher centred)
2. The facilitation of learning (learner centred) (Kember & Kwan, 2000)

In all, how teachers employ technology reflects how they conceive their teaching role. In higher education, learning is usually expected to involve more than simple the acquisition of new information, procedures or processes. Teaching should therefore entail the developing students' capacity to think about their subject in qualitatively different ways.

Group Exercise

1. Debate the implication of TEL in teaching and learning using the following units:

    (a) How does it enhance teachers' efficiency in delivery of lessons?
    (b) How does it help students understanding of concepts?
    (c) discussion?
    (d) Can it improve students' scores?
    (e) How does it help teachers acquire information?

3.1.2 Advantages and Disadvantage of TEL for Teaching and Learning:

Advantages of TEL for Teaching	**Disadvantages of TEL for Teaching**
• Can engage students in variety of ways (using text, sound, visuals etc.) in their learning. • Support students' interactions with their peers and enables them to engage in collaborator work. • Better prepares students for their careers and personal life. • Enables better provision of feedbacks on assignments and tasks. • Can involve students in different locations, possibly different countries and enable them work together. • Ensure more consistency in quality of teaching • Enables the use of topics that were previously impossible or difficulty to teach in current circumstances.	• Students will not attend face-to-face sessions (lectures, etc.) • More difficulty to control what resources students' access and make use of.
Advantages of TEL for Learning	**Disadvantages of TEL for Learning**
• Offers greater flexibility for learners' in terms of where and when they study. • Supports students with specific learning difficulties who may find aspect of the curriculum difficult to access. • Helps to develop students' abilities to link theoretical and practical aspects of a topic. • Makes more active learning possible.	• Requires access to higher-specification computer and the internet – potential problems with access and reliability. • Requires institution/teachers to develop appropriate digital literacy skills in learners for them to make effective use of TEL. • Increases potential for plagiarism by students.

3.2.1 Drafting Institution Polices and strategies for TEL

Throughout the world of education, there are many teachers and senior managers who view digital technologies as being primarily a means of delivery – that is, they see the adoption of TEL mainly in terms of changing how teaching practice is organized for the students. The majority of TEL project undertaken to date have involved replicating existing teaching practices. Teachers using it have assumed that the adequacy and appropriateness of existing teaching practices are beyond question, at least in the lower education level. In higher education, however, there is considerable evidence that cast doubt upon such complacency (Biggs, 2003), (Price & Richardson, 2004).
Over the years, assumptions about educational processes have been questioned and re-questioned, leading to curricular changes, in some cases. A need for improvement in teaching and learning practices has often also been identified. Digital technologies are viewed not simply as providing a delivery mechanism, but as supporting changes in how university teachers and learning are undertaken to better prepare learners for modern world (Kirkwood & Price, 2003.

For this reason, it is not enough for TEL policies and strategies to focus primarily on technical issues; all aspect of teaching and learning – and the many complex factors that influence them must be taken into account.

The above assumptions pre-supposes that university policy makers, managers and teachers need to take a very broad view when considering the consequences of adopting TEL to support teaching and learning, bearing in mind that terms such as these are open to a variety of interpretations by those involved. Drafting an institution TEL policy will likely cause changes in many aspects of institutional culture including:

1. **Policies for Infrastructure and Support:**
   Must ensure that staff responsible for teaching, administering and supporting student learning are experienced, proficient and up to date in the use of technologies.

2. **Policies and Strategies Relating to Students Assessment:**
   Tasks that are assigned to assess students:

   (a) should require students to demonstrate personal understanding rather than primarily repeating or reproducing facts or information, and
   (b) should not be exclusively competitive/individualistic, but should align with the nature of the activities undertaken (increasingly social, interactive and collaborative).

3. **Policies and Strategies for Developing Students; Digital Literacy:**
   This should ensure that students acquire and practice the intellectual skills as well as the operational abilities necessary for using technologies and the associated tools in pursuit of educational goals and purposes.

4. **Policies for the Professional Development of Academic Staff:**
   This will enable practitioner to understand differing concepts of and approaches to teaching, learning and assessment and to reflect on and appraise the beliefs and practices.

5. **Policies aimed at Rewarding Scholarly Activities Relating to Advancement of TEL:**
   Encouraging and rewarding teachers who undertake scholarly investigations of their pedagogical practices (and their students learning), with the aim of improving their educational processes and practices. This should include scholarly (rather than technologically deterministic) activities relating to learning and teaching with technology.

6. **Policies and Infrastructure for Sharing TEL Scholarship Activities:**
   This policy promotes and enables the sharing of TEL activates designed using scholarly principles to improve teaching and learning practices and the scholarly evaluation of their effectiveness. This would involve the establishment of a digital repository for retaining 'successful' TEL activities and the associated documentation together with search facilities to enable their retrieval by other interest teachers.

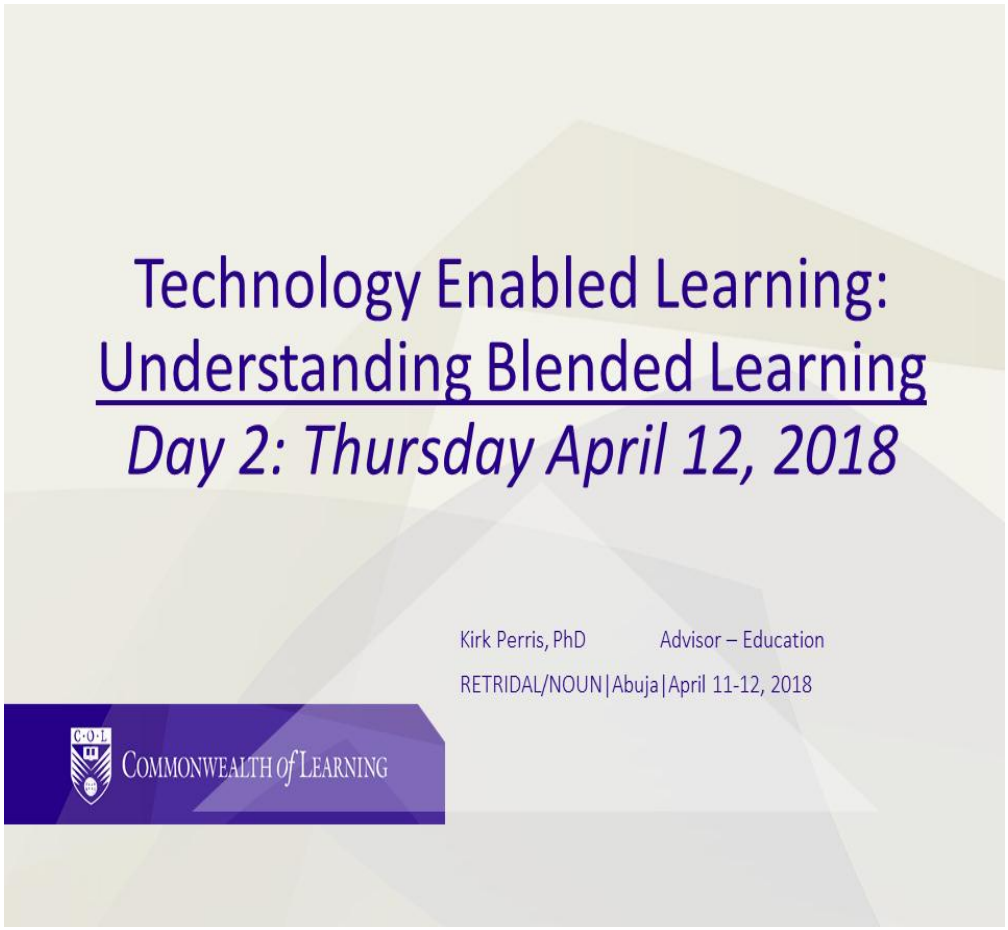
A good TEL policy should naturally the examination and discussion of all these aspects of an institution.

SELF-ASSESSMENT ASSIGNMENT

i. Discuss what must be included in an institutional TEL policy.

3.2.2 Blended Learning

One of the major achievements of deploying various technologies to enable teaching and learning is the emergence of the concept and practice of Blended Learning. We present in this section Slides of a workshop on TEL which deals with Blended Learning. All acknowledgments for these slides go to Kirk Perris (PhD) of the Commonwealth of Learning, Vancouver, Canada.


Technology Enabled Learning:
Understanding Blended Learning
Day 2: Thursday April 12, 2018
Kirk Perris, PhD Advisor – Education
RETRIDAL/NOUN|Abuja|April 11-12, 2018
COMMONWEALTH of LEARNING

Blended Learning Defined

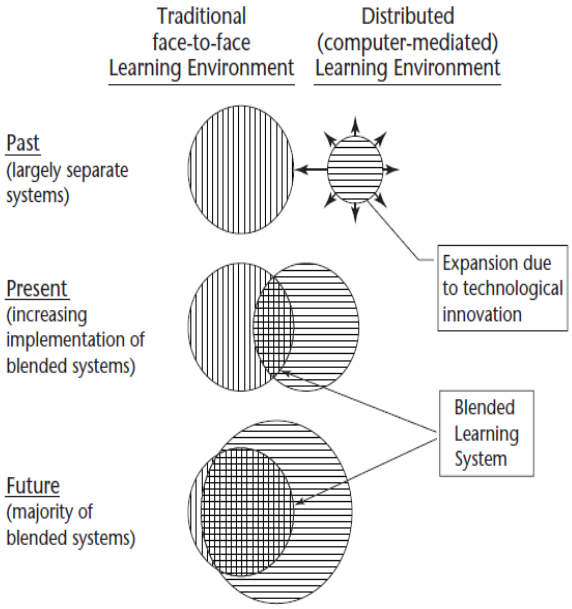
the thoughtful fusion of face-to-face and online learning experiences

Source: Garrison, D., & Vaughan, N. (2008). *Blended learning in higher education.* San Francisco, CA: Jossey-Bass.

What is being blended?

- Combining instructional modalities (or delivery media)
- Combining instructional methods
- Combining online and face-to-face instruction

Blended Learning: Past, Present and Future



Source: Graham, C. R. (2006). Blended learning systems. In C.J. Bonk and C.R. Graham, eds. *The handbook of blended learning: Global perspectives, local designs* (p.3-21). San Francisco: John Wiley

Levels of Blending

Activity-Level Blending. Blending at the activity level occurs when a learning activity contains both face-to-face and CM elements

Course-Level Blending. Course-level blending is one of the most common ways to blend. It entails a combination of distinct face-to-face and CM activities used as part of a course.

Program-Level Blending. Observe that blends in higher education are often occurring at the degree program level.

Institutional-Level Blending. Some institutions have made an organizational commitment to blending face-to-face and CM instruction.

Categories of Blending

Enabling blends	Primarily focus on addressing issues of access and convenience—for example, blends that are intended to provide additional flexibility to the learners or blends that attempt to provide the same opportunities or learning experience but through a different modality.
Enhancing blends	Allow incremental changes to the pedagogy but do not radically change the way teaching and learning occurs. This can occur at both ends of the spectrum. For example, in a traditional face-to-face learning environment, additional resources and perhaps some supplementary materials may be included online.
Transforming blends	Blends that allow a radical transformation of the pedagogy—for example, a change from a model where learners are just receivers of information to a model where learners actively construct knowledge through dynamic interactions. These types of blends enable intellectual activity that was not practically possible without the technology.

Source: Graham, C. R. (2006). Blended learning systems. In C.J. Bonk and C.R. Graham, eds. *The handbook of blended learning: Global perspectives, local designs (*p.3-21). San Francisco: John Wiley

How much blending?

Proportion of Content Delivered Online	Type of Course	Typical Description
0%	Traditional	Course where no online technology used — content is delivered in writing or orally.
1 to 29%	Web Facilitated	Course that uses web-based technology to facilitate what is essentially a face-to-face course. May use a course management system (CMS) or web pages to post the syllabus and assignments.
30 to 79%	Blended/Hybrid	Course that blends online and face-to-face delivery. Substantial proportion of the content is delivered online, typically uses online discussions, and typically has a reduced number of face-to-face meetings.
80+%	Online	A course where most or all of the content is delivered online. Typically have no face-to-face meetings.

Source: Allen, & Seaman (2014). *Grade Change: Tracking Online Education in the United States*, Babson Survey Research Group and Quahog Research Group. Retrieved from https://www.onlinelearningsurvey.com/reports/gradechange.pdf

Example

Components of the blended course

Proportions	Components
Online Components (50%)	Reading materials, resources Forum discussions Sample links
F2F Components (50%)	Traditional lectures Group Work (cooperative learning tasks) Group discussions Expert seminars

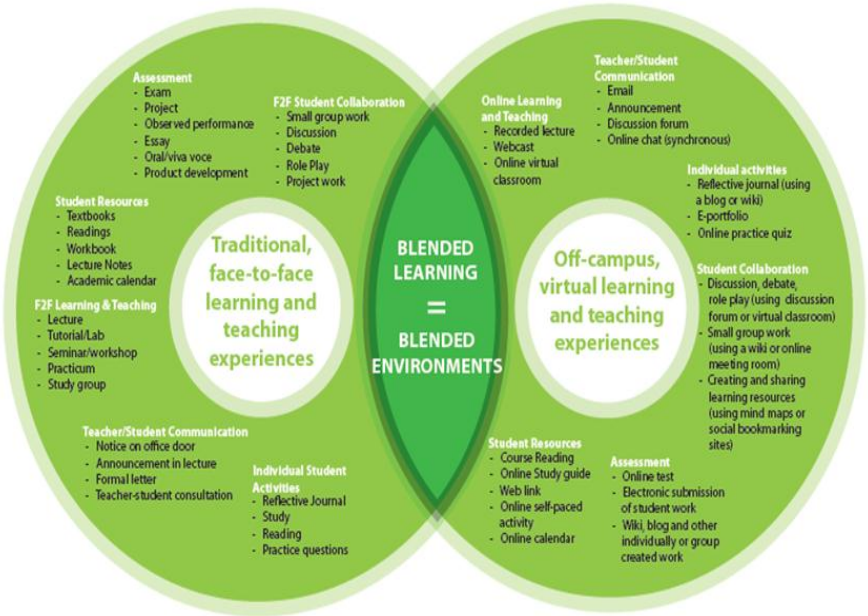
Source: Gedik, N., Kiraz, E., & Ozden, M. Y. (2013). Design of a blended learning environment: Considerations and implementation issues. *Australasian Journal of Educational Technology. 29*(1), 1-19

Blended Learning is...

BL= F2F+LMS

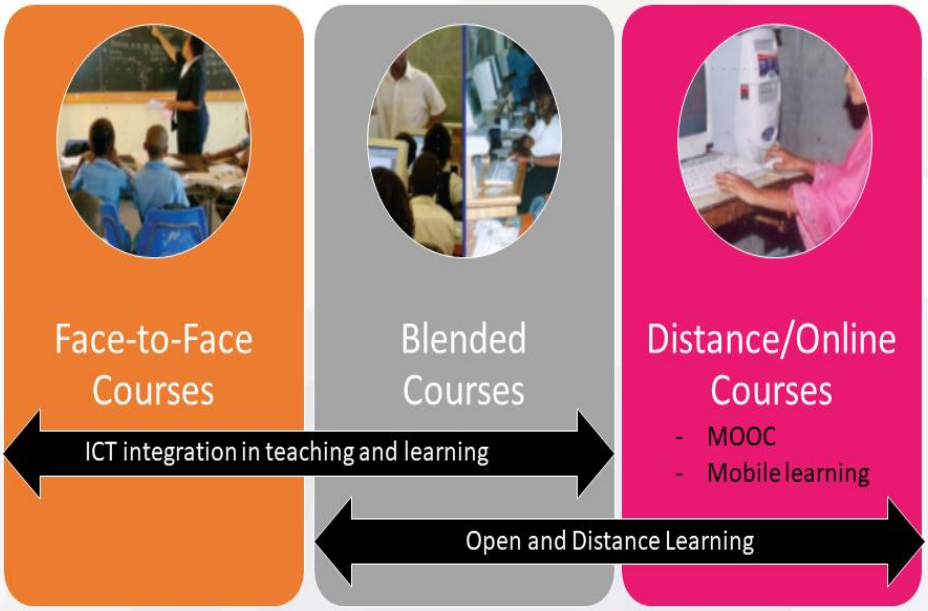
Source: Fadde, & Vu (2014). Blended Online Learning: Benefits, Challenges and Misconceptions, In Patrick R. Lowenthal, Cindy S. York, and Jennifer C. Richardson, Eds. *Online Learning: Common Misconceptions, Benefits and Challenges* (p.33-48). New York: Nova Science Publishers

Blended Learning Environment



Source: Bath, D., & Bourke, J. (2010). *Getting Started with Blended Learning*. Mt Gravatt: GIHE

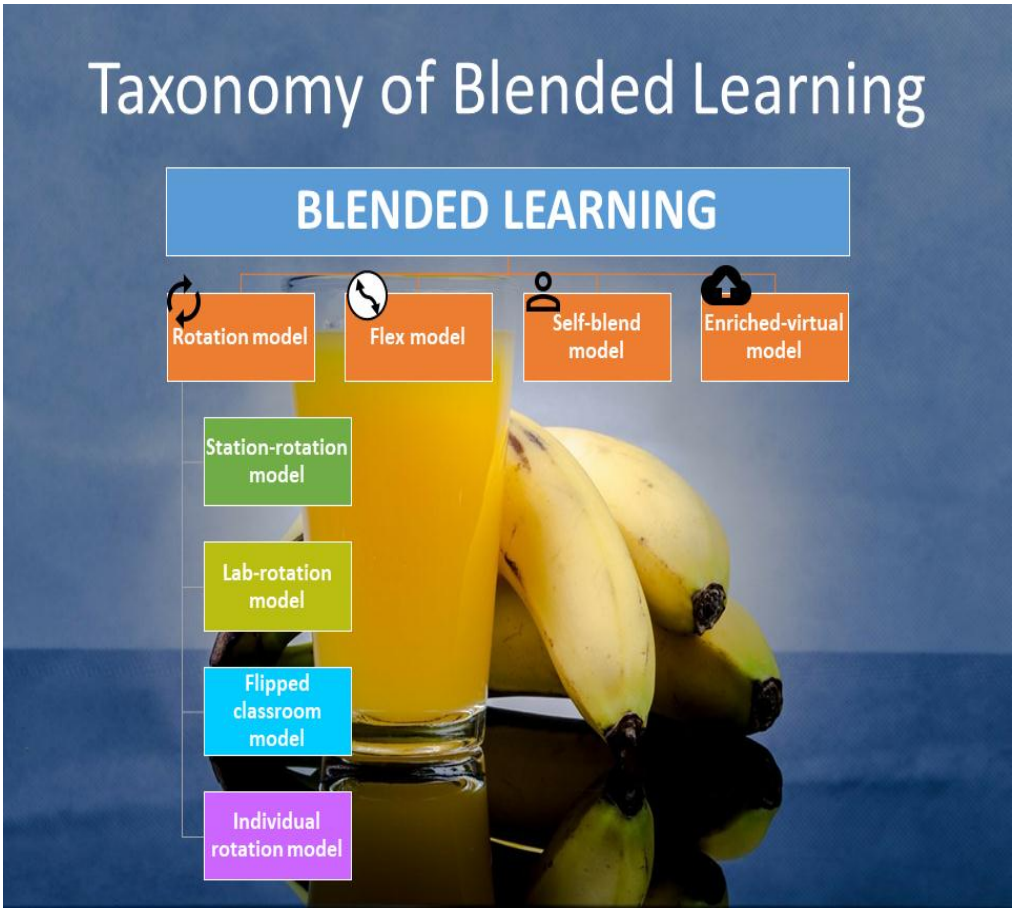
Convergence of Technology



Why blended learning?

- Broaden the spaces and opportunities available for learning;
- Support course management activities (e.g., communication, assessment submission, marking and feedback);
- Support the provision of information and resources to students;
- Engage and motivate students through interactivity and collaboration.

Source: Bath, D., & Bourke, J. (2010). *Getting Started with Blended Learning*. Mt Gravatt: GIHE

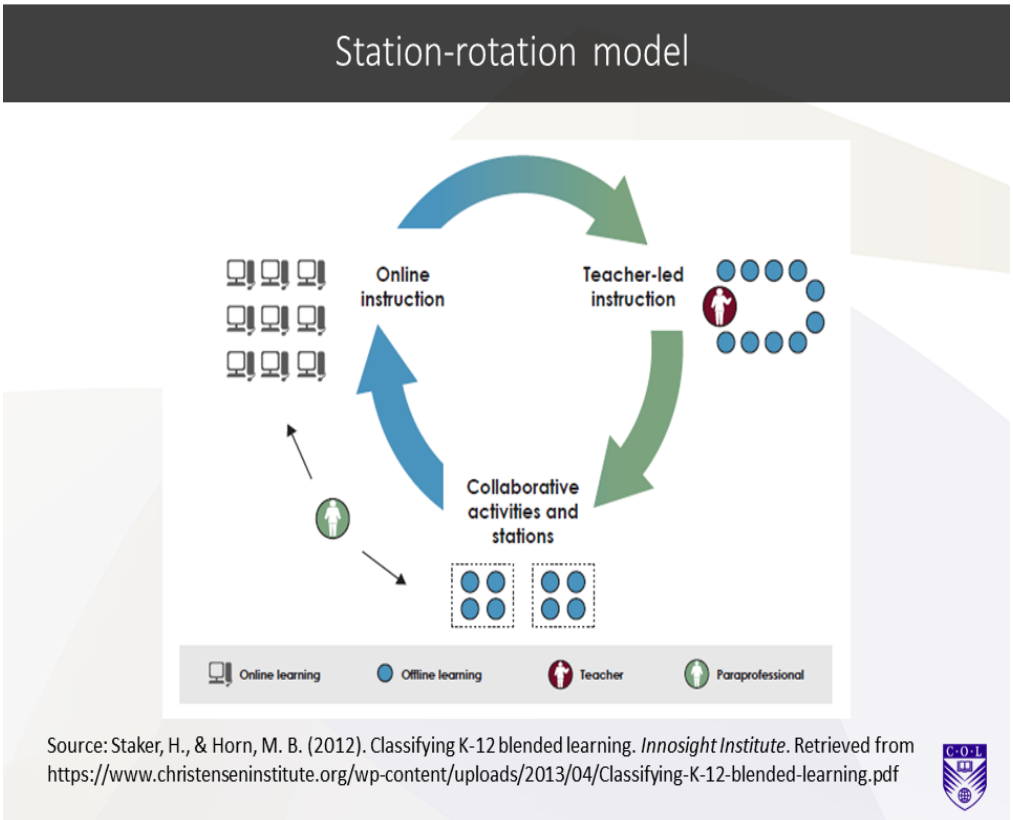


Rotation model – a program in which within a given course or subject (e.g., math), students rotate *on a fixed schedule or at the teacher's discretion* between learning modalities, at least one of which is online learning.

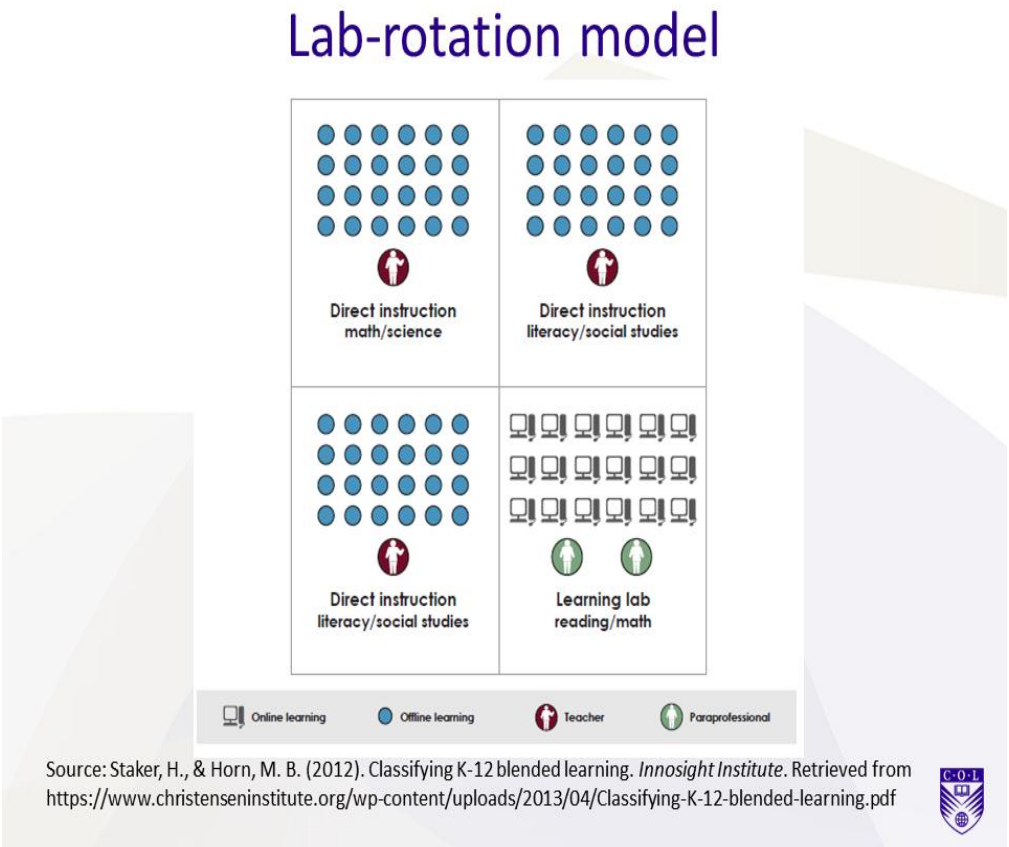
Flex model – a program in which content and instruction are delivered primarily by the Internet, students move on an *individually customized, fluid schedule* among learning modalities, and the teacher-of-record is on-site.

Self-Blend model – describes a scenario in which students choose to take one or more courses entirely online to supplement their traditional courses and the teacher-of-record is the online teacher.

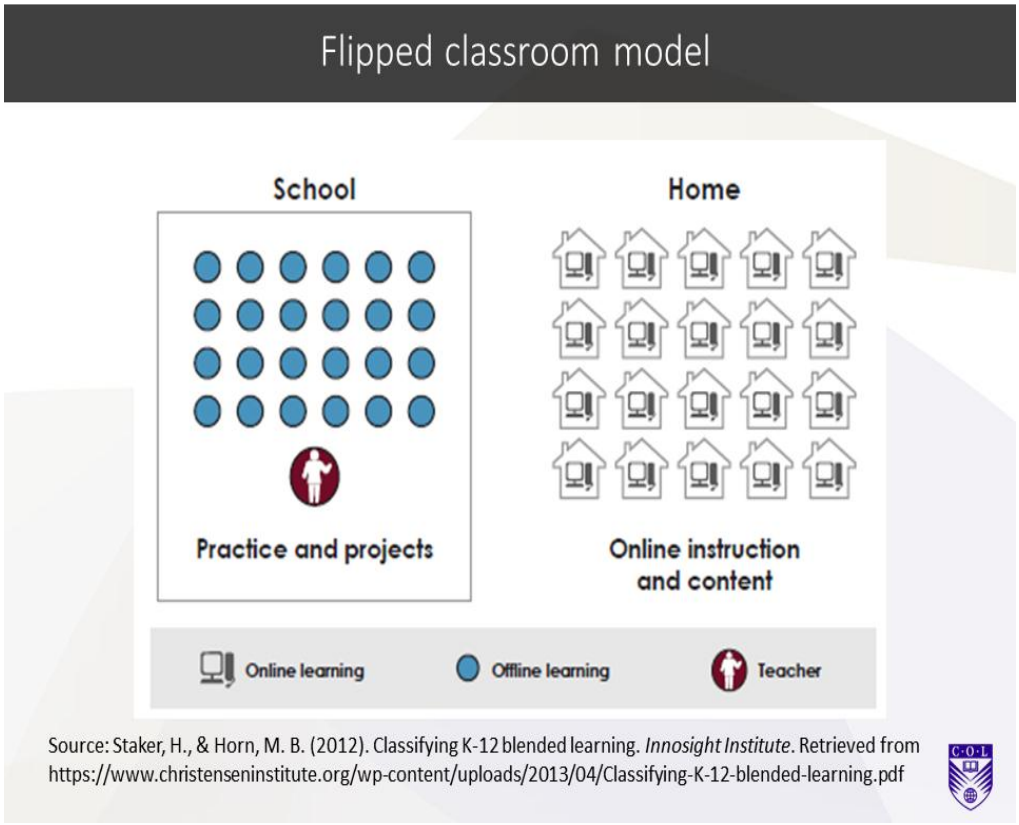
Enriched-Virtual model – a whole-school experience in which within each course (e.g., math), students divide their time between attending a brick-and-mortar campus and learning remotely using online delivery of content and instruction.



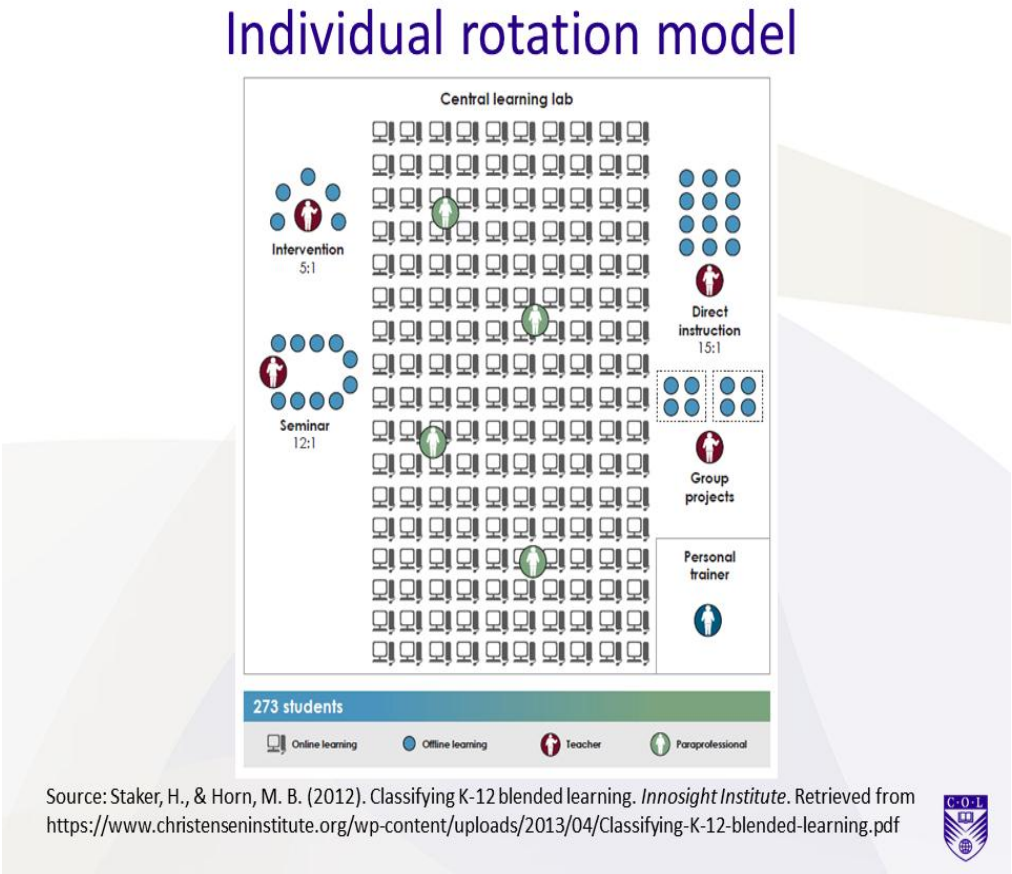
A Rotation-model implementation in which within a given course or subject (e.g., math), students rotate *on a fixed schedule or at the teacher's discretion* among classroom-based learning modalities. There are different station in class to work.



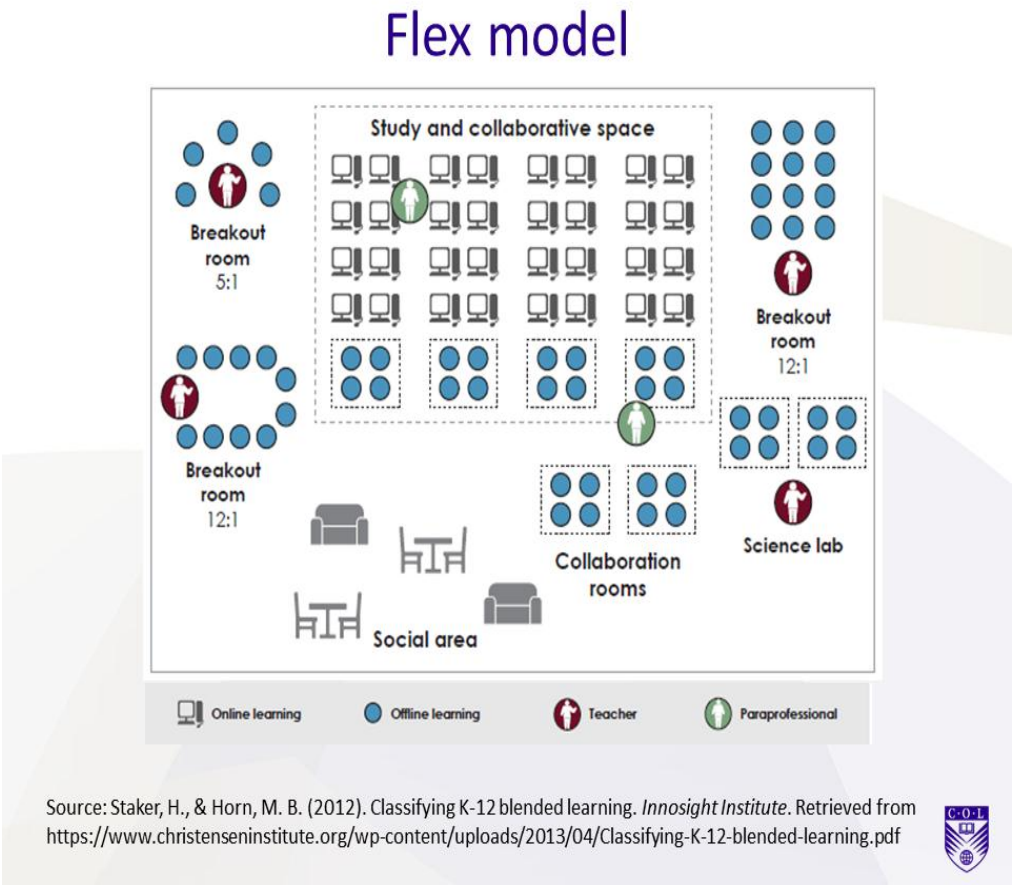
A Rotation-model implementation in which within a given course or subject (e.g., math), students rotate *on a fixed schedule or at the teacher's discretion* among locations on the brick-and-mortar campus.



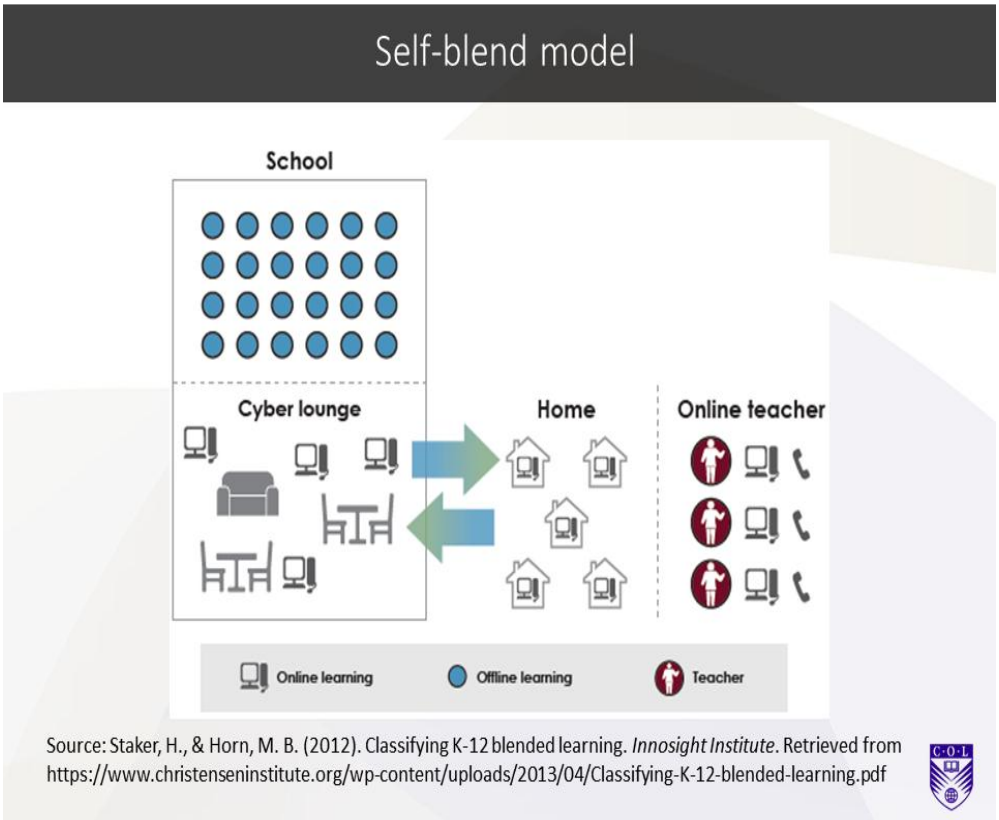
A Rotation-model implementation in which within a given course or subject (e.g., math), students rotate *on a fixed schedule* between face-to-face teacher-guided practice (or projects) on campus during the standard school day and online delivery of content and instruction of the same subject from a remote location (often home) after school.



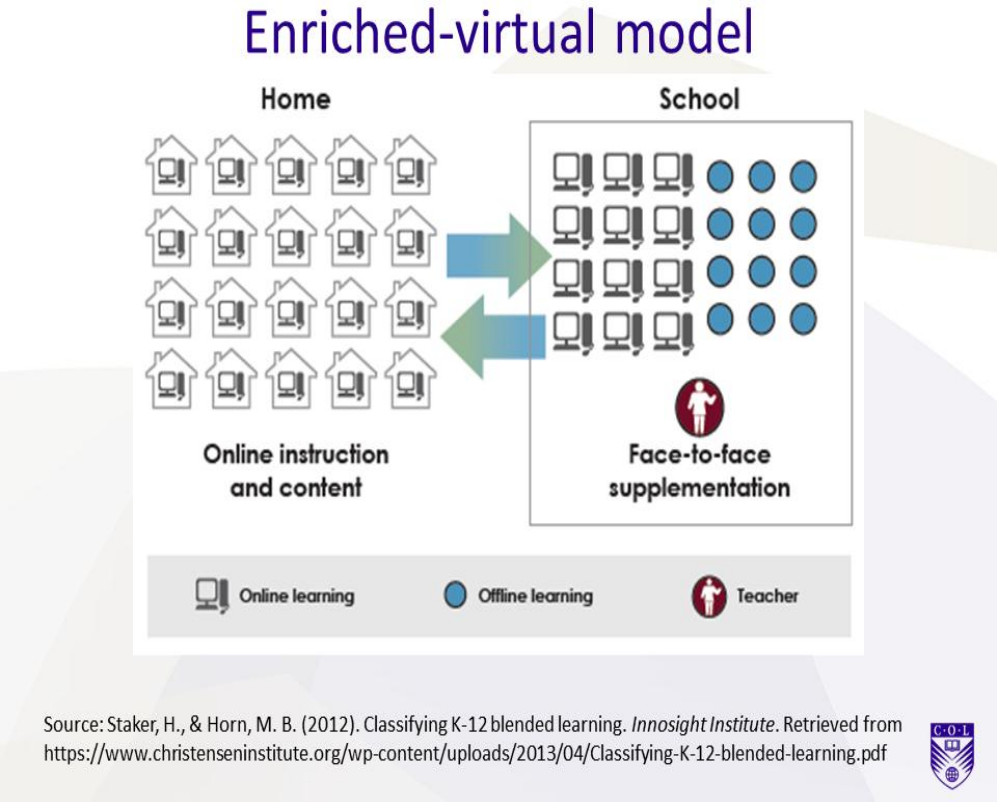
A Rotation-model implementation in which within a given course or subject (e.g., math), students rotate on an *individually customized, fixed schedule* among learning modalities, at least one of which is online learning.



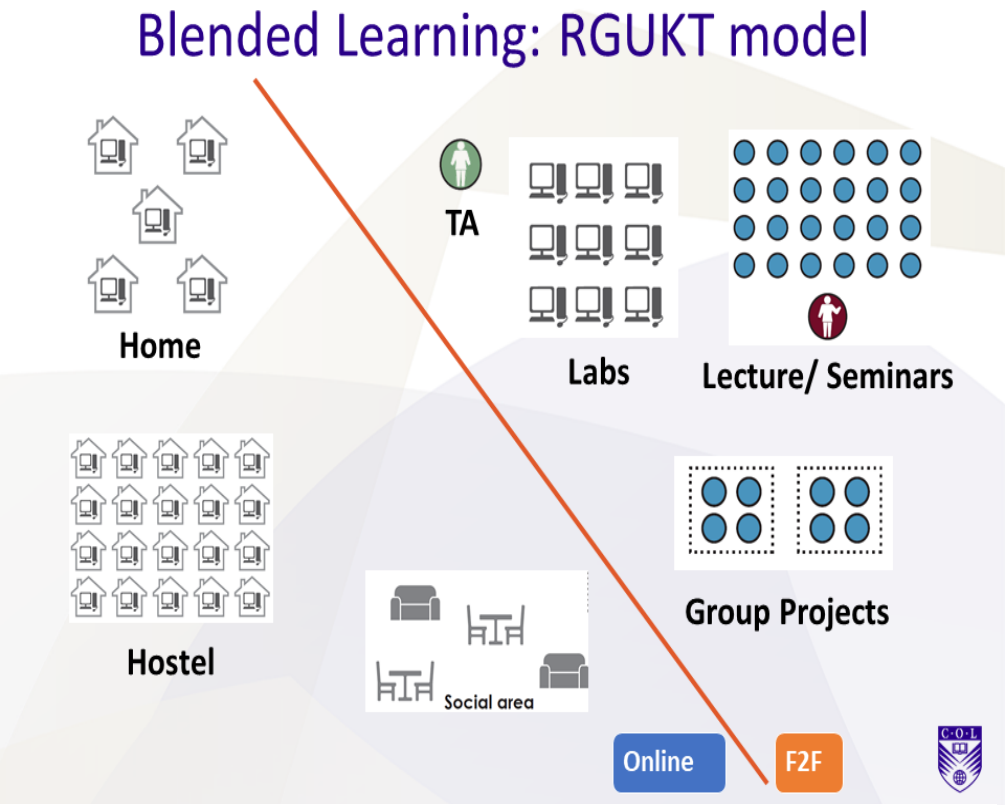
A program in which content and instruction are delivered primarily by the Internet, students move on an *individually customized*, *fluid schedule* among learning modalities, and the teacher-of-record is on-site.



Self-Blend model – describes a scenario in which students choose to take one or more courses entirely online to supplement their traditional courses and the teacher-of-record is the online teacher. Student choice is important. Most American universities offer this model.



A whole-school experience in which within each course (e.g., math), students divide their time between attending a brick-and-mortar campus and learning remotely using online delivery of content and instruction. Whole programme level experience for the learner with little face-to-face interaction.


Blended Learning: RGUKT model
Home
TA
Labs
Lecture/ Seminars
Hostel
Social area
Group Projects
Online
F2F


Institutional success factors
• Aligned to organisational needs rather than using a generic approach
• Organisational readiness, sufficient technical resources, motivated faculty
• Freedom to adopt different models of blended learning
• Blended learning should be introduced as a scholarly and transformative redesign process
• Carrying out regular evaluations and sharing the results
Source: Stacey, E. & Gerbic, P. (2008). Success factors for blended learning. In Hello! Where are you in the landscape of educational technology? Proceedings ascilite Melbourne 2008. Retrieved from http://www.ascilite.org.au/conferences/melbourne08/procs/stacey.pdf

Teachers

- Continuing professional development for teachers with sufficient time for development
- Ongoing pedagogical and technical support
- Dealing with teachers' fears of loss of control, and general uneasiness about the impact of online learning on classroom
- The impact on teachers' workloads must be taken into account
- Use creation of shareable and reusable digital resources in an effort to ensure that blended learning is sustainable

Source: Stacey, E. & Gerbic, P. (2008). Success factors for blended learning. In *Hello! Where are you in the landscape of educational technology? Proceedings ascilite Melbourne 2008*. Retrieved from http://www.ascilite.org.au/conferences/melbourne08/procs/stacey.pdf

Students

- Students' readiness for blending learning
- Increased self-regulation in learning and time management skills
- Consistent and transparent communication around the new expectations to use technology in teaching and learning
- Clarity on assessment

Source: Stacey, E. & Gerbic, P. (2008). Success factors for blended learning. In *Hello! Where are you in the landscape of educational technology? Proceedings ascilite Melbourne 2008*. Retrieved from http://www.ascilite.org.au/conferences/melbourne08/procs/stacey.pdf

Pedagogic Considerations

- Combination of the virtual and physical environments should be made on the basis of subject need and learning outcomes
- Utilise the strengths of the different media and add value to the learning activities
- The central role of the face-to-face environment along with activities for before, during and after class needs to be designed
- Make the blend relevant to the learners need

Source: Stacey, E. & Gerbic, P. (2008). Success factors for blended learning. In *Hello! Where are you in the landscape of educational technology? Proceedings ascilite Melbourne 2008.* http://www.ascilite.org.au/conferences/melbourne08/procs/stacey.pdf

Gagne's Nine Events of Instruction

Activities	Face-to-face	Online
Gain attention	✓	✓
Inform learners of objectives	✓	✓
Stimulate recall of prior learning	✓	✓
Present the content	✓	✓
Provide "learning guidance"	✓	✓
Elicit performance (practice)	✓	✓
Provide feedback	✓	✓
Assess performance	✓	✓
Enhance retention and transfer to the job	✓	✓

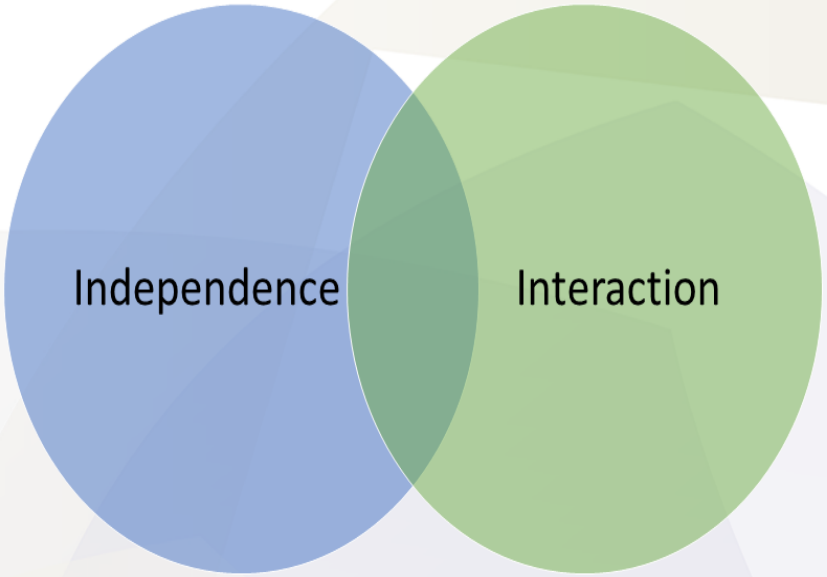
Technology Choice

Gagne's Nine Events of Instruction	Online technologies
Gain attention	SMS alert, Social media, pop-ups, highlight ballons
Inform learners of objectives	Web page, LMS
Stimulate recall of prior learning	Prior learning quiz
Present the content	Video, PDF, HTML pages for reading
Provide "learning guidance"	Short tips via audio; discussion forum
Elicit performance (practice)	Simulation, drill and practice exercises
Provide feedback	One-to-one message, email
Assess performance	Assignments, quizzes
Enhance retention and transfer to the job	Blogs, Wikis, collaboration projects

Quality in Blended Learning

- Quality of teaching
- Student learning outcomes

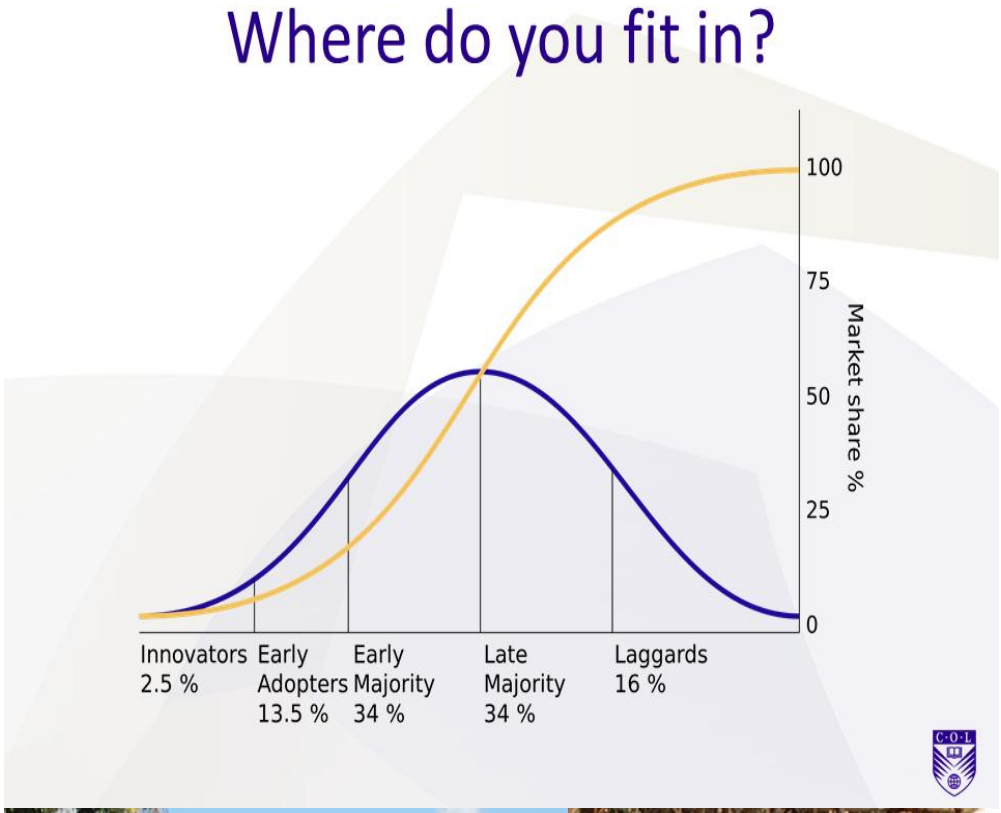
Getting the Blend Right



A course is a course…

The strongest predictor of success is in previous academic performance (Dziuban, 2011). Historically, students who have done well in courses do well in any mode; a course is a course.

Source: Dziuban, C., & Moskal, P. (2011). A course is a course is a course: Factor invariance in student evaluation of online, blended and face-to-face learning environments, *Internet and Higher Education*, 14, 236–241


Where do you fit in?
100
75
50
25
0
Market share %
Innovators 2.5 %
Early Adopters 13.5 %
Early Majority 34 %
Late Majority 34 %
Laggards 16 %


Thank you

3.2.3 Sample of TEL Policy.

See Appendix 1.

4.0 CONCLUSION

This unit explained the advantages and disadvantages of TEL for teaching and learning. In it, we also discussed some instructional assumptions about teaching and learning with technology. TEL institutional policy is explained here. The concept of Blended Learning, its importance, mode and environment were also highlighted.

5.0 SUMMARY

In this unit, we have discussed the following main points:

- Teachers and learners' assumptions about teaching and learning.
- For teachers, teaching means imparting knowledge, making learning possible, developing students' conceptions and understanding of topic:
- Learners think of teaching as conveying and explain topics of a syllabus, telling them what they need to pass examinations.
- For learners, learning is acquiring knowledge and skills, memorizing information, changing their ways of looking at subject matter.
- Using TEL changes the way teachers see teaching and learning only minimally.
- TEL can be used to support teaching and learning.
- There are several advantages and disadvantages of using TEL for teaching and Learning presented in Table 1.
- Institutional Policies on TEL should take cognizance of:

- Policies for infrastructure and technical support
- Policies and strategies relating to student assessment
- Policies and strategies for developing students' digital literacy.
- Policies for professional development of academic staff to advancement of TEL
- Policies and infrastructure for sharing TEL scholarship activities.
- There is an appendix for a template of TEL policy.
- TEL slides on Blended Learning is also provided.

6.0 TUTOR MARKED ASSIGNMENT

1. Define concisely, what is meant by Blended Learning.
2. State three reasons to support efforts at Blending learning.
3. List 4 types of Blended Learning.

7.0 REFERENCES/FURTHER READING

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UNIT 3 IMPLEMENTING POLICIES AND STRATEGIES OF TEL

CONTENTS

1.0 INTRODUCTION

Implementing an institutional TEL programme will require a lot of training-training for academic management and technical support staff. What goes into these trainings is the focus of this Unit? It is also important for an institutional audit of existing technology infrastructure, which will provide an indication of the extent to which the institution needs to install new technical infrastructure and/or upgrade existing facilities to meet the projected need of the institution.

2.0 OBJECTIVES

By the end of this unit, learners will be able to:

- list the various technical considerations to be implemented by institutions for TEL
- develop instrument to survey faculty use of Technology for teaching and learning
- discuss the importance of capacity building for academic and technical/support staff for TEL in an institution
- explain the need to develop students' digital skill
- explain how TEL can be monitored and evaluated.
- main Content

3.0 MAIN CONTENT

3.1 Implementing the technical infrastructure for TEL

An institution need to consider the following implementation needs:

1. equipment (hardware) to be used by individual teachers and/or in teaching spaces,
2. equipment (hardware) to be used by students (their own, or equipment provided by the institution in teaching spaces like laboratory or elsewhere),
3. networking equipment to provide adequate capacity and coverage throughout the institution,
4. servers for digital storage of materials, resources, online tools, etc.
5. servers for students' services (communications, project work, sharing facilities, etc.), and
6. servers for students and course administration.

In addition to the above physical infrastructure, the institution will need to provide technical assistance and support mechanisms - both initial and ongoing – to academic and administrative staff, and for dealing with breakdowns and difficulties. Students will also need technical support and assistance. The more an institution embraces TEL, the more likely it is that students will expect to have access to the academic system at any time of the day.

3.2 Survey Instrument for Technical Training for Academic staff

For effective implementation of TEL, institutions have to know the experiences of its academic staff in the use of technology. To do this, institutions have to develop a survey instrument (Questionnaire) to measure Faculty Use of Technology for Teaching and Learning. The reason for this is that, even if teachers are familiar with using technology (say a computer) for certain task, they might have no previous knowledge of the system the institution has chosen to use for TEL. for example if a commercial Virtual Learning Environment (VLE) or Learning Management System (LMS) has been adopted, it is unlikely that many academic staff will have much previous experience of the range of the tools and facilities it offers.

The above scenario presupposes that it will be necessary to implement appropriate means of delivering technical training for teachers and other staff who support teaching and learning initial training will be required to enable them to prepare materials and resources, using basic tools to

support teaching and learning processes and for conducting course or modules administration. When additional tools are added, or existing facilities are updated or replaced, further ongoing training will be required for staff and supporting staff. These trainings can be institution wide training or departmental.

To ascertain the extent of Faculty Usage of Technology for teaching and Learning a typical Questionnaire should have items that cover the following areas:

1. Background Information
2. Access to and use of Information and Communication Technologies (ICTs)
3. Using ICTs for Teaching and Learning
4. Using ICTs for Research and Scholarship
5 Perceptions of Use of Technology-Enabled Learning
6. Comments.

A Questionnaire on Faculty Use of Technology for Teaching and Learning is provided in Appendix 2.

SELF-ASSESSMENT EXERCISE

Look at the Questionnaire in appendix 2, and answer the questions giving your sincere opinions as they relate to you and your institution.

3.3 Importance of Capacity Building and Professional Development.

As part of the implementation process for TEL, various groups of staff within the institution will need capacity building and/or professional development to accompany the introduction of the infrastructure (equipment and systems) for TEL. the following areas of capacity upgrade will be necessary:

1. Academic staff will need to know how best to use TEL for their pedagogical purposes.
2. Middle managers will need to understand the implications for the curriculum and resources at the departmental faculty level.
3. Senior managers will need to appreciate the implications of TEL policies and strategies for students, staff and resources.
4. Academic support staff will need to consider how best to help and advice teachers and learners in order to maximize the potential benefits of TEL.

5. Technical support staff will need to extend their understanding of the development process for courses and modules and how they can best contribute their expertise.

It is observed that the nature of the professional development activities will be different for different stakeholder groups, but they should all be planned in a shared concern in order to advance the institution's goal for implementing TEL. the framework for continuing professional development (CPD) is presented in the table below for different academic groups.

Table 3.1 A framework for continuing professional development (CPD) for teaching and learning with technology:

Target Group	Focus of CPD	Purpose of CPD	Aim of CPD
Senior Managers	University Policy and decision making regarding the use of TEL.	To develop a fuller understanding of the effects of university TEL and related policies and strategies on students, staff and resources.	Ro promote strategic decision making that embeds the necessary structures and resources to support policy and decision relating to TEL.
Middle Managers	Faculty and department level policy making in the use of TEL in the overall curriculum.	To understand the implication of faculty-and departmental-level TEL and related policies and strategies for students, staff and resources.	To promote strategic decision making that supports the coherent application of Faculty and departmental-level TEL and related policies in course programmes and modules by providing appropriate structures and policies for staff and students.

Individual Teaching Staff	Curriculum and course development using technology.	To develop and understanding of the pedagogical rationale of using TEL in their courses and Modules and the implications of their choices for students, staff and resources.	To promote contextualized reflective practice and tactical choices for pedagogically driven technology use, aimed at improving the quality of the student experience.

SELF-ASSESSMENT EXERCISE

i. Lists the institutional needs for the implementation of TEL in a University.
ii. What capacity upgrade are necessary for the following categories of staff for TEL Implementation?

(a) Academic staff
(b) Middle Managers
(c) Senior Managers
(d) Academic Support staff
(e) Technical Support Staff.

3.2.1 Development of Students Digital Literacy Skills

Recall that we have mentioned in the previous unit that students' expectations and conceptions of teaching and learning in higher education might not be aligned with their teachers' belief about those processes. It has also been established that "digital native" or the "net generation" are not generally ready for learning with technology (e.g. Bennett, Maton & Kelvin, 2008; Helsper & Eynon, 2009). The results of these studies show no correlation between technical skills and competency (which the digital natives have) and the intellectual skills for effective use of technology for educational purposes (which they do not have). For example, young people entering higher education regularly use search engine like Google or sources like Wikipedia to find information about or resources for topics of interest, but they often lack the evaluative skills to select the most trustworthy and appropriate sources for their particular academic purpose.

Academic programmes must ensure that opportunities exist for students to develop their digital literacy skills. Such skills are not simply about knowing how to use it effectively for learning and living.

3.4 Monitoring and Evaluating TEL Development

There are many reasons why it is important to monitor and evaluate TEL developments in terms of their use by both students and staff. Monitoring can determine whether students have used the technology as expected by those designing learning sequences and activities. If they have used the technology; has it resulted in anticipated learning process/or outcomes? If they have not used the technology as expected, what changes or remedial measures can be put in place to rectify the situation for current or future students.

Monitoring activities might include:

1. determining the extent of use of TEL infrastructure, tools, resources etc., by students and staff (on an individual or a course/module basis),
2. determining whether students' extent and pattern of use of TEL materials and resources match with teachers' expectations,
3. Establishing which students (and staff) are making little or no use of TEL materials and resources, and
4. Ascertaining which TEL materials and resources could benefit from amendment, revision or improvement. (Kirkwood & Prince, 2016).

Evaluation activities might include:

1. establishing how well TEL materials and resources have enabled students to achieve the learning outcomes of a module or course (and possibly identifying any elements that would benefit from revision),
2. identifying teaching or learning activities that worked particularly well for students (and then sharing best practices with other teachers in the same department, faculty or institution), and
3. understanding a scholarly investigation of a particular innovation to share with the wider academic community (through publications, conference attendance, etc.)

It is important to establish mechanisms and procedures for monitoring TEL development within a department, faculty or whole institution. It must be noted too that institutional peculiarities will determine the type of mechanism and procedure adopted for such monitoring, and for collecting evaluative information. Many VLEs or LMS can produce data and statistics on the use of the various materials, resources etc. these

data are simple quantitative data such as the number of site visits, log on duration or pages visited. However, turning those data into useful information – data analysis – will require educational judgements to be made by teachers and managers of the systems.

To build a better understanding of the effectiveness of TEL developments, evaluation procedures that enable the educational benefits to be scrutinized should be established. Emphasis need be given to the types of interactions or activities with which learners and teachers are engaging and their effectiveness for achieving the pedagogical goals. Feedbacks for evaluative purposes should be collected regularly through:

(1) students focus group and/or interviews
(2) students experience surveys, and
(3) TEL usage statistics (learning analytics)

SELF-ASSESSMENT EXERCISE

i. State 4 activities used in monitoring TEL development
ii. State 3 activities that might be used to evaluate TEL effectiveness.

4.0 CONCLUSION

In this unit, the technical considerations for institutional implementation of TEL are highlighted. Survey instrument fro institutional TEL researches are discussed. Building capacity for TEL among institutional staff, and TEL evaluation and monitoring were included in this unit.

5.0 SUMMARY

- For effectiveness implementation of TEL, an institution needs to list the various technical considerations to be implement in the course TEL development.
- There is also the need to provide technical assistance and support mechanism.
- Once an institution embraces TEL, students would want to have access to it at any time.
- Institutions may need to u the experiences of teachers in the use of technology.
- After the survey, academic, support staff, management staff may need training in various VLEs or LMS deployed by the institution.
- A typical questionnaire to gauge teachers' experiences with technology should have the following items areas:

- Background information
- Access to and use of ICT
- Using ICTs for teaching and learning
- Using ICTs for research and scholarship
- Perceptions of use of Technology-Enabled learning
- Comments.

- As part of TEL development, various groups of staff - senior management, middle management, academic support and technical staff need capacity building for professional development.

- Some students are involved, students digital Literacy also is important and must be developed.

- For effectiveness, TEL development in an institution must be monitored and evaluated.

6.0 TUTOR MARKED ASSIGNMENT

1. What 4 activities are essential on monitoring TEL development in an institution?
2. state 3 activities that might be used to evaluate TEL effectiveness.

7.0 REFERENCES/FURTHER READING

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