Handbook on In-house Style for Course Development

Adapted from Santosh Panda

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Section 1: About the Handbook

Handbook Aims

The *Handbook on In-house Style* is intended for all those faculty engaged in developing self-learning materials for distance learners, to enhance their broad knowledge and skills of developing self-learning materials for distance learners. Different examples have been provided which you can relate to your own contexts and discipline/subject area for developing and finalising modules and units.

Handbook Objectives

This handbook is designed for those involved in writing and developing self-learning materials, in the contexts of distance learning. After going through the handbook, you should be able to:

- Decide and frame the curriculum structure for your course/subject area and also in relation to modularity and course credits/student workload;
- Understand and apply the COL Template and the in-house style template for writing course units.
- Transform existing curriculum structure to conform to distance learning.
- Develop and write self-learning materials/units for the specified target group of learners.

Handbook Workload

This handbook has been designed so that your reading and comprehension, combined with working through the set activities, should take you about 15 hours of study. There are three activities (Handbook Activities) which you should work through while going through the handbook or after reading through it. Read the handbook in the way it has been sequenced; this will better enhance your understanding.

Handbook Structure

You will notice that there are five sections in the handbook. While the first section, which you are going through right now, gives you an idea of the way the handbook has been designed and how to use it, Section

2 focuses on briefly outlining distance learning at IDE and the nature of distance learners. You may, of course, read more on these aspects from some of the readings suggested at the end of this handbook. In Section 3, the module development in-house style is described through a Module Template. Section 4 briefly outlines the contents of the in-house style for course units. Section 5 expands the discussion on working with the template and offers practical hands-on examples and activities to help you develop the understanding and skills you will need to design self-learning units for open and distance learners.

Handbook Layout and Use

The handbook uses a user-friendly design which, we hope, you will find easy to navigate; we hope that you will find the in-house style template simple and learner-friendly, too. We have given explanations and examples for some of the important parts of the template, such as structure/contents, introduction, outcomes, activities, etc. which you may find useful, and these examples may enable you to develop the other parts, especially the presentation of the content, with ease.

Section 2: Distance Learning at IDE

Distance Learning

Distance learning, as an evolutionary improvement over the earlier correspondence education, brings in all the possible media to deliver instruction and learner support to facilitate independent self learning by the distance learner. As an out-of-classroom and out-of-regular-campus method and system, it is based on the following characteristics:

- Learners are away from the educational institution, and study mostly alone by themselves with the help of self-learning materials delivered by the institution, with tutorial/mentoring support provided mostly at a distance.

- There is quasi separation of the teacher/tutor and the learner, since sometimes they can occasionally meet at learning centres or designated workshops or field visits to interact in peer groups and also individually.

- Learners are at a distance most of the time (therefore, there is limited regular face-to-face contact such as going to a school or an institution). They may be busy doing a job, doing extra work in or outside the home, or studying other courses, too. Each learner has different study habits and learning styles. Therefore, all possible media – print, audio, video, multimedia, conferencing, web, and face-to-face interaction – are brought together in a judicious MIX OF media to deliver content (that is, teaching) as well as provide learner support. In most cases, learning materials are produced and delivered before learners read them, and printed materials dominate the basket of learning materials.

Therefore, learning materials, assignments, practical exercises, tutorials, assessment systems and support systems are carefully designed and developed to facilitate effective student learning at a distance.

Institute of Distance Education Teaching and Learning Overview

The delivery of the programme in IDE is through the distance mode. The main medium of instruction used is print in the form of Self-Instructional printed modules. These serve in the place of the teachers as they contain the subject content and instructional devices to guide the learners. Additional academic support services are provided by:

- Face to face tuition during residential and monthly meetings.
- Library services both on campus and regional.
- Limited tuition and guidance through assignments and tutorial letters.

The face to face tuition constitutes a maximum of 1/3 of the instructional time while the printed module constitutes a minimum of 2/3 of the instructional time. It means that the modules provide the core of learning with only minimum supplement from face to face tuition. The face to face tuition is provided by the course lecturers and course tutors during study sessions and tutorial sessions that are programmed during the year.

Rationale for Print Medium Use

Print medium is widely used as the instructional device in distance education because of the following characteristics:

- It is the most familiar way in which literate people communicate ideas.
- It has permanency for repeated reference by the learners.
- It is capable of being very interactive if developed well with motivational instructional devices.
- It gives the students control over their learning without restrictive conditions.
- It lends itself to exposition for ease of learning.

However, it has some weaknesses like the lack of human voice and creating total impression instantly as information comes in a sequence. This realization leads to providing access devices within the modules and a simulated conversational language style. Additional support services can be provided in the form of limited face-to-face or use of electronic devices.

Modules contain all the conceptual material the students need to know to successfully complete the programme and upon which they will be assessed. The module is therefore the distance learners' equivalent to the lectures given to the conventional students. To help students interpret and deepen their understanding of the conceptual material, IDE also provides a limited number of face-to-face contact sessions. The contact sessions tend to scope the conceptual material, clarify areas that students are finding difficult, and provide the students with insights and guidance on what is likely to be assessed. No new conceptual material needs to be introduced during contact sessions as the module must contain all the necessary conceptual material.

The tutorials exist to encourage the students to enter into discussions and debate about what they have read in modules or through group tasks, core or extended reading materials. The expectation is for the student to contribute and the tutor to guide or facilitate learning.

Most IDE students tend to face various challenges, some of which are the following:

- Time management (due to combining study with employment and families to look after)
- Self-motivation
- Social isolation
- Lack of regular contact with lecturers and other students; and
- Costs and other challenges of attending face-to-face sessions.

Considering such challenges, authors of IDE learning materials are urged to ensure that Module design and development is based on a student-centred approach, illustrated through the following:

- A comprehensive understanding, through analysis of learner characteristics, of who the learners are, what their needs are, what their strengths and constraints are, and how they learn.
- An analysis of instructional needs, environment, and preparedness for a particular teaching-learning material. These shall include the

level of the course, the nuances and requirements of the discipline, and the goals of learning.

- Selecting instructional events and experiences woven around the context of the learner (that is, his/her workplace, family, cultural background, etc.). Since the socio-cultural, personal and professional contexts are inextricably related to the learner's cognitive structure (how the learner perceives and learns accordingly), learning events and experiences need to be designed to be situated in that context. Culture plays an important part in determining what and how to learn.

- Empowerment of learners so that they are able to reflect on what they are doing and learning, including its wider applicability. This can involve helping them to move towards deep and transformative learning. The study skills, tips, and activities given inside the course units, along with mentoring provided at the learning centres, should facilitate this.

- Choice of media used for instruction/learning is to be governed by largely learner choice and capacity, and the learning goals. In future, IDE will implement blended learning, to determine which self-learning course units shall form the base and dominate the media basket.

- Application and weaving of learning around individual and social problems. Such problems, based on the discipline, area and level of study, and chosen from the context of the learner can be selected, designed and integrated into the instructional events and experiences. Examples, illustrations, case studies, and activities given inside the course units should address this aspect.

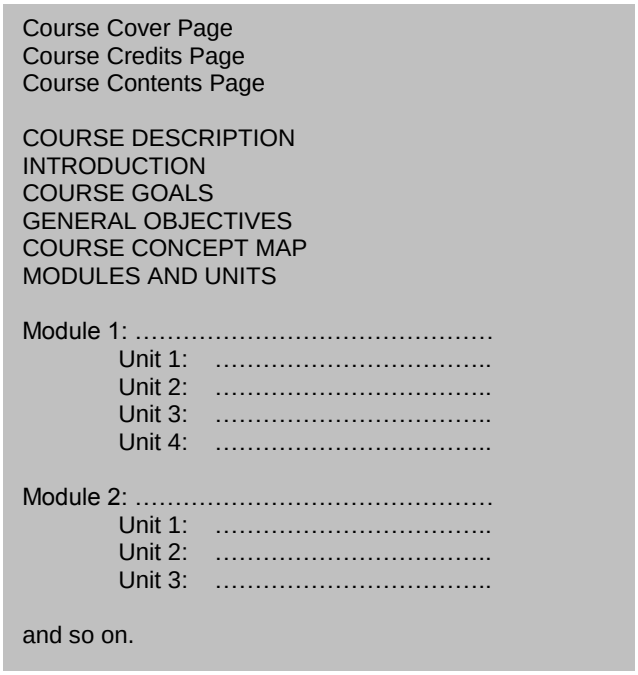
- The learning materials include helpful transitions to emphasise the connection between concepts or provide a link from one section to the next. Effort is made that the content/text, learning objectives, self evaluation and activities, examples and case studies, module guidelines and study skills, facilitation for reflection, advance organisers and reflective conclusions are to be in line with the logical/modular sequencing of the unit.

"Modules replace lectures".
A module is a lecture-in-print.

Section 3: In-House Module Template

Template Structure

IDE recommends an in-house style based on a template for your module which should be the same for all other courses that the student will study to successfully complete the programme. The module outline structure should include all the aspects noted in the illustration here. The module outline may also include information about other media used to transact the curriculum as well as the assessment strategies. The outline gives detail on what the student needs to do in order to successfully complete the course.



Template Icons

Examine the in-house style template given below at one go so that you have a comprehensive picture of how a unit should look like and what it should include. You may choose some or all of the template features; for example, case study, discussion, note it, group activity (which may be undertaken at the learning centre), help, tips, reflection, and readings may all be useful for your course. Use any feature you like, but keep in mind that some features are required ones for each unit.

Example of In-house style

UNIT 1……

CONTENTS

- ……
- ……
- ……
- ……

INTRODUCTION

……


OUTCOMES (learning objectives)

After going through this unit, you should be able to:

- ……


TIME

……


STUDY SKILLS

……

HEADING 1

……

Sub-heading 1.1

……

Sub-heading 1.2

……


ACTIVITY 1

……


CASE STUDY

 DISCUSSION

……

HEADING 2

……

Sub-heading 2.1

……

 ACTIVITY 2

……

 NOTE IT

- ……

Sub-heading 2.2

……

 GROUP ACTIVITY

……

 HELP

 TIPS

- ……

 ACTIVITY 3

……

 TIPS

- ……..

 ACTIVITY 4

……

HEADING 3

 ACTIVITY 5

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 REFLECTION

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 SUMMARY

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 READINGS

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 ASSIGNMENT

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 TIPS

……

 ASSESSMENT

……

Section 4: Components of Module

Unit Structure/Contents

We are generally tempted to look at how a unit needs to be organised and presented (that is, taught, or in other words, in what order the students should learn the contents) from the point of view of how it has already been taught or how we have taught the lesson/topic before. In the case of distance teaching (or, independent self-learning), we need to revisit how it should be taught (organised and presented). There are many principles to help us on how to structure each unit, including 'simple to complex', 'known to unknown' and 'concrete to abstract'. What could help us more is a combination of the knowledge base of the discipline or the subject itself and the creativity of the teacher as to how to logically sequence and link the main concepts in a unit. The contents of a typical unit are shown in Table 1 as follows:

Table 1: Typical components of a unit

Stage in the unit	Typical items	
1. Introductory material	• unit number and title • an introduction • contents list • statement of pre-requisite knowledge (or a pre-test) • learning objectives for the unit • list of any equipment needed for studying the unit • other resources needed for the unit (e.g., a textbook) • time required for the unit	
2. Teaching and activities	• examples • explanatory text • activities with feedback • diagrams and illustrations • topic summaries	This stage is usually divided into topics, each topic matching one learning outcome
3. Closing material	• unit summary • self-test based on the unit learning objectives • link forward to the next unit	

(Source: Lewis, 1990, cited in Freeman, 2005)

How to Structure a Unit

Let's look at an example of a Unit on 'Universe and Earth'. Three concept maps showing the order the contents should be organised for the unit are given in Table 2. Go through the concept maps to find out which one is the most logical and appropriate for you.

Concept map 1	Concept map 2	Concept map 3
1. Light year: Unit of distance stars and galaxies 2. Universe – Colonies of stars – Galaxies 3. Constellation – group of bright stars 4. Solar system – part of Milky Way 5. Big-bang Hypothesis 6. Solar system – Sun+9 planets (earth) 7. Earth – Atmosphere, Hydrosphere, Lithosphere 8. Rock cycle – three major groups of Rocks 9. Earth – Crust, Mantle, Core	1. Universe and its origin 1.1. Galaxies and constellations 1.2. Light year 1.3. Milky way 2. Solar systems 3. Earth 3.1. Atmosphere 3.2. Hydrosphere 3.3. Lithosphere (Rocks) 3.4. Structure of Earth	Earth: surface as we know it Land Inside the earth Lithosphere – Crust– mantle-core Outside the earth Hydrosphere – Atmosphere, Biosphere 2. The system Earth belongs to Planets, comets The Sun-solar system 3.The system, the Solar system belongs to Milky way Galaxy – types, etc. 4. The system galaxies belong to Universe Size of Universe (Light Year) 5. How was the Universe created 5.1 Theory 1 5.2 Theory 2

Table 2: Concept map on 'Universe and Earth'

These concept maps were chosen from about 20 concept maps created by the participants in a workshop (see IGNOU Handbook 5). The three selected are all based on some principles of teaching or learning. The second concept map is logically stronger than the first concept map, though the third concept map may score highest overall since it moves from something that is known (the earth), and then proceeds to a description of the system and a discussion on the unknown or abstract (the universe and its creation).

Let's consider these aspects for a module on Geography for Course X students (cf: Clarke & Mohammed, T&T Workshop).

- Can you see ways to improve the module structure?
- How would you develop a module structure based on the example above?

Example of Concept Map for Module 1

Figure 1: Concept map for 'Map Reading and Other Skills'

(*Source: Clarke and Mohammed, T&T Workshop*)

Handbook Activity 1

At this stage, pause and reconsider your own module structure. Develop a 'concept map' for your module with proper linkages among various concepts/themes, and divide your course into various modules, and each module into units. You may take about *two hours* to do this activity.

Introduction, Overview and Advance Organiser

Each unit needs an introduction. The introduction acts as signpost or advance organiser for the students, and also provides a link with the preceding unit (or preceding modules if required). Therefore, in the introduction to the unit, you need to do three things – link up with the preceding unit(s), provide a brief explanation about the logical sequencing of the concepts and sub-concepts in the present unit, and explain what is expected from the students.

According to Freeman (2005) the basic purpose of an overview and advance organiser is to help students to make sense of what they are about to learn. An advance organiser can take any of the following forms:
-to remind students of what they have already learned by providing a short summary of the key points of the previous topic
-to remind students of what they already know such as in a course on marketing to remind the students of the wealth of knowledge they already have of specific marketing techniques.
-to provide a map or chart to show how the new topic links to previous topics; and
-to provide an overview of what students are about to learn.

Let's look at a sample module overview, which is based on an example of a geography module.

SAMPLE MODULE X OVERVIEW

Geography is the study of the Earth as the home of human beings. It is concerned with spatial patterns, human and natural systems and the interrelationships between them. This module will help you to understand the issues involved in the use and development of natural resources and in conserving the natural environment.

The subject matter provides the skills and knowledge of the ***natural and human systems***, which will guide you in making informed rational decisions in using and managing natural resources. It will also contribute to your enjoyment of travel and leisure. The material in this module will satisfy your desire to acquire a foundation in Geography.

MODULE GOALS

The material is intended to satisfy the following course aims:

1. Develop an understanding of geographical phenomena.
2. Stimulate interest in the nature of Natural and Human Systems and their interaction.
3. Promote an understanding of the processes at work in Natural and Human Systems.
4. Develop an understanding of the interrelationships between the natural and the human environment.
5. Foster an awareness of the need for the sustainable use of our resources.
6. Develop practical skills to enhance geographical knowledge.
7. Promote knowledge and understanding of geography at the local, regional and global scales.

GENERAL OBJECTIVES

On completion of this programme it is hoped that you will be able to achieve the following objectives of the module:

1. Understand geomorphic, atmospheric and biotic processes.
2. Acquire appropriate skills and techniques used in geography.
3. Appreciate the forces affecting the spatial development and distribution of human population;
4. Demonstrate knowledge of the types, functions and growth of human settlements;
5. Develop an awareness and understanding of the factors influencing patterns and changes in economic activity; and
6. Appreciate the relationship between the natural and human systems.

Introduction from Unit 'Natural Hazards' (Geography)

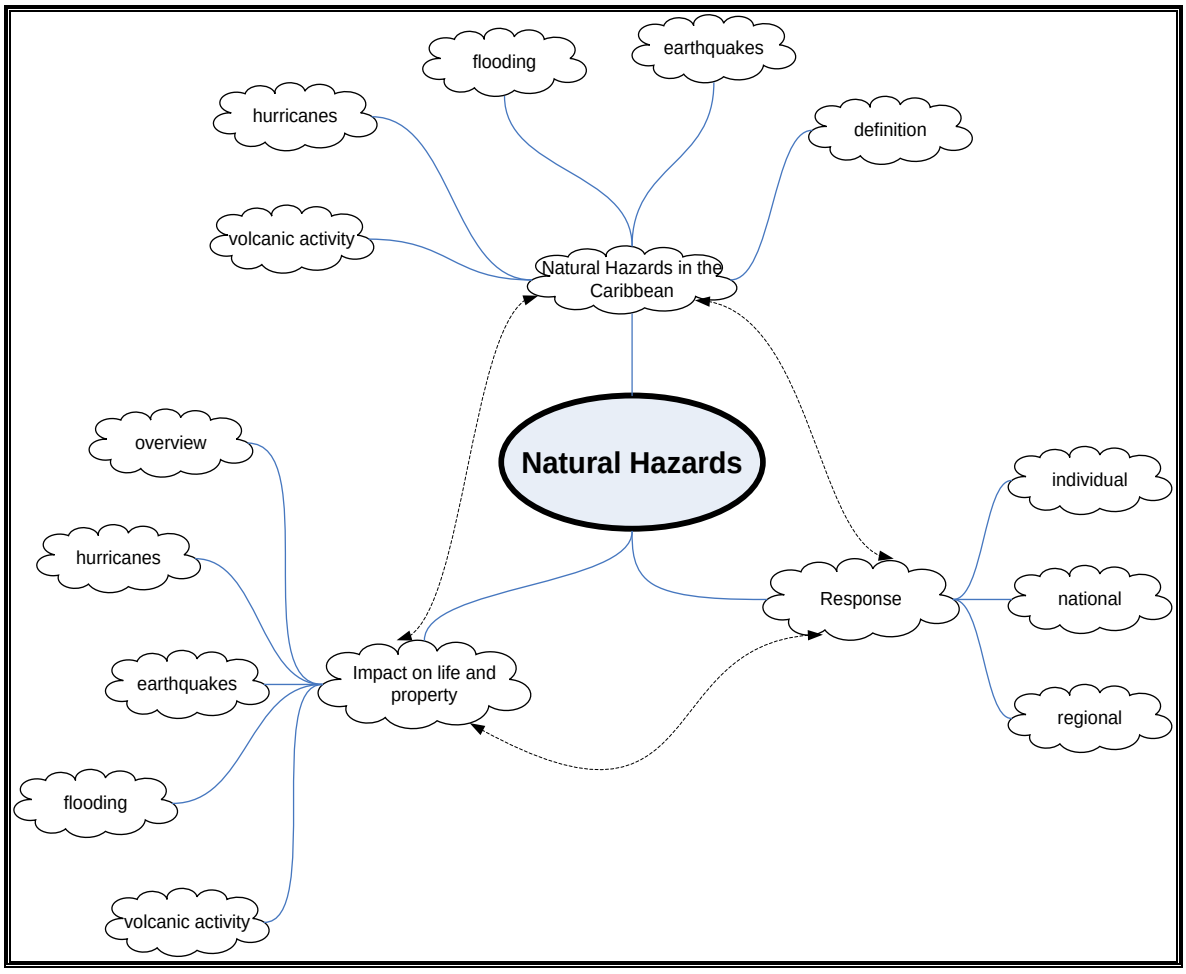
1.1 INTRODUCTION

The Caribbean is not different from any other part of the world in that it is prone to hazards. This unit looks at some of the natural hazards which affect the region. The unit is divided into four areas:

- Definition of a natural hazard
- Natural hazards in the Caribbean
- The Impact on life and property of these hazards
- Response to natural hazards

On completion of the unit, you will develop an understanding of the natural hazards faced in the region, and the way in which these hazards impact on the lives of the people and economies of the region. You may like to look at the concept map for the unit as given below, and see what concepts and sub-concepts are included in the unit and in what way they are related to each other and to the main theme of the unit.

Concept Map for Unit 1: Natural Hazards



You will notice that the writer of the preceding example has included the unit concept map as part of the 'Introduction' to the unit. You need to take a decision for its placement in the unit, and this should be maintained throughout the module.

Outcomes/Learning Objectives

Learning objectives are one of the most important components of self-learning materials. In fact, the first step in the development of any material is to develop the learning objectives from the learners' point of view. The objectives indicate to the course team the quantity and quality of learning to be taught/achieved, the examples and activities to be given, and the way learners will be assessed. For most distance teachers, Bloom's Taxonomy for formulating learning objectives has proven to be very useful. The taxonomy suggests that the human mind can be divided into three domains: cognitive, affective, and psycho-motor. The widely used cognitive domain – starting from the low level of 'knowledge' to the highest level of 'evaluation' is summarised in Table 3. Look at the table and examine the six levels; each level has corresponding explanations, examples, and action verbs to be used in formulating learning objectives.

Table 3: Levels of learning in Bloom's taxonomy

Level	Explanation	Example	Action Verb
Level 6: Evaluation	Ability to judge the value of something in a holistic manner.	• Evaluate the efficacy and appropriateness of. • Determine the value of something for some purpose.	Judge, evaluate, defend, support, determine, recognise
Level 5: Synthesis	Ability to pull together the parts to a cohesive whole.	• Collate the issues into a comprehensive whole-based on some theoretical backup.	Argue, summarise, organize, derive, conclude, generalise, collate
Level 4: Analysis	Ability to analyse	• Differentiate among	Differentiate, separate,

	different components and establish relationships.	various categories. • Compare two/three sets of premises with arguments.	compare, justify, criticise.
Level 3: Application	Ability to apply in context or in new situations.	• Compute the value by using the formula. • Select and classify on the basis of certain parameters.	Compute, construct, predict, demonstrate, use, choose, select.
Level 2: Comprehension	Ability to explain.	• Explain the reasons why. • Illustrate the concept further. • Classify the sequence into various parts.	Explain, illustrate, identify, formulate, contrast, classify.
Level 1: Knowledge	Ability for rote learning, and to recall/reproduce facts.	• Reproduce paragraphs, definitions, points. • State parts of a definition; list the characteristics .	Define, state, list, recall, reproduce.

Learning objectives are the most crucial aspect of the course unit. While these objectives need to be expressed from the learner's point of view (rather than what we have been thinking about the traditional view of a teacher's instructional objectives), they also need to match with and conform to the unit concept map/unit content structure, the unit introduction, as well as the goals of the learning activities and their outcomes given at various intervals inside the text. These also need to be related to the unit/module assignments as well as the overall assessment mechanism and goals for the course. Below are three examples of unit objectives/outcomes based on geography, chemistry and physics concept maps. How well do the three – content

structure/concept map, introduction, and learning objectives/outcomes – match each other?

Learning Objectives (Unit on 'Natural Hazards')

Objectives

After completing this unit, you should be able to:

- Define a natural hazard.
- Outline the different categories of disasters.
- Describe the impact of volcanic eruptions on life and property.
- Describe the impact of earthquakes on life and property.
- Describe the impact of hurricanes on life and property.
- Outline the individual responses to natural hazards in the Caribbean.

Learning Objectives (Unit on 'Polymers')

Outcomes (learning objectives)

After completing this unit, you should be able to:

- Define polymers.
- Distinguish between addition and condensation as reactions in the formation of polymers.
- Name examples of polymers formed by (i) addition reaction, and (ii) condensation reaction.
- Draw diagrams to represent the formulae of monomers.
- State at least one use of each of the following types of polymers: (i) polyalkene, (ii) polyamide, (iii) polyester, and (iv) polysaccharide.
- Show how the monomers are linked in the structure of the polymer.
- Demonstrate the differences in properties between a monomer and the polymer it forms.

Learning Objectives (Unit on 'Force')

Outcomes

After completing this unit, you should be able to:

- Recall that a force can cause a change in the size, shape or motion of a body.
- Identify forces in real life situations.
- Determine the type and effects of forces in real life situations.
- Determine the weight of objects using the relationship (weight = mass $\times$ gravitational field strength) W = mg (g = 10 NKg-!).
- Investigate the relationship between extension and force for springs and elastic bands.
- Solve problems involving the proportional relationship between force and the extension it causes.
- State Newton's first law of motion.
- Identify situations in which a turning effect of a body will result from the application of a force.

You will notice that the objectives are written from the learner's point of view, that is, what he/she will be able to do after going through the Unit. You may use the objectives and corresponding action verbs for all three domains – cognitive, psychomotor, and affective – in formulating your objectives.

Time

It is important that you formulate an understanding of the average time that all your learners will take to go through and comprehend the unit, including working on various self-assessment questions and/or activities that you have set (or will have to set) for your unit. The student workload for one unit cannot be seen in isolation; you need to take into account the entire course workload and its distribution across the modules and units. As the workload or credit value of each module varies, the workload across units will also vary – some involve more hours of study and some less. The total time estimated for a unit includes the time needed for reading and comprehending the unit and the time required for working on the various activities.

Study Skills

You need to determine and mention all prior skills that the learner needs to have in order to comprehend the course unit. This may include prior understanding of some concepts, prior reading of certain course units or texts, prior knowledge of or completion of certain exercises and experiments, certain types of study and reading skills needed to access the text, as well as all the materials (notebook, workbook, course unit, instruments, etc.) the student will need to assemble before starting the course unit work.

Handbook Activity 2

Based on what you have studied so far and based on the examples of unit concept map, content structure, introduction, and outcomes/learning objectives, select one of your course units and develop all the information the student will need about the time it will take to complete each unit and the study skills required. Give yourself *two hours* to do this activity.

Headings and Sub-Headings

The most crucial aspect of the unit is the presentation of the main text – concepts and sub-concepts – through headings and sub-headings. The unit template presented earlier showed that each heading needs to be numbered separately and in sequential order, and that there may not always be sub-headings below a heading. A heading is a main concept in the unit. The heading or the concept needs to be expanded or explained with facts, figures, tables and charts, examples and illustrations, and activities to engage the learner in the content.

Language aspects

A writer needs to keep in mind that:

- The content should be presented in short sentences and simple sentences.

- Sentences and paragraphs should flow like a storyline and all be logically related.
- Paragraphs should be written in simple language using short sentences rather than complex ones. The language should maintain a conversational and personalised style. Use 'you' and 'we' to address the student directly; this way the student feels as if the teacher is there with him/her to guide and explain..
- Sentences should be grammatically correct.
- Linkages should be established among the concepts throughout the unit, and with other units and modules in the course.
- Both text and presentation should involve 'in-text questions' to keep discussion going, engage the learner, and to emphasise connections between concepts. For example, phrases like 'By now you may have realised …'; 'What do you think of this at this stage …'; 'Can you think of any alternative to …'; and 'Consider the explanation provided below, and see if you agree with it …'; are all ways to prompt the student to reflect on the concepts they have been studying.
- There should be plenty of appropriate examples and explanations to support the concept being discussed; a student may not understand fully if only one example is given. Content should be presented from multiple perspectives with alternative or parallel examples.
- Text should be supported by or replaced by tables, diagrams, figures and illustrations. The content should include a variety of activities designed to engage the learner. (You'll learn more about activities in the next section.)

Language (and its difficulty level) is very important to reading and self- learning. It is important to keep sentences simple and short. Long, complex sentences increase the difficulty level and make it harder for learners to comprehend the text.

Look at the two examples given below; the first uses complex sentences, and the second one has been rewritten in simple language. Which style do you prefer? Are there changes you could add to make it simpler and more engaging?

Example 1: "When the entire country was devastated by furious floods and murderous famine, when the people of the land, finding no alternative to keep their bodies and souls together started slaughtering the emaciated cattle and hunting for grass, nuts and roots, when the foreign enemy was amassing his soldiers and arms with a view to inflicting a defeat such as one that would never allow either the ruled or the ruler to recover from the bleeding, mortal wound and the internal foes were at each other's throats to grab the spoils from whatever was left undestroyed by the fury of the natural elements."

Example 2: "The whole country was ruined by floods and famine. People were killing the cattle and collecting grass, nuts and roots to survive on. The foreign enemy was preparing to attack the country and bring it under his rule. The internal enemies were trying to plunder the wealth of the country."

Activities

So far you may have noticed the use of terms like 'self-assessment questions', 'self-check questions', 'check your progress', 'exercises', 'activities', etc. to allow the learner to pause and assess his/her own progress in learning. These are all called 'Activities' in this in-house style template. Students need to do something while they study in order to be *actively engaged in their learning*.

Activities, given inside the text, can facilitate or engage the learners in many ways:

- Engage them in self-reflection and thinking for themselves.
- Help them draw their own inferences based on the content of the text.
- Locate special/important features in an argument.
- Engage in carrying out or repeating an exercise and see the consequences of doing things differently.
- Help them develop arguments or explanations and solutions to existing problems.
- Relate their ideas to the context of the text and to real life situations.

Activities can take the form of any one or a combination of the following types given in Figure 3.

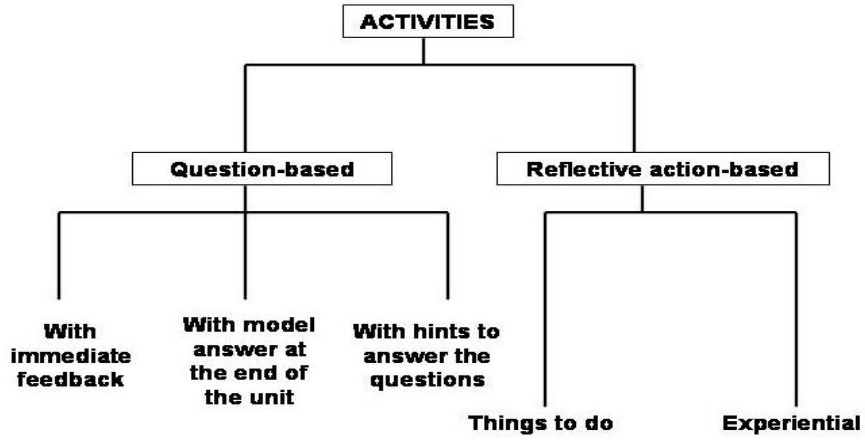


Figure 6: Variety of activities
(*Source: Mishra and Gaba, 2001)*

Any activity that you design should contain the following:

- Activities should be based on the self-learning unit being studied; they should be based on the context of what one is reading.
- We need to explain the rationale of the activity – what topic does it relate to; what is expected of the learner; what materials can be used to do the activity; what benefit is derived from doing it; etc. There should be proper and comprehensive instructions to do the activities.
- Every activity must include the average time to be taken to complete it – this allows learners to plan their time and make sure that they are progressing.
- Sometimes it's necessary to provide some kind of feedback for the learner. This can be in model answers at the end of the unit, explanatory text immediately after the activity, and so on.

Let's look at some examples of student activities designed within a variety of self-learning materials.

Activity on Instructional Design (Panda, 2007)

??? Activity 6

Look at Figure 9 (on page 22 of the text). After reviewing the content, consider how you might rewrite the beginning part to improve it further, or develop the introductory part of the unit which you selected earlier. You may take one hour to do this task.

Activities on Module 'Map Reading and Other Skills' (Geography)
(by Michael Clarke, T&T Workshop)

Activity 11

What aspects of a map of Central Trinidad drawn in 1975 would be unreliable at this time?

Activity 14

Take about 5 minutes to examine the world maps in your atlas. List them under two headings: Human and Natural. Compare your list with the one at the end of the Unit.

Another example of an activity based on a learner experience follows:

ACTIVITY 1

Try to come up with your own ideas in order to answer the question above. Make notes in your journal about ways to address the following in distance courses:

(1) oral traditions
(2) learning as a group affair
(3) rote learning as a cultural norm

I hope that you have been able to come up with a number of ideas that illustrate that a well-designed course at a distance can address cultural differences. Here are some real-life examples.

*In **Guyana**, learners who live far away from the institution, use audio-conferencing to supplement print materials. This is done because the Guyanese culture has a strong oral component. The course integrates the print and audio conferencing meaningfully.*

*The **University of the South Pacific** also uses audio-conferencing to create communities of learners at a distance, because its learners come from countries where there is a strong tradition of group interaction for learning.*

*And in **India** there is a traditional* tendency *(habit) towards passive learning. Thus the Indira Gandhi National Open University uses carefully designed interactive print materials together with face-to-face support to stimulate new approaches to learning (COL 1995:11).*

Source: *Introduction to Materials Development in ODL.* ODL103-H, p.3 (UNISA)

Activities on Mathematics (IGNOU Handbook 5)

Polynomials consisting of one, two and three terms are known as monomial, binomial and trinomial, respectively.

E 5) Identify the polynomials from amongst the following and label them as monomial, binomial or trinomial.

~~iii)~~i) ____ $x + 3a^2$
~~iv)~~ii) ____ $3ab^2c^3d^4e^5+10^{30}$; where a, b, c, d, e are all variables.
~~v)~~iii) ____ (1/2)p + (1/3)q + (1/4)r; where p, q, r are variables.
~~vi)~~iv) ____ $\frac{x+9^{64}}{y-9^{64}}$
~~vii)~~v) ____ x/y
~~viii)~~vi) ____ 1.

A term of a polynomial may be composed of several factors. For example, 2xy has 3 factors 2, x and y. Each factor is known as the **co-efficient** of the rest of the term. Thus, in 2xy, 2 is the co-efficient of xy and x is the co-efficient of 2y. The numerical factor is called the **numerical co-efficient**. For example, 3 is the numerical co-efficient in 3a or 3xy. The co-efficient of x in the term x is 1 (since x=1x) and that in –**x** is –1.

E 6) Find the co-efficient of x, y and z in each of the following terms:

i) xyz
ii) $3x^2yz$
iii) $– yzx^5$

What are their numerical co-efficients?

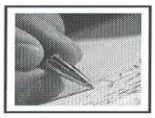
Activity: Child Care and Development

1) Match the items given in column 1 with those in column 2.

	COLUMN 1		COLUMN 2
a)	Head-to-toe development	i)	The child initially uses the whole arm to reach for an object. Gradually she learns to use the muscles of the wrist and fingers to pick up an object.
b)	Centre-to-end development	ii)	First the child learns to control the movements of the neck and later develops the coordination of lower limbs, which enables her to learn to crawl and walk.
c)	Differentiation	iii)	The understanding of numbers leads to learning of more complex concepts like addition and subtraction.
d)	Integration	iv)	The child learns to recognize the mother's voice from other people's voices.

(Source: Block 1: Introduction to the Child Care and Development, Unit 3: Principle of Development, IGNOU, p.38)

Sample activity to practice using principles follows:



ACTIVITY 1.3

STUDY pars 2.20–2.31 of the textbook and then do the following:

1 List two exceptions to the general rule that a partnership is not regarded as a separate entity. Write these exceptions down.
2 Rhamjee, Pule and Constance formed a partnership. Rhamjee then becomes insolvent and his estate is sequestrated. Pule and Constance want to know the effects of Rhamjee's insolvency on the partnership. They come to you for advice.

Make sure that you understand the legal nature of a partnership before you start answering this question. You should tell Pule and Constance that the partnership estate and their personal estates will be sequestrated, but that Rhamjee's creditors will first be paid from his personal estate before the trustee will look at the partnership estate. A further consequence is that the partnership will dissolve, since the insolvency of one of the partners is a ground for the dissolution of a partnership. I will tell you more about this in study unit 4.

Source: *Entrepreneurial Law*. MRL101F, p. 4 (UNISA)

Activity: Family Welfare Centre

You have already learned in Block 2 of this course (PGDMCH-1) about providing MCH services in urban areas through urban family welfare centres, MCH centres and four types of health posts. You must visit one urban F.W. Centres or MCH centre of type 'D' health post functioning in a city/town.

During the visit to the particular centre you must study:

- Staffing pattern
- Services being provided
- Infrastructure services available to provide these services
- Records/reports
- Population coverage
- Problems being faced in providing the desired services

You may collect the information on above points through:

- Observation of various activities being carried out there
- Study of records
- Discussions with health staff at the centre.

You must record the findings along with your observations and get it signed by the academic counsellor.

(Source: PGDMCH1: Preventive MCH, Block 5: Practical Manual, Unit 4: Field Visits, IGNOU, p. 46)

Handbook Activity 3

Based on the above discussion and examples, design at least two types of activities for your course unit(s) mentioning context, rationale, time needed, and feedback mechanism. You may take *one hour* to do this activity.

Case Study

At some points in the text, you may need to use a brief case study to exemplify a process, an issue, a situation, an event, or a product. The case study may be put in a box with proper linkage to the preceding text (and sometimes the preceding units) and also continuity with further explanations in the succeeding texts. The case study should

relate to the ideas under discussion, and should probe the concept deeper so as to further enlighten the learner. Case studies may be followed by reflective questions for the learners to reflect on and record responses.

A sample scenario based activity follows:

Read the scenario below and then answer the following questions:

1. In planning his changes, what things did Robert Ruthless omit to do?
2. What factors might explain the problems with the computer system, staff absences and resignations?

If Robert Ruthless had called you in at the start to help him plan a change programme, what advice would you have given him?

Robert Ruthless had decided to re-organise the sales and marketing office. Ever since he could remember, it had been organised around sales areas. As the product range had grown and the products had become more complex, he saw staff having more and more difficulty coping with the technical aspects of what they were selling. The solution came to him in a flash: re-organise the staff around product groups. Since the sales software was area-based, he thought this was a good time to have a new computer system; staff were always telling him how antiquated the current system was.

So, Robert closed his office door, wrote a specification for the new system and sent it off to his pet ITC company. Whilst the programmers got to work on the new system, Robert planned a high-powered presentation on his new working arrangements and wrote a detailed staff manual.

A few weeks later, he was ready to announce the changes. In great excitement, he went through his presentation. At the end there was silence – not a question or comment.

Not long after, Robert was off sick for a long time. From the first day of the new system, everything seemed to have gone wrong: the staff had endless problems with the computer system; staff absence seemed unusually high; there had been several unexpected resignations; and customer complaints were at record levels.

Source: *Entrepreneurial Law*. MRL101F, p. 35 (UNISA)

Discussion

Distance learners do not find many occasions to be face-to-face with their tutors and peers. Therefore, you may like to locate some questions in some of the units which may be taken up for group discussion by the learners and their tutor at the learning/ study centres. Such questions or issues may need further clarification, debate, reflection, and negotiation of meaning in group contexts. An example of a group discussion activity is given below.

Group Discussion on a Unit on 'Human-Environment Interactions' by Karima Mohammed

Hazards can turn into disasters, but only under certain conditions. Reflect on those conditions, and deliberate if such conditions can be prevented in the national context of Trinidad and Tobago. Discuss this in your study centre with the tutor and fellow learners, and prepare a brief report of about 250 words and pass on to your tutor for comments.

Note It

You may wish to provide some space within a unit for students to jot down important points, or ask the students to make their notes in a separate workbook. Alternatively, you can list the important points from the unit under the heading 'Note It' to make it easy for students to refer back to when they want to review what they learned.

Group Activity

Unlike discussions, (which the student can discuss individually or with their tutor), some issues can be identified within the unit for all the students to discuss and undertake as a group activity to be done and reported either at the study centre or at any place they decide to meet. Given below is an example of a group activity from the unit 'Human-Environment Interactions'.

Group Activity

When you meet at your NOSTT centre, get together with some friends and complete the following:

- Make a list of all the things you should keep in your home in preparation for a natural disaster.
- Identify a plan of action which you would implement to deal with each of the three major hazards which impact on the Caribbean countries.

Reflection

It is also important for us as teachers to engage our learners at different intervals in a course of study to take a pause and critically reflect on what they have learnt. This may mean 'reflection-in-action', that is, reflecting while studying, or 'reflection-on-action' (or reflecting on what they have studied so far). This instrumentality is essential if we would like to take our students towards deep learning. Besides designing reflective activities within the text, consider also providing 'questions for critical reflection' at the end of each unit, or at the end of each module. You will notice that the 'activities', 'questions for critical reflection', 'assignments' and 'summative assessment' are inextricably related to each other to jointly achieve the stipulated course objectives. Review the example below; are there ways for you to design 'questions for critical reflection' in your course units?

Questions for critical reflection

1. Consider your experiences at a recent training programme you attended. Determine if the instructional method used was appropriate or if you could have learned more had the instructor used a different method or a combination of methods.
2. Reflect on a training session you conducted. How did you prepare for conducting the session? Review your lesson plan, and analyse what changes you would like to make if you were to do it again

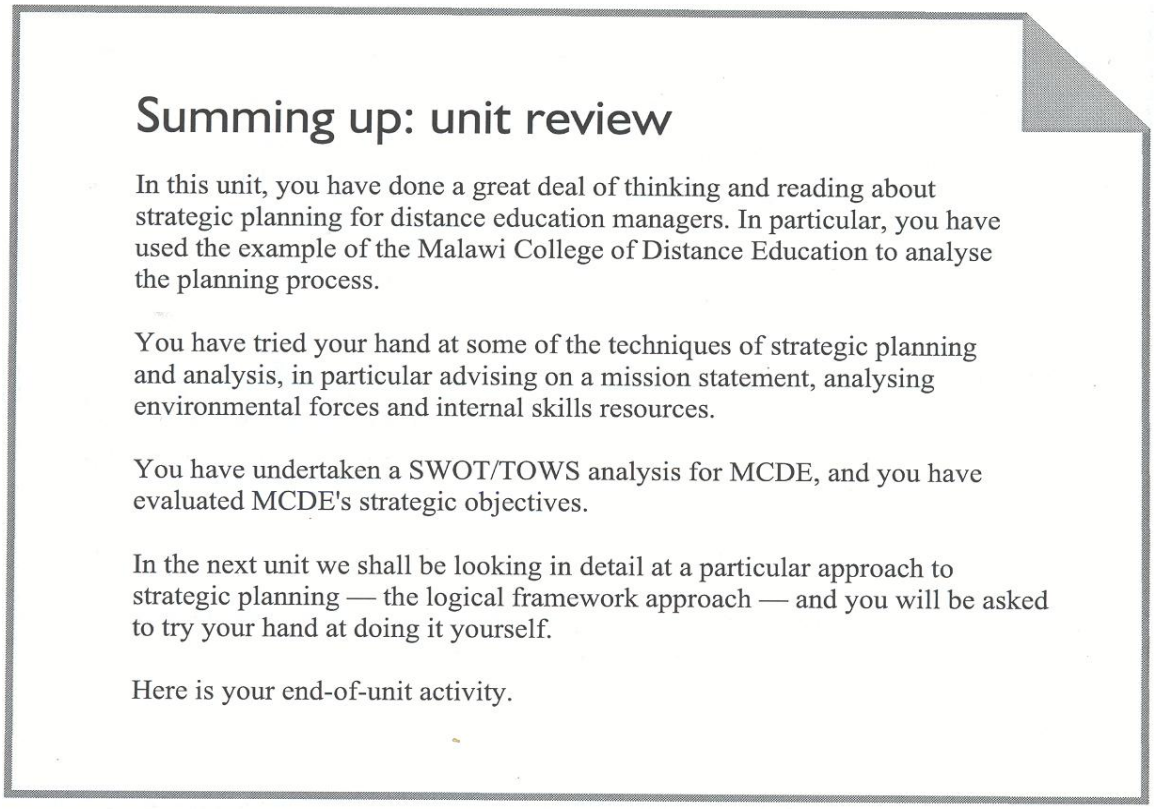
(Source: S. Mishra, 2007)

Summary

The summary is a precise but comprehensive abstract of what has gone into the unit – it recaps and logically relinks the main concepts and sub-concepts (themes and sub-themes), and also tells what is emerging from the unit and in what way this is related to succeeding unit(s). The summary also takes into consideration the outcomes or learning objectives set at the beginning of the unit. The summary can be presented in any form: in paragraphs, in a table, in bullet points, or as a tree diagram. Below are some examples of summaries.

Summary

In this unit we discussed instructional design as a process. We defined instructional design as a systematic process of designing instructional solutions by identifying the learning needs and causes of learning problems, specifying learner objectives, and identifying methods, media and strategies to deliver instruction. In the process we also considered the importance of formative and summative evaluation to receive continuous feedback about the process of instruction and assess its overall quality. We also discussed about ten different models of instructional design and then grouped them into three major categories: classroom-based, product-based and systems-based. The last category is often used in an organizational context, while the product-based models are more suitable to design instructional materials in print, audio, video and multimedia. We concluded by identifying the 14 common tasks in instructional design and listed the first principles of instruction given by David Merrill. The first principles of instruction will guide instructional designers in whatever model they use. We also briefly discussed the constructivist approach to instructional design. By combining the constructivist approach, first principles and an appropriate instructional design model, instructional designers can design effective instructions for most situations, though we also understand that none of the models fit all situations. Thus, it is the situation and the problem at hand that will guide you as instructional designers to use appropriate design models. (Source: Unit on 'Instructional Design Processes', S. Mishra, 2007)



Summing up: unit review

In this unit, you have done a great deal of thinking and reading about strategic planning for distance education managers. In particular, you have used the example of the Malawi College of Distance Education to analyse the planning process.

You have tried your hand at some of the techniques of strategic planning and analysis, in particular advising on a mission statement, analysing environmental forces and internal skills resources.

You have undertaken a SWOT/TOWS analysis for MCDE, and you have evaluated MCDE's strategic objectives.

In the next unit we shall be looking in detail at a particular approach to strategic planning — the logical framework approach — and you will be asked to try your hand at doing it yourself.

Here is your end-of-unit activity.

Source: *Introduction to Distance Education*. M2, p.18 (International Extension College, Cambridge)

Readings

Since self-learning packages or self-learning units cannot contain all the content students need, you need to suggest additional readings. However, sometimes you may want to make students aware of other exercise notes, educational games, textbooks, or practice books so that they can get additional benefit from working with alternative materials. You may also wish to include a 'glossary' of important terms used in the unit/module (either at the end of the unit or the end of the module). Keep in mind that you should only suggest additional materials when further reading is essential. The materials must be low cost and easily available to the students.

Assignments

Assignments are an integral part of any instructional system, and are of utmost importance for distance learning, too. They form part of continuous assessment in distance education and you will need to decide the number of assignments to be included in a course. The workload involved in completing the assignments should be counted in terms of student study hours and be included in the credit hour calculation for your course.

The purpose of assignments is twofold: i) to provide opportunities for the learners to interact with their tutors and receive feedback (essentially they are learning tools); and ii) to evaluate students with a grade or score and let them see where they stand in the group, and also assess their progress in the course. Tutors are required to write constructive and teaching comments on students' assignments and send them back for feedback, further motivation, and self-learning.

Assignment questions can be *essay type* (for example, open questions, practical questions, theoretical/conceptual questions, project-based, and so on) with a specified length or word limit (perhaps 1200 or 1500 words); *short-answer type* (where a student is required to write a short answer of 300 words); and *objective type* (for example, true/false, fill-in the blanks, yes/no, multiple choice, matching, etc). Assignments can be *tutor-marked* (for all of the above types, the tutor reviews the student's work and teaches through tutor comments and awards a grade or score), or computer-marked. However, in all cases, assignments are treated as home work and returned to the students with tutor comments and grades.

Section 5: Specifying a Module Outline

Developing a Module Outline

In this section, we address the issue of specifying a good quality module outline. The Module outline is particularly important for judging the pedagogical soundness of the proposed module. Indication of its conceptual value is also provided. With this in mind the Outline has ten parts:

1. Module Title
2. Level (year)
3. Scope, Aims & Objectives
4. Required prerequisites (if any)
5. Learning Outcomes
6. List of Units to be Covered
7. Pedagogical Approach Table
8. Constructive Alignment Table
9. Self assessment and Unit Objectives Mappings
10. The Assessment Rubrics

The ten parts are completed using the Module Outline template (see appendix A). Most of the ten headings are usually well understood. The four exceptions are probably Pedagogical Approach Table (Part 7), the Constructive Alignment Table (Part 8), Self Assessment and Unit Objectives Mapping Table (Part 9) and the Assessment Rubrics (Part 10).

2. Part 7: Pedagogical Approach

The Pedagogical Approach Table is based on a general pedagogical framework developed by Mayes (1995). In its simplest form, Mayes argues that learners go through three learning stages. The first stage, conceptualisation, involves coming into contact with other people's concepts (or other people's representation of the world – Laurillard (1993)). The role of the teacher is critical to help the learner understand the symbolic representation being used (symbols) and to interpret or reinterpret the concepts in a way that students can connect with (i.e. based on the student's prior knowledge or understanding). The second stage, construction, involves actively building and testing the knowledge through undertaking authentic tasks. The 'lab' is a good example of somewhere where construction should take place, or alternatively a well structured seminar for more discursive subjects. The final stage is called 'dialogue'. At this stage the learner has reached a point where they can 'identify' with the concepts (cf Wenger, 1998) and engage in debate and discussion at sufficiently high level that new concepts may emerge. The goal of most tutorials is to engage the learner in such debate and discussion.

The role of dialogue, however, should not be underplayed in the other stages. Fowler and Mayes (1997) recognised that dialogue was taking place at all stages. At conceptualisation one finds dialogue for clarification ("what did you mean by….") or confirmation ("Did you mean…."). At the construction stage the dialogue is more about collaboration and co-operation, whilst at the dialogue stage debate and argument should take place. This emphasis on communication is particularly important for distance learning where the opportunity for dialogue is limited. In fact the IDE students do undertake a number of face-to-face sessions for practicals, seminars (both construction stage) and tutorials (dialogue stage). The need for dialogue at the conceptual stage is met by interventions to encourage reflection; self questioning and self assessment (see above).

A well designed module should contain all three stages of learning.

The Pedagogical approach table combines the learning stage with Unit objectives and teaching/Learning methods. The table below is a partially completed example.

Pedagogical Approach Table		
Learning Stage	**Unit Objective**	**Teaching/Learning Method**
Conceptualisation	Unit 1: To introduce the concept of research in the Social Sciences. Unit 2. To appreciate different research strategies	Lecture Module plus guided reading
Construction	Unit 3: To design, analyse & carry out simple experiments Unit 7: To design, analyse & carry out field work Unit 8: To present research findings	Laboratory Practicals Statistic Practicals Field studies In class research seminars
Dialogue	Unit 10. To present and defend an argument	Threaded Discussions, Online forums and tutorials

3. Part 8: Constructive Alignment

With respect to the Constructive Alignment Table, Biggs (1999) argues that the choice of learning outcomes, the teaching method and the assessment test must be aligned. For Biggs, learning outcomes should not simply be a list of topics to be covered but need to state what level of understanding is required. A learning outcome relies on verbs to describe a higher (generic)

level of understanding (see Fig 2. below). The teaching methods specified are the ones most likely to realise those outcomes, and the assessment tasks must test whether the students have acquired the outcomes. He refers to this consistency as constructive alignment.

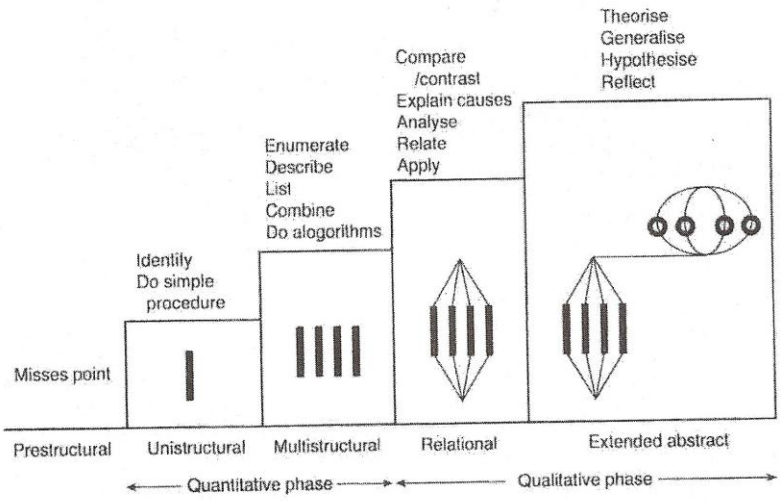


Fig. 2. Biggs' (1999) mapping between Learning Outcomes and Levels of Understanding.

To ensure constructive alignment**,** Biggs advocates arranging the learning outcomes into a hierarchy that corresponds to the grading system to be used. This 'bottom-up' approach requires the lecturer to consider what behaviours or kinds of understanding he or she would expect from, for example, a grade A student or a grade D student. The SOLO[1] taxonomy is useful in this respect. Kinds of understanding (see fig.2 below) vary from 'surface' (e.g. unistructural) to 'deep'(e.g extended abstract) and the generic learning activities/outcomes can be mapped onto the different kinds of understanding.

Grades can also then correspond to the kind of understanding achieved. In one course a grade A might reflect students who reach the 'relational' stage, whereas in a more advanced course one might expect 'A' grade students to reach the 'extended abstract' level. In other words there is not necessarily a one-to-one relationship between the grade and the kind of understanding. Also it is important to note that teachers should teach so that all students achieve the highest grade. By linking outcomes and assessment changes the assessment approach from being norm-referenced to criterion-referenced (section 10 below).

[1] Structure of the Observed Learning Outcomes

Bigg's constructive alignment and Mayes' learning stages can be combined. Each stage should have a set of associated generic learning outcomes, and the nature of the stages results in different learning outcomes for each stage. The generic learning activities were adapted from Bloom's (1959) categories and use Conole et al's (2004) mini-learning activities to explain each more fully. The Mayes' stages have then been mapped onto the generic learning activities (see table below).

Mayes' Stage	**Generic Learning Activity**	**Mini-learning Activities**
Conceptualisation	Expose to new concepts, theories and facts	Receiving Information; scoping domains; identify boundaries; generalize from given facts;
	Gather Facts/concepts	Gather resources; brainstorming a concept; discover facts; interpret facts; classify facts;
	Present & Explain facts or concepts	Ability to organise and present material in a timely, logical and coherent way.
Construction	Evaluate Facts/concepts	Develop values; Synthesis of key findings from a range of resources; Ranking and rating a set of values; make judgments; make comparisons; interpret facts; recognize subjectivity
	Build/test theories/concepts	Recognise patterns; draw conclusions; predict outcomes; construct models; follow instructions; apply knowledge; demonstrate outcomes; plan experiments; state rules;
	Solve Problems	Investigating a problem; analyze wholes into parts; synthesize parts into wholes; apply principles; select effective solutions; use methods, concepts, theories in new situations
	Acquire Skills	Sequence parts; practice sequences
	Acquire and apply knowledge to perform in real world settings	Observing, analysing and reflecting upon other people's real world behaviours, and then

		practicing those behaviours in real world settings
Dialogue	Reflect critically	Self assessment of level of competence; critique own performance; recognize own limitations;
	Engage in discussion	Defend a position; Setting up teams of learners; establishment of different roles in a team; Discussion; Sharing ideas and coming up with a combined list

The Constructive Alignment Tables below give examples of constructive alignments in some 'traditional' types of courses. Care should be taken with the assessment activities described in the table. As already discussed assessment must be aligned with the kind of knowledge (e.g. unistructural etc) the teacher is expecting, and this will vary according to what outcome the teacher has specified. In other words, although the final goal may be for all students to reach the extended abstract phase this may not be realistic for a Level I student. The examples in the table are set at a final year degree level (IV).

A: Traditional Science Course			
Learning Stage	**Outcome**	**Teaching requirement**	**Assessment**
Conceptualisation	Expose to new concepts, theories or facts	Teacher organise and present the material in a logical and comprehensible way. Learners are generally passive but opportunities to question the presenter must be provided (and not just at the end of unit – pauses for reflection are required). Informal assessment that encourages learners to demonstrate their grasp of the conceptual material should be present. The teachers need to provide timely feedback ***before*** moving onto the next session or unit.	Multi-structural: essay exams/assignments; multiple choice questions.

Construction	Build/test theories/concepts	Teacher constructs appropriate practical tests based on the students current understanding and allows the learner full control in constructing some kind of explanation – a model, theory or argument. The teacher only intervenes if the learner has difficulty. The teacher's role is to provide or be a 'scaffold' to support the building process. This is a highly individualised approach suitable for one-to-one or small group learning.	Relational: projects; critical incidents.
Dialogue	Engage in discussion	The teacher needs to create an environment conducive to knowledge sharing amongst the learners (peer discussion). Teachers must encourage the students to be challenging, logical, analytical and innovative (new hypotheses etc). A typical activity may be a 'debate' where the teacher needs to define the learner's role; the debating protocol, and the schedule. The teacher would be expected to moderate the discussion and provide feedback at the end of the session. Normally a one-to-many activity.	Extended abstract: presentations; debates; follow up essays/assignments
B: A Traditional 'Discursive' Course			
Learning Stage	**Outcome**	**Teaching requirement**	**Assessment**

Conceptualisation	Expose to new concepts, theories or facts	Teachers organise and present the material in a logical and comprehensible way. Learners are generally passive but opportunities to question the presenter must be provided (and not just at the end of unit – pauses for reflection are required). Informal assessment that encourages learners to demonstrate their grasp of the conceptual material should be present. The teachers need to provide timely feedback ***before*** moving onto the next session or unit.	Multi-structural: essay exams/assignments; multiple choice questions.
Construction	Evaluate facts and concepts	Learners are invited to evaluate, review or judge someone else's performance, concepts and/or opinions usually found in readings or other resources (videos etc). The Teacher provides feedback on learner's value formations, judgements and interpretations. This specific form of feedback is traditionally found in tutorials and seminars.	Relational: seminar observation
Dialogue	Engage in discussion	The teacher needs to create an environment conducive to knowledge sharing amongst the learners (peer discussion). Teachers must encourage the students to be challenging, logical, analytical and innovative (new	Extended abstract: presentations; debates; follow up essays/assignments

		hypotheses etc). A typical activity may be a 'debate' where the teacher needs to define the learner's role; the debating protocol, and the schedule. The teacher would be expected to moderate the discussion and provide feedback at the end of the session. Normally a one-to-many activity.	
C: A Traditional Skill based Course			
Learning Stage	**Outcome**	**Teaching requirement**	**Assessment**
Conceptualisation	Expose to new concepts, theories or facts	Teachers focus on orientating and explaining to learners the background to the skill acquisition activity (what skills, why they need them and so on). Learners are generally passive but opportunities to question the presenter must be provided (and not just at the end of unit – pauses for reflection are required). Informal assessment that encourages learners to demonstrate their grasp of the conceptual material are encouraged. The teachers need to provide timely feedback ***before*** moving onto the next session or unit.	Unistructural: multiple choice.
Construction	Acquire Skills	Teacher breaks down activities into parts; practices the parts until a success threshold is reached by the learners; and then practices the	Multistructural: practicals

		whole sequence.	
Dialogue	Reflect critically	The Teacher should encourage and model reflective activities (e.g. self-evaluation; self-analysis; replanning, reiterations). Tools should be provided to 'capture' reflections (e.g. video recordings) and reflection time built into the schedules.	Relational: case studies; portfolios; reflective diaries.

Tables like the examples given above would be expected to be included in the Module Outline.

4. Part 9: Mapping Self Assessment and Unit Objectives

For Distance Education material in particular it is very important that the learners are given the opportunity to check and assess their understanding throughout the learning process and not just at the end of the module. The former is referred to as formative assessment and is achieved in our process through the use of questions and activities that explicitly encourage the user to reflect on what they have learnt and enter an internal and imagined dialogue with the author to check their understanding of the content. The two self assessments methods used are:

- Self-assessment Question - where the emphasis is on understanding key concepts and issues (e.g. Why design a curriculum?)
- Activities or tasks - where the emphasis is on applying concepts or reflecting on application (e.g. list the strengths and weaknesses of the curriculum used in your school).

Self assessment must be both appropriate and timely. In terms of appropriateness it is important that the method used (Questions and/or Activities) are appropriate to the content. To help the authors check appropriateness, the authors have to specify for each unit objective the required self assessment activities. By completing this table at the outline stage, authors have effectively defined the Unit's content.

5. Part 10: Assessment Rubrics

As already noted, one weakness of Mayes' framework it that does not explicitly address assessment, and Biggs notes only that the assessment, outcomes and methods must be aligned. Pedagogical validity therefore needs to also address the nature of the assessment activity.

The use of rubrics (see http://jonathan.mueller.faculty.noctrl.edu/toolbox/rubrics.htm) is a particularly powerful way of making the assessment activity more explicit. Too often a type of assessment (e.g. an essay) is specified without indicating what is expected from the student and thus what is valued by the assessor. Assessment rubrics should be authentic with respect to assessing performance along a set of task specific criteria. Other attributes of assessment rubrics is that they should be:

- Criterion rather than norm referenced
- Educational (i.e. providing appropriate feedback) as well as judging performance
- Composed of two major components: the criteria (at least two) and levels of performance (at least two).

Levels of performance can be, but don't have to be, assigned a score and the scores can be differentially weighted. Naturally the criteria, weightings and descriptors will vary according to the level of the student, the course being taught and the type of assessment being used.

The Table below is an example of what an assessment rubric might look like for the conceptualisation stage (e.g. writing an essay).

Criteria	**Weight**	**Poor (1)**	**Good (2)**	**Excellent (3)**
Number of Sources	x 1	1-4	5-9	10-12
Use of Sources	x 1	Can not tell from which source information came from.	Can tell with difficulty where information came from.	Can easily tell which sources information was drawn from.
Content Accuracy	x 3	Lots of inaccuracies	Few inaccuracies	No apparent inaccuracies
Analysis	x 3	Very little analysis of the information.	Some analysis but too descriptive.	Sound, critical analysis
Conclusions	x 2	No or inappropriate conclusions are drawn.	Incomplete set of conclusions are drawn.	Complete and logically derived set of conclusions is provided.

6. Conclusion

The adoption of Mayes' stages of learning combined with Biggs' concept of constructivealignment and assessment rubrics in general results in a logically consistent and complete approach to the pedagogy that can be best described as an 'Outcome-based approach to Teaching and Learning (OBTL)'.

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Appendix A: Module Outline (Draft)

1. Module Title:	
2. Level:	
3. Module Scope, *(Briefly what the module covers, does not cover and why)* **Aims & Objectives**	
4. Required (if any) Prequisites *(Assumed prior knowledge – reference other modules)*	
5. Learning Outcomes	At the end of this module, the student will be able to:

7. List of Units to be covered *(titles only)*		
8. Pedagogical Approach Table		
Learning Stage	**Unit Objective**	**Teaching/Learning Method**
Conceptualisation		
Construction		
Dialogue		

8. Constructive Alignment Table			
Learning Stage	**Outcome**	**Teaching Requirement**	**Assessment**
9. Self Assessment & Unit Objective Mapping Table (*Give sufficient detail in the description of the self assessment method to show how it helps the objective to be met)***.**	**<u>Unit Objectives</u>**		**<u>Self assessment Methods</u>**
10. Assessment Rubrics	**Good (weight/timing)**	**Satisfactory (weight/timing)**	**Poor (weight/timing)**

(this should also indicate approximately when the assessment will take place, e.g. mid first semester)			
Assessment 1			
Assessment 2			
Assessment 3			
Assessment 4			
Assessment 5			
Assessment 6			