Overview of the ACE-Professional Diploma in Education Online Programme:

Course Development & Instructional Materials Format

By

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ABSTRACT
There are FOUR principal ways in which learning materials for Open and Distance Learning (ODL) are produced, according to the Commonwealth of Learning (2005:ix):

- By an instructional designer who is the content-provider and the writer;
- By an instructional designer who commissions freelance content-providers to write the materials;
- By an instructional designer who converts text provided by a teacher; and
- By a team of people, including content-providers, instructional designers and specialist such as audio and video producers.

We are deploying all-four ways in producing learning materials for the Professional Diploma in Education Programme of the Adeyemi College of Education, Ondo. This is as a result of the peculiarities of the Programme which include the facts that:
- It is not an entirely online programme in the real, practical sense;
- We already have rich, tested text for the programme – only that they are not in ODL format and not in our preferred ODL template
- We already have rich team of tested academics who can write, edit and visualize – only that we need to design a common unique template for the ACE-PDE.

This paper makes an overview of the course development stages of ODL materials, highlights the human resources needed to produce standard learning materials and then provides a detailed guide on course contents development specifically for the ACE-PDE Programme.

1.0   **INTRODUCTION**
1.1   **COURSE DEVELOPMENT STAGES IN AN ODL PROGRAMME**

Typical ODL Course Development takes four main stages:
i)   **The Pre-Planning Stage**: This involves preparing a rough syllabus of the Course; finalizing the syllabus after discussing in workshop review; getting academic board's approval; conducting workshop for writers and editor; preparing the model of the Modules and then selecting the writers and editors,
ii)   **The Planning Stage**: Determining the subject matter and content of the Course; Allocating time needed to complete units, study and assessment to complete a Course; building student profile (defining the target audience); Assessing the resources that would be need including textbooks and videos; determining assessment methods and the length of the course.
iii)   **Authoring Stage**: Manuscript authoring; assessment of manuscripts by supervisors; editing and obtaining of copyrights.
iv)   **Production Stage**: Final manuscript is illustrated and edited for correctness in grammar, style, spelling; reading sessions; second proof reading and final design and check by instructional designer/director; priting or uploading online).

HUMAN DEVELOPMENT REQUIREMENTS
Basically, we need the following personnel to develop ODL courses:
i)   The Coordinator:
ii)   The Tutors
iii)   The Authors:
iv)   The Instructional Designer:
v)   The Assessors/Editors:
vi)   The Visualizer/Graphic Artists:
vii)   The Media Specialists:

2.0   DETAILS PROCESS OF DEVELOPMENT COURSES FOR THE ODL PROGRAMME
2.1   WHAT IS INSTRUCTIONAL DESIGN?
Rahman (2006:1) defines Instructional Design as "the systematic development of instructional specifications using learning and instructional theory to ensure the quality of instruction. It is the entire process of analysis of learning needs and goals and the development of a delivery system to meet those needs…development of instructional materials and activities; trying out and evaluating all instruction and learner activities."
Instruction may be defined as "a goal-directed teaching process which is more or less pre-planned." (Romiszowksi, 1981).

In class-room based formal teaching, the teacher is the most important resource. He or she may use other resources such as textbooks or audio-visual aids but he or she carries out the major tasks such as defining what is to be learnt, giving examples, explaining, asking questions, setting learning tasks, marking work, taking and answering questions from learners, providing resources such as textbooks for learners, providing study advice and general coouselling, including giving special assistance to learners with unique problems.

A combination of learning materials and tutors replace "the teacher" in ODL setting. Under the ODL, learning materials have to be so developed and designed to perform all the afore-mentioned roles of teachers. This instantly tells us how difficult it could be to come up with excellent instructional design and instructional materials.

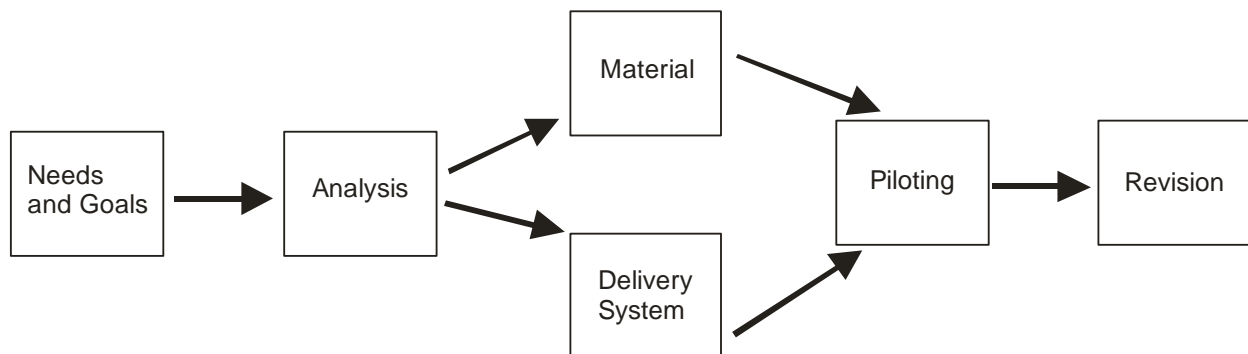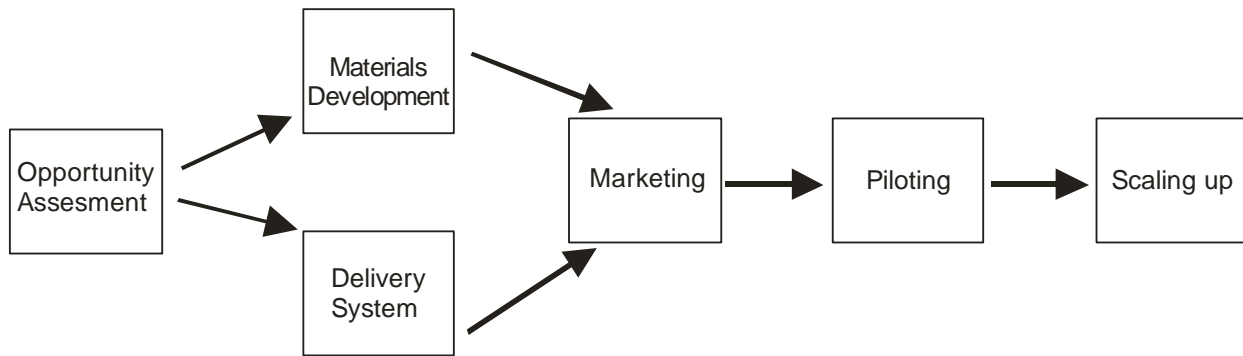Fig 1. The Typical Institution design process

Fig 2. The ACE-PDE Online Project Design Process

2.2 A THEORETICAL FRAMEWORK FOR INSTRUCTIONAL DESIGN

Various theories have been developed on how to develop good instructional materials for learning generally. They can be broadly grouped into three paradigms: the Behavioural, Cognitive and Constructive Paradigms. The matrix below explains these traditions and their advantages/disadvantages.

Table 1: Theoretical framework for instructional design

Theoretical Paradigm	Conceptual Approaches	Leading Theorists	Learning devices suitable
Behavioural (Aim of instructional design is to create the particular conditions needed for a particular type of learning)	o Rote memorizing o Learning to perform routine tasks (e.g. cooking) o Learning rule-based knowledge (e.g. ethics of teaching) o Learning procedures where variation is not permitted (e.g. assembling a musical gadget)	Gagne (1968)	o Clearly-stated learning objectives o Breaking of tasks into small steps o Designing most tasks to have 'right' or 'wrong' answers o Assessing learners against stated learning objectives o Prescribing clearly what to be learnt in learning packages.
Cognitive (Emphasizes the characteristics of individual learners – ability to process information)	o Making classifications o Setting rules o Setting procedures	Piaget (1936)	o Clearly-stated learning objectives o Breaking of tasks into small steps

	o Problem-solving o Learning concepts		o Assessing learners against stated learning objectives o Providing a wide variety of tasks but within the scope of the stated objectives o 'Materials chunking' – breaking them into bits and pieces o Use of mnemonics to aid memory o Use of organizers to help learners structure the topics/lessons o Simplification to real-world situations o Learning package prescribes what is to be learnt
Constructivist (Emphasizes the learner's own activities as the mechanism for learning)	o Unraveling complex situations o Case studies o Real-world scenarios o Simulations	Elen & Clarebout (2001)	o Choice of tasks heavily depends on the learner or the learner situation o Use of real tasks o Case studies o Complexity of the real world built in form of tasks o Collaboration among learners o Demonstrative learning ('what me do it') o Learning package often open-ended it terms of what is to be learnt o Self-evaluation preferred to formal assessment

Notes:
- Table 1 adapted from "Creating Learning Materials for Open & Distance Learning by Commonwealth of Learning, 2006.
- **Learning aim**: The performance expected from learners once they have completed a course.
- **Learning objective/outcome**: A specific piece of learning that learners are expected to achieve as a result of studying a small part of a course.

2.3 CRITICAL ISSUES TO CONSIDER BEFORE ADOPTING PARADIGMS FOR ODL INSTRUCTIONAL MATERIALS.

The principles of ODL are the same around the world, although specific methods by institutions differ. This is the reason for this workshop: to fashion out a unique method that takes into considerations our peculiar objectives and characteristics in evolving the Programme. These general characteristics and our peculiar objectives need to be briefly reviewed to set the template for the unique format we shall develop for the ACE-PDE Programme.

i)   The general philosophy behind the ACE-PDE Programme is to remove barriers facing teachers/educationists and intending teachers/educationists who did not study education from going becoming professionals in the teaching profession while also allowing them to study education **when** they want and **where** they want. (access and choice).

ii)   The ACE-PDE Programme is predicated on the use of **modern technology** to mediate learning (videos, audios, printed workbooks, radio, web resources, etc.)

iii) Our students under the ACE-PDE Programme are adult learners and adult learners are very different from school-age learners in that:
   ➤ Adults have some residual knowledge in many issues they seek knowledge of
   ➤ Adults like to know why they need to learn more on those issues
   ➤ Adults tend to be self-directed – they can learn by themselves if guided properly; hence adults are not really "taught but guided"
   ➤ Adults have a wealth of experience on issues of life and in the case of the PDE, our students are not complete novices to education; many of them have been teaching for many years.
   ➤ Adults tend to be busy and given the opportunity to choose, they would choose to learn when they are ready to learn
   ➤ Adults would prefer that the knowledge they seek and for which they are paying for adds value to their jobs and general professional satisfaction.

iv)   As a result of the foregoing, learning is an active process, so good learning materials focus on learner activities rather than on exposition and explanation.

v)   Therefore, learning tasks should always be meaningful to the learner and should always match the assumed prior knowledge of the learners.

vi)   Learning requires feedback: learners need to know whether they have learnt something correctly, and therefore need regular feedback on their progress.

v)   Learning is enhanced by examples: learners can better understand and remember important points by being presented with good examples.

vi)   ODL learning materials are therefore remarkably different from textbook materials. (See Table 2)

TYPICAL ODL MATERIAL	TYPICAL TEXTBOOK MATERIALS
▪ Are divided into study units, sometimes representing a week's work	Are divided into chapters, based on topics rather than study time
▪ Include a study guide on how to use the materials and how to study by oneself	Do not include study guides or study guidance
▪ Include study tips (e.g., on note-taking)	Do not include study tips
▪ Include examples	Include examples
▪ Include diagrams and pictures	Include diagrams and pictures
▪ Include numerous activities	Have few or no activities
▪ Provide feedback on answers	Do not provide feedback
▪ Are tightly structured	Are more loosely structured
▪ Address the learner as 'you'	Use passive language (e.g., 'it can be seen that' or 'the reader will note that')

▪ Have a generous layout, often including space for learners to write in	Usually no space for learners to write in - have pages filled with text, figures, tables, lists and other graphic elements
▪ Have as an audience the individual learner	Serve a dual audience: the learner and the Teacher
▪ Attempt to meet all the needs of the learner	Assume that the learner has a teacher who will be able to amplify the printed text

Example 3. Example of a reflective action style of ODL teaching

Activity 5

Think about a difficulty or obstacle that you have worked through in your life. Did it follow a similar process-did you think it through or talk it through with someone you trusted, begin to see some possibilities and start to move forward?

The problem area:

The process:

Comment

Many people find this basic three stage process effective in beginning to sort out their problems.

Activity 6

Now describe how you have helped someone else through a problem area.

Their problem area was:

The process of helping:

Source: *Introducing Counselling Skills* (National Extension College Trust Ltd)

Example 2. Example of a tutorial style of ODL teaching

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 for ever! Each time you divided it you had one left over

Decimal that go on for ever are called RECURRING DECIMALS. They are written with a dot showing the recurring figure:
0.1=0.1111111...

or two dots showing the recurring point:
0.5432 = 0.54324324...
Decimals that end are called TERMINATING DECIMAL.

15. Write out the first ten figures after the decimal point in these recurring decimals. For example:
    (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 decimal dots. For example:
    1.34444..............1.34
    (a) 2.464646...   (b) 0.666666...   (c) 3.24444...
    (d) 0.327327327...   (e) 0.515515515...   (f) 6.33333....
     (g) 7.2411111...   (h) 11.11111111...

17. Look at your table in question 2. Some factions give recurring decimals and others give terminating decimals. (Notice how your calculator 'ends' the recurring decimals)

    (a) Organise the fractions in this table:

Fractions giving terminating decimals	Fractions giving recurring decimals	Fractions giving decimals that go on forever without recurring
$\frac{1}{5}$	$\frac{1}{3}$	

Source: *GCSE Mathematic Intermediate* (National Extension Cambridge)

Example 1. Example of an ODL text

Animal group	Main feature that adapt organism to its environment
Mammals	Mammals have 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 milk, for feeding (sucking) the young after birth. The parents care for the young until they become self-supporting.

Self-check

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

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

2. Why is a dolphin classified as a mammal but a haddock classified as a 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 identify 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). Crustacean (two pairs antennae).
3. Elephant: vertebrate, mammal (hair, pregnancies, mammary glands to suckle young).
4. Beetle: invertebrate, arthropod (exoskeleton, segmented body, jointed limbs), insect (three body segments, three pair of legs).
If you are unsure, check the diagrams.

Activity 2
Although they share the same habitat, there are so many different aspects of the environment that various organisms can utilise the different conditions.

Self-check Answers
1.Invertebrate: jointed: exo-: three pairs: wings: spider/scorpion/tick/mite: four pair.
2. A dolphin has pregnancies and suicides the young via mammary glands: a fish does not do this and has a scaly skin, gills and fins.

Source: *Getting Started at GCSE Biology* (National Extension Cambridge)

3.0   RECOMMENDED INSTRUCTIONAL MATERIAL FORMAT FOR ACE-PDE

3.1   THE NECESSITY TO ADOPT THE MIX INSTRUCTIONAL MATERIAL TYPE
Rowntree (1994) has classified instructional design into three types:
•   **Tell-and-test (behaviourist school)**: The emphasis of the method is on *memorising* rather than understanding.The 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. (See Example)

•   **Tutorial (cognitive school)**: The tutorial approach is characterized 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 helpthe learner *understand* the material being taught. A complete unit consists of a succession of input-activity sequences. In this way the material mimics the teacher who gives some input and then asks a question or sets a task in the classroom. (See Example).

•   **Reflective action guide (constructivist school):** Such materials usually aim to support learners in learning from their own experiences (e.g., at work).Typically such materials will specify broadly defined aims but no precise learning outcomes;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 learners to record and reflect on their own experience (e.g., by keeping a learning journal); use case studies; and set activities that are open-ended, often being based on the learners' own experiences.(See Example).

For reasons of cost effectiveness and availability of textbook formatted-materials at the Adeyemi College of Education (ACE) - since the subjects/courses have been taught for over 50 years at the Institution - a combination of the foregoing three-type approach is highly recommended. So, a Course Developer/Writer only needs to re-gig available standard body of knowledge regarding each Course and revise, re-work and re-write based on the ACE-PDE TEXTBOOK FORMAT. Work submitted shall then be adopted during this workshop based on the ACE-PDE APPROVED FORMAT by another team of designers .

In other words, we expect the final designers to decide wheher to choose a Tutorial style or Constructive style is suitable for a particular Module, Unit or Sub-units.

3.2   COURSE CONTENTS DEVELOPMENT FOR THE ACE-PDE
3.2.1   HUMAN RESOURCES
Based on the foregoing admonitions, the human resources required for developing the courses in the 19 ACE-PDE Courses have been synthesized into six (6) as follow:
  i)   **Chief Executive Director/Chief Consultant**
          Number needed: One (1)
          Duties:
          -   Policy making and goals setting
          -   Ensuring compliance with policy, leaving no execution gaps\
          -   Overall team leader and final authority
  ii)   **The Coordinators:**
          Number needed: Two (2)
          Duties:
          -   Day-to-day supervision of tasks to ensure full policy and programme implementation
          -   Day-to-day management of plans and programmes
          -   Compliance monitoring (team leadership)
          -   Resource management (time, money, people, etc,)

- Preparation of course development schedule
- Provides formal and informal training for team members
- Schedules plans and team meetings
- Monitors and communicates progress and deadline
- Coordinates authors, editors, supervisors and marketers
- Prepares reports to the Chief Executive Director as required.

iii) **The Authors:**
Number needed: Seven (7)
Duties:
- Prepares manuscript of (new) the Course
- Defines aims and objectives of the Course/Unit in conjuction with Coordinators and Instructional Designer
- Ensures materials are written to an appropriate style
- Writes assigned Modules , including self-tests and revision questions

iv) **Tutors:**
Number needed: Seven (7)
Duties:
- Liaison between authors and learners (interface with learners)
- Reviews course outlines and provides comments and feedback
- Rewrites manuscripts where necessary
- Prepares art briefs for illustrators and graphic/audio/video/web designers
- Proof-reading and checks after typesetting and after graphic artist's designs
- Designs assessment questions (different from self-tests)
- Conducts interactive sessions with learners/students
- Works with Coordinators to conduct examinations
- **Note:** The Tutors and Authors are paired (work as team) under ACE-PDE.

v) **The Instructional Designer**s:
Number needed: Four (4)
Duties:
1. Is the order topic sequencing okay?
2. What criteria should be used for sequencing?
3. Does the subject matter determine the sequence?
4. How does the sequence vary between sequential subjects and non-sequential ones?
5. How is order affected by an integrated approach to teaching a topic?
6. Do students study in the order in this material has been presented?
7. How can the content be best ordered given that learners learn best when they can link what they are learning to what they already know?
8. Is the student sufficiently engaged?
9. Is the student paced properly in release of materials, deadlines for assignments, etc.?
(Source: Lawless, 1994, Commonwealth of Learning, 2006)
In addition:
- Advises authors/writers on structure, methodologies, presentation, objectives, activies, review and evaluation (on handles them directly);
- Defines learning and teaching strategy in liaison with other team members;
- Ensures content, process and outcome are consistent with learning theory
- Advises in design/preparation of course materials
- Assists in planning and effective sequencing
- Researches and defines learner needs characteristics
- Checks quality controls.

vi)   The Visualizer/Graphic Artists/Media Specialists:
Number needed: Two (3)
Duties:
- Designing workbooks, audio, video,photo, animation and web materials etc. for the PDE based on contents provided by the ACE.
- Ensuring attractiveness of teaching aids and materials.
- Evaluates resource materials for appropriateness
- Evaluate workloads and timelines (pace management)
- Provide written and verbal evaluation of the stages
- Defines visual design for the Course

vii)   Editors/Assessors:
Number needed: Two (4)
Duties:
- Edits the copy for accuracy
- Deployment of communication skills and compliance with editorial style
- Advices on style and technical areas of the presentation.
  Checks the appropriateness of graphics, figures, usefulness, and placement

3.2.3   COURSE DETAILS

There are 19 Courses divided into THREE MODULES in the ACE-PDE Programme:

	FIRST MODULE	
Code	**Title**	**Credit Load**
PDE 5101	National Policy on Education and Historical Foundations of Nigerian Education.	**2**
PDE 5102	Introduction to the Teaching Profession.	**1**
PDE 5103	Psychological Foundations of Education, Guidance and Counseling.	**2**
PDE 5104	Sociology of Education and Comparative Education.	**2**
PDE 5105	Curriculum Development and Instructional Methodology.	**2**
PDE 5106	Educational Technology and Information Technology.	**2**
Subtotal		**11**
	SECOND MODULE	
PDE 5107	Language and Communication Skills and Use of Library.	**2**
PDE 5108	General and Subject Methodology.	**2**
PDE 5109	Measurement and Evaluation	**2**
PDE 5110	Educational Research and Statistics.	**2**
PDE 5111	Educational Management.	**2**
PDE 5112	Development of Education in Nigeria.	**2**
Subtotal		**12**
	THIRD MODULE	
PDE 5113	Curriculum and Resources.	**2**

PDE 5114	Instructional Design and Methods.	2
PDE 5115	Management of Education.	2
PDE 5116	Current Educational and Health Problems.	1
PDE 5117	Project	4
PDE 5118	Teaching Practice	6
Subtotal		17
TOTAL		40

3.2.4   THE MODULE

- A **Module,** according to the Oxford Dictionary, may be defined as "each of a set of standardized parts or independent units tha can be used to construct a more complex structure." It consists of several related but distinct units. A Course can therefore have several Modules and a Module can have several Courses, depending on how the two words are conceptualized.

- A Course, within a Module may explained in form of 'units'. A **Unit** is part, bit or element of a larger whole.

- **Typical Structure of a Typical Course-Unit:**
  Writing a Course in the ODL format is an art. It requires a lot of creativity and there is no one way of doing it. For our purpose, we have attempted to develop the following guide at typical Course Contents:
  - *Learning Outcome (or Course Aim):* This serves as a means by which a course team or a group of teachers creates a vision of a particular course they want to create, the purpose of the course and a justification for its creation. E.g. "This Course aims to give you an understanding on the purpose and main components of the National Policy on Education…."
  - *Learning Objective*: Performance expected from the learner once he or she has completed the Course. This is the reason is always written in demonstrative and measurable format e.g. "You are expected to be able to explain the four main components of the National Policy on Education" at the end of this Course.
  - **Unit 1**
    (Note: The Number of Units in a Module depends on how the writer has paced the learning within the time-frame given by the Director of Programme within the Module)
    * **Unit aims and objectives**: The measurable *intent* set by the teacher to measure the impact of the Unit on the student at a narrower level e.g. by the end of this unit, you should be able to list, explain and state several benefits and shortcomings of the first two sections of the National Policy on Education." It is a micro objective drawn from the Course Objective
    *
    * **Topics (Main Content)**: The major part of the Course being dealt with in the Unit - this depends on the author and the nature of the course e.g. "Purpose &Major Sections on the National Policy on Education". For ACE-PDE, Bloom's Taxonomy is generally recommended, (not necessarily following the order) for developing most topics: Knowledge (run through basic terms/concepts/principles e.g. list the major sections and sub-sections on the National Policy on Education); Comprehension (understanding or comprehending the

terms/concepts/principles e.g. Explain in your own words what each major section of the National Policy on Education states); Application (using the knowledge in different scenarios e.g. How do you think establishment of Nursery Schools in your locality complies with or negates the National Policy on Education); Analysing (How does it work e,g. Identify any four critical issues not properly covered and any four issues adequately covered in the National Policy on Education?); Synthesizing (Putting the ideas together in various scenarios e.g . Write in not more than 50 words the key components and benefits of the National Policy on Education); Evaluating (critiquing/making value judgement e.g. List 5 shortcomings, one for each of the five sections of the National Policy on Education)

* Sequencing the topics:

There are a number of ways in which you can sequence the units of a course (after Rowntree, 1990, and Romiszowksi, 1986):

*• **by topic** – This method can be used when the topics can be studied in any order.*

*• **chronologically** – An approach that might well apply to a history course but could even be used for a maths course when looking at how a topic has developed over time. An example of this can be found in Toeplitz (1963).*

*• **by place** – For example, you might work outwards from the home to the world or work from the micro scale (inside a cell) to the macro (the whole organism).*

*• **by cause and effect** – Here you might start with a phenomenon and explore its causes and origins.*

*• **by structural logic** – In this case you follow the logic of the subject. Maths is often taught like this.*

*• **problem-centred** – In this case you identify a problem and explore its solution (e.g., how do animals survive severe weather?).*

*• **spiral** – In the spiral approach, the same material is revisited several times at increasing depths.*

*• **backward chaining** – Here you start with the end result and gradually work backwards through the course to explore how that end result is achieved. For example, in building a spreadsheet, you could start with a finished spreadsheet and set some exercises on using and critiquing it. Through doing this, learners start with an overall understanding of a spreadsheet and then gradually develop a deeper understanding of how it is constructed.*

*• **a loose network** – In this case the material consists of a loose collection of topics that can be studied in any order. This is a typical approach in discovery learning and topic-learning. It is also an approach that is suited to hypermedia, whilst being difficult to implement in print.*

*• **a PERT network** – PERT networks are usually found in project management but they can be used to sequence the topics in a course. The idea of dependency is central to PERTsoftware programme networks. In project management, 'dependency' means that one task cannot be started until another has been completed. In course planning, 'dependency' means that one topic cannot be studied before another has been mastered. Using PERT networks is only practicable if you have access to some suitable project software.* (Commonwealth of Learning, 2006)

But a very simpler way of principle in sequencing is to move from the ***simple to the complex*** and from the ***concrete to the abstract***, *known to the unknown* and ***particular to the general.*** (Romiszowksi, 1981)

* Activities – link learning objectives, tests of prior knowledge, advance organizers, recall, feedback to activities, examples, lists of key points, study tips, animations (electronic materials)

*Unit Summary
* Self-Test
* Assessment
Use the following "Bloom verbs" format to develop self-tests and general assessments (adapted from Commonwealth of Learning, 2006):

LEVEL	TYPICAL ACTIVITY	VALID ASSESSMENT METHODS
Knowledge	Describe	Ask for a verbal or written description
	List	Ask for a verbal or written list
	State	Ask for a verbal or written statement
Comprehension	Explain	Ask for a verbal or written explanation
	Outline	Ask for a verbal or written outline
	Predict	Ask for a verbal or written prediction
	Translate	Ask for a verbal translation if objective is to speak; Ask for a written translation if objective is 'to write'
Application	Construct	Require the learner to construct (e.g. create a spreadsheet, build a wall, bake a cake)
	Solve	Require the learner to provide a solution, being clear as to whether he or she is to show the method (e.g. a solution to a crossword puzzle)
	Use (a method)	Require a learner to apply the method. This may be written (e.g. use the net present value method to evaluate investment
Analysis	Analyse	Ask for a verbal or written analysis of given scenario
	Compare	Ask for a verbal or written contrast of two more scenarios/situations
	Distinguish	Ask for a verbal or written distinction of two or more scenarios/situations
	Explain	Ask for a verbal or written explanation of one or more complex situations (simple explanations are at the comprehension level)
Synthesis	Compose	Ask the learner to compose (e.g. a piece of music, a pneumonic, a definition)
	Construct/Create	Ask the learner to construct something original (e.g. a statue, an electronic circuit, an organogram)
	Create	Ask the learner to create an orginal work e.g. a poem, piece of art
	Design	Ask the learner to design something (e.g. a studio set, a classroom sitting)
	Plan	Ask the learner to produce a plan (e.g. plan a leave roster or educational tour)
Evaluation	Choose	Provide data and ask the learner to make a choice
	Decide	Provide data and ask the learner to make a decision
	Justify	Provide data and ask the learner to justify a choice, decision, etc.
	Prioritize	Provdie data and ask the learner to proritise it
	Rate	Provide data and ask the learner to rate it against certain criteria (the criteria mya or may not be provided)
	Select	Provide data and ask the learner to select one or more options.

Note:

Tutors should use both **Continuous Assessment** and **Final Assessment** – noting that Final Assessment tends to be more stressful for most students and are less reliable than the former which employs a hybrid of assessment measure.

* References & Further Reading List
The ACE-PDE Programme uses the Queen's English (British English) for its instructional materials. The APA format (6th edition), provided herewith, is also our official Referencing Format. All writers should provide comprehensive referencing of all materials used/consulted and in addition provide a Further Reading List for students.

4.0   CONCLUSION

Open and Distance Learning (ODL) principles are more or less the same. What differs from institution to institution is the *application* of these principles. So, what I have done in this presentation is to run through these principles and concepts and then propose constructs through which we can have a unique ODL format for the PDE online programme of Adeyemi College of Education.

I expect that your comments and questions on this presentation will help to ferment and enrich my postulations so that we can evolve the very best PDE programme in Nigeria.

REFERENCES/FURTHER READING

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