REVIEW ARTICLE

SELF LEARNING MATERIALS IN DISTANCE EDUCATION SYSTEM

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ARTICLE INFO	ABSTRACT
	The success and effectiveness of distance education systems largely depends on the study materials. Writing for distance education is a more challenging task and quiet different from that face-to-face teaching or writing for a book or a journal. Self-learning materials depend on exploiting the various means and ways of communication to suit it to the needs of learners. SLMs can perform the functions of a live teacher, and thereby how a distance learner may have all the learning experiences which a student may have in a classroom situation. SLMs include all the material prepared to stimulate independent study/learning. The learners in distance education have less contact with either the institution or the tutor, and depend heavily on these specially prepared teaching materials. Revision of SLMs is as important as the development of the materials for the first time because of two reasons. Every distance teaching course needs to be updated from time to time to incorporate the developments in the field of study or discipline. The other reason is to review the performance of the courses in the light of the feedback that you get from the students, tutors, counselors, experts and others in order to make the course more relevant, learner friendly and academically rich.

INTRODUCTION

Printed course material constitutes the mainstay of teaching through the distance education system. Even in advanced countries of the world where Open universities are highly developed, and mass communication media and information technologies have brought about revolutionary changes in educational systems, the printed course material is still the most important means of imparting instruction to thousands of learners at a distance. Special care, therefore, needs to be taken to ensure academic standard while preparing the course material. Those who are working or intend to work in distance education system, and also for those who want to know how to develop SLM for distance learners and how to revise those materials periodically should be familiar with all the important terms relevant to the process of ODL.
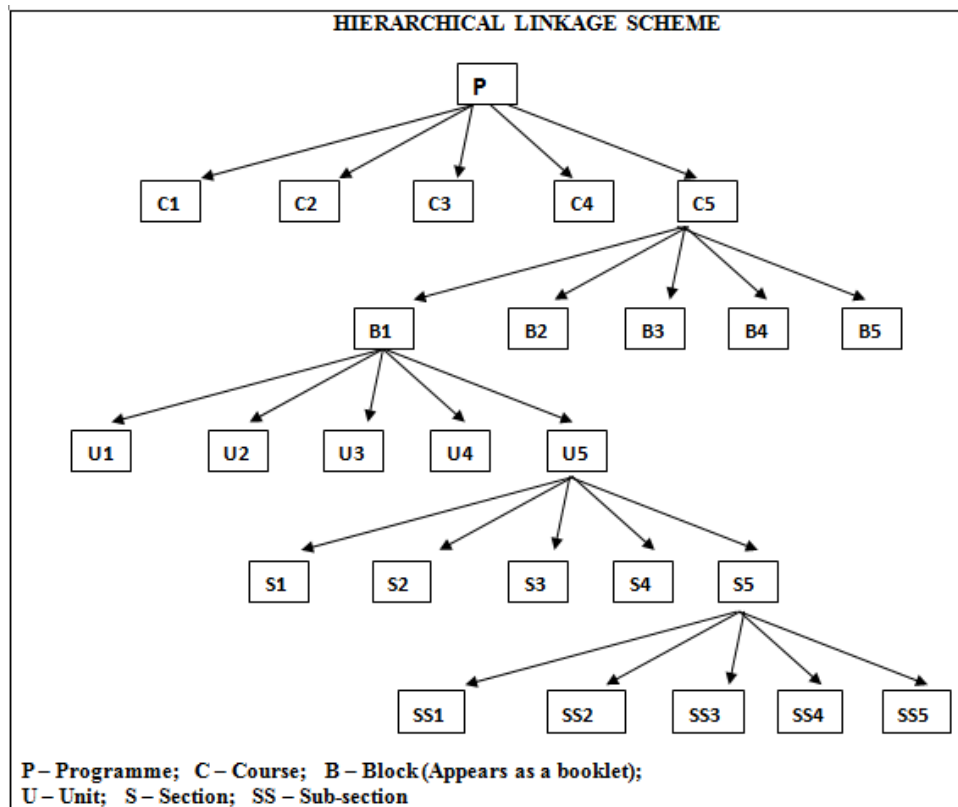
Programme means the curriculum or combination of courses in a particular field of study. For example, UG/PG/Diploma programmes.

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Course describes the teaching materials and other components of the study. A typical distance education course will, for example, consist of a number of booklets of printed material, audio and video components, counseling/contact sessions, assignments, library work, laboratory work, project work etc. A course is divided into **Blocks** which appear in the form of a booklet of around 60/80 pages. Generally each block presents one unified theme. The printed course materials is sent to the learners in the form of blocks as a learner may feel a greater sense of achievement each time he/she completes a block. A single 'big' book can be threatening from the pedagogic point of view. **Unit** is a division of block, at one level in terms of the theme or topic and at another level as the material used to teach the topic. Each unit is broken into **sections** and **sub-sections** for the clarity of the presentation of concepts, information, illustrations etc.

All the units of a block are logically, and also thematically, linked with each other. At some institutions, units are called lectures/lessons/topics/chapters. But the word 'unit' is commonly used among distance educators today. The length of a unit is also important feature to be taken into consideration. It may have 5,000 – 6,000 words or 15 - 17 printed pages.

HIERARCHICAL LINKAGE SCHEME

P – Programme; C – Course; B – Block (Appears as a booklet);
U – Unit; S – Section; SS – Sub-section

A unit is a pedagogical unit that can be completed by a learner within a reasonable period of time, say for example, 5 – 6 hours i.e., at the most three sittings. Pedagogically, the best unit is the one that can be completed in one sitting.

Characteristics of SLMs

The chapters of a textbook usually present information in a very compact form. They are closer to reference material than to learning materials. They are organized in terms of the subject matter rather than to aid learning. On the other hand, SLMs are the instrument for learning.

1. Self-motivating: The study materials like a live-teacher should be highly encouraging for the learners. The materials should arouse curiosity, raise problems, relate knowledge to familiar situations and make the entire learning meaningful for them. It is not easy to create these situations, without an extra effort from the course writer. The sense of reinforcement should be strengthened at every stage of learning and retention.

2. Self-learning: A Unit, besides information, provides the learners study guide - directions, hints, references etc., - to facilitate their independent learning. To make the content comprehensible, it is supported by simple explanations, examples, illustrations, activities etc.

3. Self-explanatory: learner can go through the material without much external support. The content should be self-explanatory and conceptually clear. For this, the content is analyzed logically before it is presented. This order maintains the continuity and the consistency of the content.

4. Self-contained: Not that distance learners should not seek external support, or meet a teacher, bu7t many of them are not in a position to receive support due to their geographical,

physical and psychological isolation. Considering this factor, to the possible extent material should be self-sufficient so that he/she would not be at a disadvantage to those learners who are having accessibility to additional sources and teachers. For this the scope of the content of the unit should be visualized in detail.

5. Self-directed: the study material should aim at providing necessary guidance, hints and suggestions to the learners at each stage of learning. The self-directed material in the form of easy explanations, sequential development, illustrations, learning activities, etc. The material performs the role of a teacher who can guide, instruct, moderate and regulate the learning process in classroom situations. Thus, the course material should direct the entire process of learning.

6. Self-evaluating: To ensure optimum learning, the learners should know whether they are on the right track. Self-evaluation in the form of self check questions, activities, exercises etc., provides the learners with the much needed feedback about their progress (check your progress), reinforces learning, and motivates them for learning. Course writers have to prepare "possible or model answers" to the questions, exercises and activities placed in the unit/lesson so that learner can cross check his/her own answers and assess their progress of learning.

Learning Activeness

Eliciting a response is an essential component of learning. So the study material should make the learner active and responsive. A unit is said to be learner active if it has the potential to motivate the learner to sit up and be engaged in various types of academic activities such as jotting down points, explaining the concepts, collecting material, applying

what has just been learnt to a new situation, doing self-check exercises, writing assignment responses and similar exercises. Such built in strategies make a unit learner active and pedagogically purposive.

There can be three types of learning activities

a) **Thinking:** The multiple types of questions motivate them to think and find alternative answer to the question asked. Besides thinking, such questions will assess learner's retention.
b) **Writing:** As there is no one to provide additional help, give practice in using the information which they have just gone through. Simple activities, writing from memory, asking to explain the topic in their own words etc.
c) **Doing:** It is said that one learns best by "doing". In science courses, in which we wish to develop certain skills, some practical exercises or activities should be given to the learners. The material can be clubbed with practical exercises. In some courses, learners can be organized into groups at study centers and given opportunities to perform skills, experiments, etc. The course writers have to make room for such activities within the materials. These activities can be different types such as conducting experiments, reading of maps, going on study and field visits to collect information and data etc.

Access Devices

Devices which help the course writer go close to the learners as possible he/she can, and help the learners come close to the content. These devices enable learners to find what they need to read and make the content more intimate to them.

a) **Cover page:** Course coordinators have to identify a suitable and attractive cover design for the course. If that is done, that would also communicate some broader view of the course to the learner and acts as an access device.
b) **Title:** We should give our unit a clear title, a title that can tell the learners what the unit is about.
c) **Structure of the Unit:** Each unit is given a title appropriate to the content presented in the unit. The learner should get a clear idea about the content being covered in the unit from the title. The structure with itemized sections and sub-sections should be given in order of the occurrence of the content in the material.
d) **Objectives:** The objectives of the unit should be defined clearly in behavioral terms.
e) **Division of Content:** Each section is indicated distinctly by **bold capitals** and each sub-section by relative **small but bold** typeface.
f) **Illustrations:** The content should be supported with appropriate illustrations, diagrams, charts, graphs, photographs, flow diagrams etc.
g) **Glossaries:** Adequate glossaries of keywords, new concepts, and technical expressions should be given in the unit after the summary.
h) **Instructions:** Precise and unambiguous instructions as how to go through the unit should be given.

Developing a unit

The course material should be oriented towards self-learning so that the learner may be able to learn with or without the support of the teacher. In other words, we have to build the teacher into the course material. The course writers should know about the different strategies through which the subject matter can be presented. The self-learning materials must combine most of the functions of a classroom teacher.

There are three parts of a unit - **beginning of the unit, the main body of the unit, and the ending**

A) Beginning of the Unit

The function of the "beginning" is to give **decisive orientation** to the learners. The learners need guidance on how to approach the unit and what to expect from it.

i) **Structure of the Unit:** while the text book normally has only one 'contents' for the whole book, distance teaching materials have a list of such items for every unit. The list of learning items is called 'structure'. The structure with the help of clearly differentiated and logically arranged sections and subsections, makes the material more learner oriented and learner friendly. The sections and sub-sections of a unit are simply numbered in the sequence using one point, e.g., 3.1, 3.2, 3.3…. and so on. In this example the left hand digit denoted unit number, and the digit on the right hand denoted the section number. It should be kept in mind that we do not use numbering beyond two points. If you feel that the parts of a subsection are important and must be included in the structure, that may be placed within the sub-section without allotting any number to them. Instead they can be highlighted with the help of bold typeface.

ii) **Introduction to the Unit:** In the introduction you need to receive, welcome and motivate the earners by giving them the impression that what they are going to study in the unit is easy and manageable. The introduction should be usually be a page or so. Because the introductory part covers the entire unit and establishes links with previous units, it may actually be written after the unit it completed.

Components of an introduction: There are three major components of an introduction.

a) **Structural Component:** In an introduction, we give information about the previous content, thus, we establish a link between what a learner has already learned and what he/she is going to study in the unit at hand.
b) **Thematic Component:** This is an overview describing the main components. It is done best by talking informally about the item in the structure, i.e., theme of the unit.
c) **Guidance Component:** We should provide study guidance to the learners as to what they are supposed to do before they start reading. The study requirements such as time, special activities, back references, equipments, books, etc. should be incorporated in the introduction.

iii) **Defining Objectives:** By objectives mean – what should, a learner be able to do after going through the unit. 'objectives' are different from 'aims'. Objectives are derived from aims. The aims are expressed by a teacher as

to what he would try to do or get across though teaching activities. On the other hand, the objectives are the behaviours to be displayed by the learner. In other words, the 'aims' are for a teacher and the 'objectives' are for the learner to achieve. Defining objectives is to identify the terminal outcomes of instruction in terms of observable performance of learners. These outcomes are to be presented in 'behavior terms' which are also called 'learning outcomes'.

Components of Objectives

a) **Condition:** A behavior can be displaced under certain condition. Eg. **After viewing the video programme,** the learner will be able to do……; **after attending the workshop,** the participants will be able to explain the concept of…. So, a statement of objectives, therefore, will always start with a condition/situation.
b) **Behaviour, i.e., action:** It indicates what behavior a learner should display after going through the unit. Eg. Distinguish between living and non-living things.
c) **Standard, i.e., level:** The learners should know 'to what level they should be able to perform'. The learners are expected to achieve this level of the objectives. If you are writing for UG level, the objectives have to be knowledge, understanding and application oriented, if it is for PG and still higher levels, objectives can go beyond application towards synthesis and evaluation.

Terminology to be used in Objectives: The objectives are defined in behavioral terms by carefully choosing appropriate verbs which are observable and measurable.

Knowledge: Define, write, underline, state, recall, select, list, recognize, reproduce, name, label, measure.
Understanding/ Comprehension: Identify, illustrate, explain, justify, represent, judge, select, name, contrast, indicate, formulate, classify.
Application: Predict, choose, construct, select, find, compute, assess, show, use, explain, demonstrate, perform.
Analysis: Analyze, select, justify, identify, separate, resolve, conclude, compare, break down, differentiate, contrast, criticize.
Synthesis: Combine, argue, select, restate, discuss, relate, summarise, organize, generalize, precise, derive, conclude.
Evaluate: Judge, support, identify, evaluate, defend, avoid, determine, attack, select, recognize, criticize, choose.

B) Main body of the Unit

Not every learner will want to read every word of the material and, not every learner will work through it once only. The material will be exploited by learners in many different ways, and clear and consistent structure helps them to do this.

The main body of the unit includes the content in the form of sections and sub-sections, each of which presents at least one new point or idea, and self check questions related to those points/ideas.

The body of the unit, therefore, consists of a sequence of materials explaining a topic and self-assessment questions, exercises and/or activities.

A division into suitable sections, sub-sections therefore, provides learners with stopping places.

- **Concept Mapping:** No two teachers/writers may present the theme/concept in the same. In other words, the theme may be presented on the bases of differing 'concept maps'. Working out the detailed structure is termed as concept-mapping.

To write a unit, the writer must prepare a few concept maps pertaining to the theme concerned, and then decide on the best of them. If you extend the argument to the concept map under discussion it is possible to develop moiré than one concept map on the theme and select best one for writing the material.

The course writer needs to aware of the following seven considerations:

i) **Small steps:** The content should be divided into small manageable learning steps/activities, and each activity should be put under a section or sub-section. The will learner will move on point-by-point. Moreover, if we want to move from teacher-centered education to learner-centered education, the content should be divided into reasonably small points so as to make easier for the learner to move from one step to the other.
ii) **Logical arrangement:** The content should be logically arranged so that the learners can proceed from one learning point to another just as if they are climbing stairs. These learning points should be stated clearly in the unit and each point should be linked with another that follows it. This logical arrangement will maintain both the continuity and consistency of what is presented.
iii) **Ordering the content:** On the bases of researches in educational psychology, we follow some principles in ordering the content for optimum learning.
iv) **From known to unknown:** Each unit should be linked with the entry behavior or the pre-knowledge of learners. The new knowledge is meaningful if it is related with their previous experience.
v) **From concrete to abstract:** As far as possible we should start with concrete materials and gradually introduce the abstractions. In order to initiate understanding, we should use illustrations, experiments, demonstrations, etc.
vi) **From particular to general:** A particular concept should be generalized after a few particular cases have been discussed. Specific characteristics of group/society lead them to make generalizations.
vii) **From actual to representative:** The learners learn quickly from the actual objects/events. If exposure to real events is not possible, the help of representative forms such as charts, graphs, diagrams, etc., can be taken to make content more easy for self-learning. This is particularly important in the teaching of science and related disciplines.
viii) **Personalized style:** In writing self-learning materials, we generally address learners by the word 'you'. This gives to the learner a feeling of being paid individual attention. The

material should give a feeling to the learner that he/she is being taught by a teacher who is not present physically. Thus the best way of getting material across to the learner is to make the writing more personal and interactive. Such a style of writing will also influence the attention and interest of the learners.

- **Language:** Writing is different and difficult from speaking in a classroom. A self-learning material should persuade the learner to read it, participate in and interact with it before it makes learners think critically about it. To help accelerate this process it is absolutely necessary to write in a language which communicates to learners effectively and most directly. Some teachers have a wrong notion that if you use difficult words you are more scholarly. But here while writing SLMs test is not for scholarship, rather how best learners understand and absorb the content. In learning at a distance, to make communication simple, effective and directive is imperative. It is the creativity of the course writer to decide, based on his previous experiences related to the level of language for the target group. Also learner's educational background, intellectual growth and maturity of thought mainly determine the difficulty of the language. Thus, you should write in a simple, plain and clear language. If your unit makes learners consult the dictionary quite often, it indicates the difficulty of language. The sentences should be short and simple. If the sentence is too lengthy, break it into two or more small and simple sentences. Even if your sentences, grammar and vocabulary are simple and very intelligible, lengthy passages may spoil the effect. One idea can be presented in one paragraph.

i) **Use of personal pronouns:** Writing for distance learners is talking to them. So let your personal voice emerge in your writing. In our dialogue or conversation, we use 'you' and 'we'. Friendliness motivates learner to read and seriousness makes the learner focus on the subject. Hence a balance between these two has to be maintained in our writing.

ii) **Humour:** There are teachers in the classroom, who use humour to communicate the subject more effectively. Not every teacher has such a skill, but those who have that skill can use it in their writing of SLMs.

iii) **Illllustrations:** Illustrations create interest, stimulate, imagination, increase comprehension, and help retain information/knowledge on long term bases. To be effective they should be presented in varied formats, not in a dull and monotonous fashion.

Assessment: In SLMs we use two types of assessment. **In-text questions** that include self-check questions, check your progress questions, exercises, activities and assignment question. **Term-end examinations** exclusively measure the learners' performance.

Self-check questions/SAQs: the functions of these questions are to help the learner to revise information to support learning, and to assess, for himself as to how much content he has grasped ie., to provide him feedback. It looks simple but framing relevant questions for a particular purpose (stimulating, encouraging, checkup the progress etc.) and inserting them in the right context is not an easy task.

Care has to be taken that learner has to spend on that minimum amount of time (say 1 to 3 minutes). You may give one or two questions for each section of the unit.

All SAQs must be provided with **model answers/possible answers**. They serve the purpose of feedback to the learners and consequently enhance their learning and maintain motivation.

ii) **Activities:** The activities provide the opportunity to the learners for the practical application of knowledge gained through the print material. The activities are in a sense a pedagogical diversion of learners' attention. An activity is **not a Project**. The learner may spend maximum time of 8-12 minutes. The activities should not involve large amount of time, energy and money.

iii) **Exercises:** Exercises perform slightly different functions from that of activities. Exercises facilitate learning through practice (drill) and reinforcement. Practice is one of the basic conditions of learning.

iv) **Assignments:** The basic purpose of an assignment is to initiate actual dialogue or pedagogical interaction between the distance teacher and the distance learner, and thus reinforce learning. Then the sense of isolation of both the learner and the tutor/academic counselor is reduced. The assignments provide feedback to both the teacher and the learners. This is called continuous assessment. Assignment may contain Essay and Short answer type questions. The scope of each question within an assignment should be defined clearly, i.e, guidelines regarding the length of the answer, points to be covered, criticality, whether to give illustrations, etc., should be stated explicitly.

A tutor has to write his purposeful comments on the assignment and also award a grade to the response.

C) Ending of the Unit

i) **Summary:** The learner is aided to recall the important points in the unit.

   a) **Recapitulation:** Learners recapitulate the important learning points discussed in the unit.

   b) **Reinforcement:** Through the summary of the unit, the learners remain motivated for further learning. They feel themselves capable of managing learning without much external support.

ii) **Glossary:** The key words, difficult words, and the neutral/multi meaning words should be glossed at the end of the unit.

iii) **Suggested books:** The suggestion is that the listed books should be useful for the learner and should be easily available at reasonable prices. The presentation of the content should be simple and readable so that the learners can get something more out of these books.

Outline View of Developing A Lesson

I) BEGINNING OF THE LESSON   II) MAIN BODY OF THE LESSON   III) ENDING OF THE LESSON

I)   BEGINNING OF THE LESSON
    1.   Structure of the LESSON
    2.   Introduction to the LESSON
       a.   Structural Component
       b.   Thematic Component
       c.   Guidance Component
    3.   Defining Objectives
       a.   Condition
       b.   Behavior/Action
       c.   Standard/Level
       d.   Terminology

II) MAIN BODY OF THE LESSON
    1.   Concept Mapping
       a.   Small steps
       b.   Logical arrangement
       c.   Ordering the content
       d.   Known to unknown
       e.   Concrete to abstract
       f.   Particular to general
       g.   Actual to representative
       h.   Personalized style
    2.   Language
       a.   Use of personal pronouns
       b.   Humour
       c.   Illustrations
    3.   Assessment (In-text questions & TEE)
       a.   SAQs
       b.   Activities
       c.   Exercises
       d.   Assignments

III) ENDING OF THE LESSON
    1.   Summary
       a.   Recapitulation
       b.   Reinforcement
    2.   Glossary
    3.   Suggested books

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