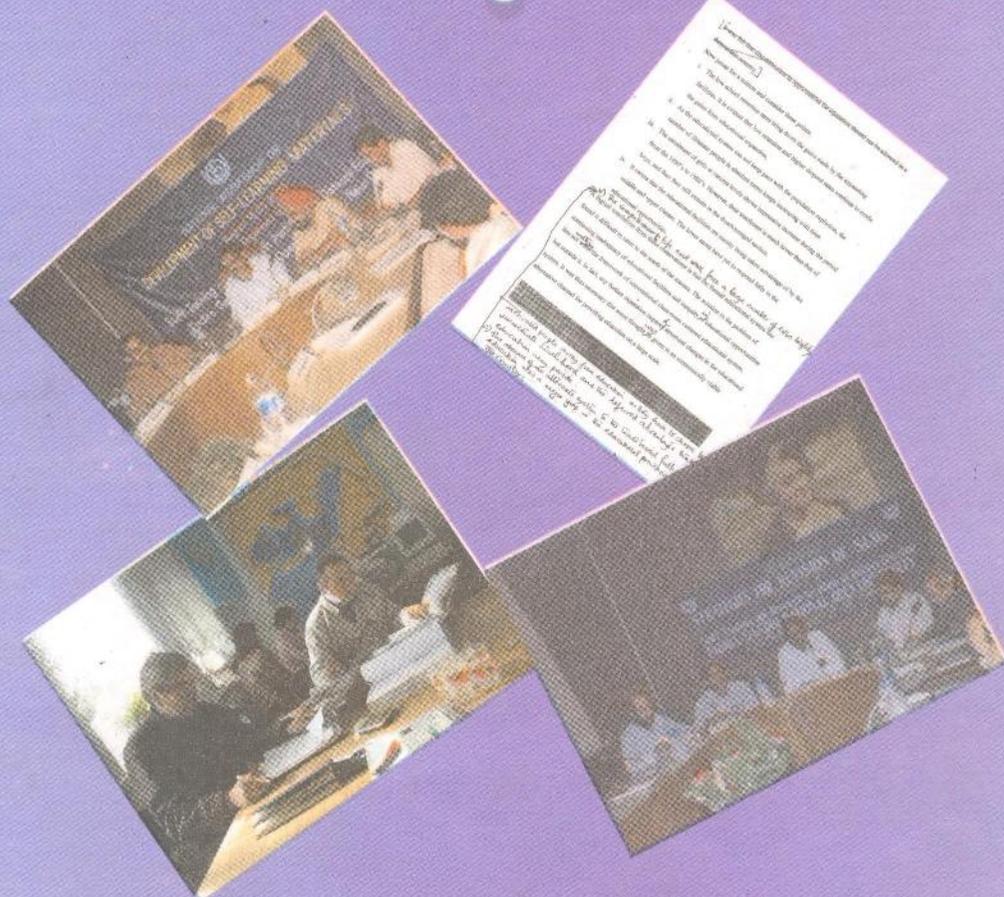


Development and Revision of Self-Learning Materials



**Staff Training and Research Institute of Distance Education
Indira Gandhi National Open University
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STRIDE Handbook 5

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STRIDE HANDBOOK 5

Development and Revision of Self-Learning Materials

Revised and redesigned version of IGNOU Handbook 5
'Self-Instructional Course Units' prepared by
B.N. Koul and Sohanvir Chaudhary (1989)

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FOREWORD

Starting from correspondence courses, a few decades ago, teaching and learning through non-conventional and non-traditional modes, have undergone very dynamic and impressive changes to improve the quality of education. The emerging systems and trends are inherently flexible, widely accessible and endowed with immense capability to cater to the need of large target group of learners. In view of such unique and distinctive features, these systems are now identified as the open and distance learning systems (ODL). It is now very well realized and understood that for effectiveness and success of the ODL systems, very well trained faculty, media professionals and distance educators are all required to work together as a cohesive team. In the past decade, the ODL system has attracted considerable attention and acceptance of policy makers with the result that it is getting considerable support. It is now being seen as a compulsion for training, retraining and education for life long learning. This has become possible due to the contemporary developments in Information and Communication Technologies (ICT) and their application to the system of education. It is becoming very apparent that in recent years the ODL has very meaningfully absorbed the ICT for the betterment of the system, to make it more cost effective and accessible so as to bring in equity in education.

The ODL has been growing at a very fast rate and massive human resource training in the Open and Distance Learning System is required to handle the system efficiently. Keeping in view the above requirements of manpower development, the Staff Training and Research Institute of Distance Education (STRIDE) has brought out a series of Handbooks on different themes of ODL. This Handbook titled “Development and Revision of Self-Learning Materials” deals with principles and practices of development and revision of self-learning materials which is key component of any ODL institutions in our country. Hence it will be useful for the teachers and course writers of these institutions.

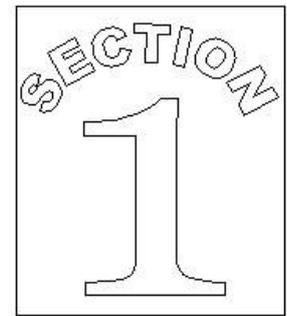
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INTRODUCTION

STRIDE has produced a series of Handbooks on the various themes of distance and open education. The handbook is the fifth in the series dealing extensively on the process of development of self-learning material and revision of the material.

This handbook is meant for those who are working or intend to work in distance education systems, and also for those who want to know how to develop self-learning materials for distance learners and how to revise those materials periodically. In this document we have tried to explain the functions of a course writer. Our intention is to show you how the experience you have gained in face-to-face teaching can be utilized effectively for the new assignment of writing for distance learners. The broad objective of this handbook is to help you acquire reasonable skills/confidence to write self-learning materials and revise those materials.

It is a fact that the success and effectiveness of distance education systems largely depends on the study materials. Thus, in developing self-learning study materials, the course writers have a crucial role to play. Writing for distance education is a more challenging task and quite different from that in 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. But based on our own experiences and the experiences gathered from other distance education institutes and open universities, we should be successful in developing a viable, effective and manageable model/ format to suit our Indian conditions. The format, we discuss in this handbook, is flexible to accommodate further improvements. We admit that this is not the best and the final format for developing self-learning materials.

In this handbook we have also tried to show how self-learning materials 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.

This handbook has seven sections covering two important phases of the print materials in distance education : a) the entire process of writing self-learning materials; and b) the revision of materials. Revision of self-learning materials 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, counsellors, experts and others in order to make the course more relevant, learner friendly and academically rich.

We hope that this booklet will not only be useful to you but also to all those who work in open and distance education institutions and personnel working in any sector who want to use distance mode to impart education and training in those sectors. It will also fulfill the needs of emerging distance education institutions and open universities in India. We welcome feedback and suggestions to improve the format we have presented herein and to develop better and dependable models for writing and revising self-learning materials.



OBJECTIVES

The specific objectives of this handbook are given below:

After going through this handbook you should be able to

- Formulate objectives for a self-learning unit;
- choose appropriate subject matter for your discipline/subject;
- decide on the best sequence of the items to be taught;
- develop the sections and sub-sections and present the content;
- design assessment questions;
- evaluate your materials; and
- identify the need and strategies for revision of self-learning materials.

The logo for Section 3 consists of the word "SECTION" in a curved, uppercase font at the top, and a large, stylized number "3" in the center, all enclosed within a rectangular border.

SELF-LEARNING MATERIALS

Teaching through self-learning materials is catching on through out the world – in the developed as well as the developing countries. This mode of education will continue to flourish as more and more open distance education institutes/ universities are coming up to meet a variety of educational needs of the ever increasing number of learners and fast changing societal conditions. Besides subject based teaching, much professional and industrial training is now imparted through self-learning packages. Such materials are needed for in-service education, life long education etc.

Self-learning materials (SLMs) are designed for both on site and at a distance learners to use on their own. 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 – largely pre-planned, pre-produced and pre-packed.

3.1 Terms Used

There are quite a few terms which are frequently used in distance education. You, as a course writer, should be familiar with all the important terms relevant to the process of writing self-learning materials. Before we go further, it would be worthwhile to understand some of these terms, especially the ones which are in use at the Indira Gandhi National Open University (IGNOU).

- **Programme:** By a programme, we mean the curriculum or combination of courses in a particular field of study. For examples, Undergraduate programme, Diploma programme in Management, Post-graduate Diploma programme in Distance Education, M.A. programme in English etc.
- **Course:** The programme is divided into courses. In conventional education, when we talk of a course, we usually refer to a subject and level such as post-graduate chemistry, primary level maths, undergraduate biology and so on. In distance education the term 'course' includes more than this. It is used to describe 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.

Thus, each course consists of a few printed booklets called Blocks, a few audios, a few videos, some assignments and whatever else may go with it.

Going back to the expression programme, the point to remember is that a PROGRAMME consists of a few COURSES. For example, an Undergraduate Programme may consist of a course in Physics, a course in Chemistry, a course in Mathematics and a course in a language. **Programme** is, thus, a superordinate term and **Course** a subordinate one.

- **Block:** A course is divided into 'blocks'. The block appears in the form of a booklet of around 60/80 printed 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.

Again the point to remember is that each COURSE consists of a few BLOCKS which appear as booklets.

- **Unit:** The term 'unit', of course, the context is that of IGNOU, is used to denote a division of a **block**, at one level in terms of the theme or topic and at another level as the material used to teach the topic.

A unit, is a self-contained portion of a **block** covering one or more interwoven learning concepts. Each unit is broken into **sections** and **sub-sections** for the clarity of the presentation of concepts, information, illustrations, etc.

Each unit is, thus, an individual lesson and fits into the block it belongs to. It contains orientation for learners, introduction to the content, explanation of the topics covered and exercises to help them learn the material.

All the units of a block are logically, and also thematically, linked with each other. At some institutions, units are called 'lectures', 'lessons' 'topics' or 'chapters'. But the word 'unit' is commonly used among distance educators today.

The length of a unit is also an important feature to be taken into consideration. IGNOU courses have a unit of 5,000 to 6,000 words or 25 to 30 — typed (double space) pages (A4 size paper) approximately. This amounts to about 15-17 printed pages. This kind of thrust has been built on the basis of following three considerations:

- **Pedagogy:** Keeping in view the skills, attention span and study habits of the learners, the content load should be appropriate and manageable. 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. But, then, there are constraints of thematic continuity, attention span, economy, bulk of print materials etc. which force us to opt for a unit of a larger size. However, it should not be too large to defeat the very purpose for which it is prepared.

- **Uniformity:** All the IGNOU's units should display a reasonable degree of uniformity for other reasons. For example, unit writers have to be paid according to uniform scale, for which the unit size has to be standardized.

- **Printing:** Open and Distance education institutions have to produce a standardized output i.e., to have a specified size and length of each unit/block, as the printer has to be paid for a particular size of a booklet.

All the units, blocks and courses of a programme are interrelated. Their hierarchical relationship is presented with the help of the following scheme:

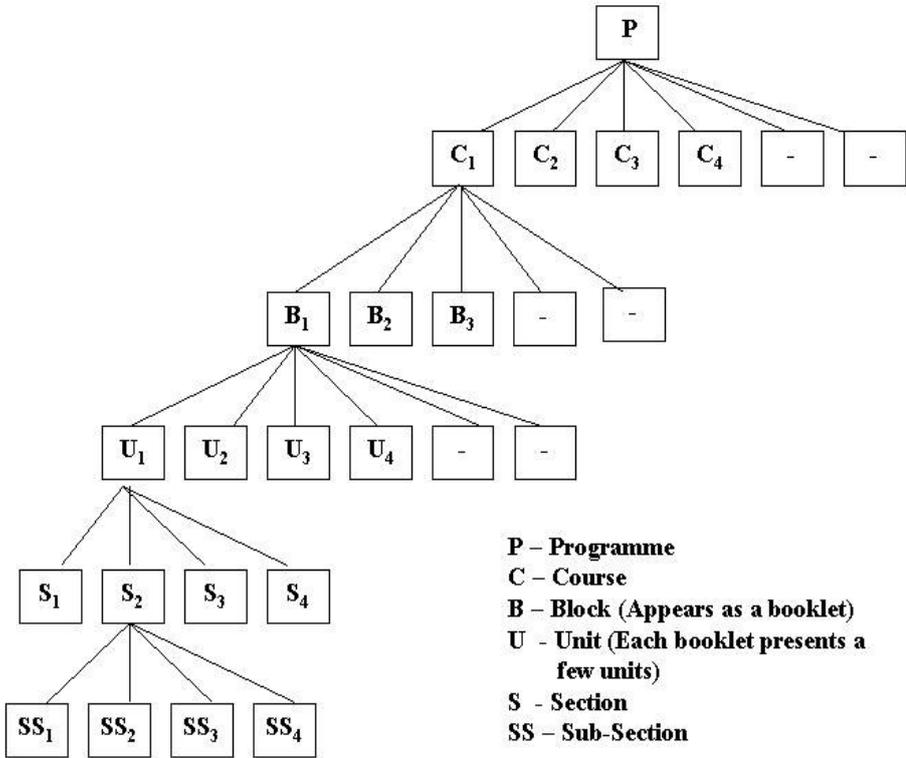


Figure 1: Hierarchical Linkage Scheme

- Course **maintenance** involves maintaining ‘correction file’, (preferably block wise) receiving feedback, undertaking minor corrections in print materials in the form of errata sheets, supplementary materials, revision of extra readings, preparation of assignments, programme guides, prospectus, practical guides etc.
- Course **updating** deals with feedback analysis of various sources based on that undertaking minor changes in course contents, presentation of content and subsequent modifications in programme guide, programme delivery etc.
- **Revision:** Programme/Course revision builds on the maintenance and updating of data, and the experiences accumulated over a few years of programme delivery and involves relooking at — the entire curricular structure of the programme, the multi-media self-learning materials, assignments and manuals, tele-conferencing and interactive radio counseling, laboratory and hands-on experiences and the entire programme delivery.

Activity 1

Describe the relationship between a programme, a course and a block.

Activity 2

What is the rationale behind the length of a unit ?

3.2 Self-learning Materials v/s. Conventional Instructional Materials

Let us start by reflecting on the similarities and the dissimilarities between face-to-face and open distance teaching. You may discuss this issue with those who are directly exposed to the open distance education systems or who have first hand experience of these two forms of teaching. A discussion of this type will help you to shape your thinking about open distance education besides pin-pointing the possible difficulties you may face as a course writer. Our experience shows that majority of our course writers come from conventional institutions, in such situations a discussion on classroom setting, classroom management and role of teacher etc. help a lot to put the issues in a comparative perspective during the writing of a course for distance learners. This perspective helps in course writing and addressing the needs of distance learner in the process.

In the conventional system of education, the students get most of their instruction through face-to-face interaction with a teacher and they attend classes regularly in peer groups. The students under this system use the already existing text materials (text books). No special materials are developed for these students. Self-learning, on the other hand, depends on the materials specially prepared or transformed for a target group. In self-study, the learners get very little opportunity to interact with the teachers and peer groups as in the classroom situations. This loss is compensated by a special kind of self-learning material which includes all the study materials developed to stimulate independent learning.

Other major differences between self-learning and conventional instructional materials (textbooks) are given in the following table:

Textbooks	Self-Learning Materials
<ul style="list-style-type: none">• Assume interest• Written mainly for teacher use• Do not indicate study time• Designed for a wider market• Rarely state aims and objectives• Structured for teachers and specialists• Little or no self-assessment	<ul style="list-style-type: none">• Arouse interest• Written primarily for Learner use• Give estimates of study time• Designed for a particular learner group• Always give aims and objectives• Structured according to the need of learners• Major emphasis on self-assessment

Table 1: Textbooks Vs Self-learning Materials

The course materials are presented in such a way that a learner can learn from the material independently as it carries out all the functions of a teacher, such as guiding, motivating, expounding, explaining, provoking, reminding, etc.

3.3 Characteristics of Self-learning materials

Self-learning Materials (SLMs) differ from a chapter of a textbook or an article of a journal. The chapters of a text book 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. Similarly an article in a journal is a means of communicating with equals in the profession. On the other hand, SLMs are the instrument for learning. The main characteristics of SLMs are discussed as follows:

- i) **Self-explanatory:** The content should be presented in a style so that a learner can go through the material without much external support. The content should be self-explanatory and conceptually clear. For this, the content is analysed logically before it is presented. This order maintains the continuity and the consistency of the content. Thus, the SLMs promote self-learning on the part of the learner.
- ii) **Self-contained:** Efforts should be made to make the material self-sufficient so that a learner does not hunt for the additional sources, or even a teacher. Not that distance learners should not seek external support, or meet a teacher, but 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. While avoiding the non-essentials only the essential details need to be presented so that the unit can cover all information required by the learners and keep away all that is not necessary. Hence identification of adequate content is always a challenge to a distance teacher/course writer. Don't you think so?
- iii) **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 is presented 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. Some teachers in conventional classroom situations also

do not feel and do the activities like guiding, instructing, moderating and regulating the learning process. The reasons may be many such as time constraints, teacher style, lack of interest in these aspects etc. However in the context of distance learners you as a course writer have to take care of these components and direct the learning process in the course material, so that learners can direct their learning process in the absence of a teacher.

- iv) **Self-motivating:** In distance education systems, the learners remain off the campus for most of their study-time. 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.

- v) **Self-evaluating:** As the learners remain separated from the open and distance institutions and the teachers, the study materials should make provisions for feedback as well. 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, reinforces learning, and motivates them for learning. The course writer should develop a built in evaluation system by giving an appropriate number of self-check exercises, activities and ‘check your progress questions’.

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. Such indication of progress in his/her learning further motivates to do better.

- vi) **Self-learning:** Self-learning materials are based on the principles of self-learning. So 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 and so on.

3.4 Learning Activeness

Simply reading the unit will not guarantee learning. The material has to be such that the learners can interact with it more and learn better. This characteristic of SLMs is known as learning activeness. A unit is said to be learner active if it has the potential to motivate the learners 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. This would lead to effective learning among distance learners (for more details related to effective learning refer STRIDE Handbook-2, 2002).

For more clarity ‘a unit that is learner active’ can be compared with an effective teacher in the classroom situation who motivates learners, explains concepts and provides all the possible guidance and direction in their studies.

You know that reading a course material or listening to a radio programme, or viewing a TV programme is normally a passive and monotonous activity. Simply reading the words does not necessarily excite a learner to make any response. We also know from the experience and from theories of learning that eliciting a response is an essential component of learning. So the study material should make the learner active and responsive. Then only can we call it self-learning. Learning activities open up the genuine interaction between the learner and the material. A good distance teaching material will contain numerous activities, (as many as a distance teacher can visualize and create) so that the student is perpetually stimulated to learn.

These learning activities should be put in a sequence as the learner progresses from one step to another gradually. For this the course writer has to exploit his/her existing knowledge, difficulty level of the material and how much of new information learners can absorb and needed at that level of their studies. Thus, the educational needs and abilities are to be prejudged to finalise learning activities. Isn't it a challenge to the distance teacher/course writer?

Learning activities are of different forms. In face-to-face classroom situations, a teacher may ask students to answer a question, take notes on his/her lecture, observe and record an experiment or demonstration, or do quick exercises. But in open and distance education, which uses passive print and other media, we need to build in, these activities deliberately and aim at making them effective and purposeful. There can be three types of learning activities.

- **Thinking:** We know that learning involves interpreting facts and building links between them. We can stimulate thinking by setting questions, which will make the learner attentive and more interactive with the content. The questions will encourage them to stop... and think for a while before moving on to the next step. The multiple types of questions motivate them to think and find alternative answer to the question asked. These questions can force the learners to think on the

issue being discussed and can draw their attention towards the content. Besides thinking, such questions will assess learners' retention.

- **Writing:** Writing exercises help the distance learners consolidate what they have learnt in the unit. Writing the points down also makes them attentive and active.

The unit writers should take care of difficulty level required in such questions. As there is no one on hand to provide additional help, these questions should be geared to the level of the average learners. Too difficult questions may pose a challenge to such learners and may result in demotivation and gradual loss of interest in studies. The main purposes of giving these questions are to give reinforcement, and to give practice in using the information which they have just gone through. Thus the simple activities can serve the purpose in many circumstances. But as our learners are adults, these activities should involve some sort of thinking. Overall framing questions keeping in view the above factors is not an easy task to any course writer, but certainly not an impossible one.

There can be several types of writing exercises:

- *Copying or writing from memory* It is simply a way of strengthening the memory by repetition. For example, list three stages of material production.
- *Answering questions* which involve extending what has just been learnt to other items in the same area. For example, practicing an arithmetical process, formulating aims and objectives in your subject.
- *Applying* what has just been learnt to a new situation. For example, in the Indian context, which one may be better – the course team approach or appointing part-time course writers? Give at least three reasons to support your answer.
- *Answering the questions designed to test comprehension.* For example, explain the functions of an assignment in distance learning.

These activities provide periodic checks on the learning of distance learners.

- **Doing:** The third type of learning activity is 'doing' something practical. It is said that one learns best by 'doing'. In the courses such as geography, science, etc., 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. For example, the learners of Diploma in Nutrition can be asked to prepare different nutritive food items; final year degree student of sociology can be

asked to compare the rural and urban societies after his/her own observation.

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 of different types such as conducting experiments in science, reading of maps, going on study and field visits to collect information and data etc. The course writers should note that the activities listed above are illustrations only. A range of this variety of activities depends on the resourcefulness and interests of course writers.

One caution to be observed by any course writer is that the amount of time a learner needs to spend on any activity/exercise etc.

As these activities/exercises are given alongwith the material; learner should not be diverted for longer duration by giving longer/difficult questions/activities/exercises etc. At the best learner may spend few minutes (5-10) and come back to the material for reading so that focus and rhythm of study would not be lost.

Activity 3

Do you think that activities/questions of ‘doing’ type are appropriate in the middle of the material or not? Give brief justification to your answer.

3.5 Access Devices

Access devices are those devices which help the course writer go as close to his/her learners as possibly he/she can, and help the learners come as close to the content as he/she can. These devices also help the learners find

their way into the material. There are three main functions of these access devices:

- They enable learners to find what they need to read in the unit, i.e., the means and ways to reach the content.
- They make the content more intimate to learners and help them grasp what is presented in the unit.
- They perform the functions of a live classroom teacher, i.e., build a teacher in the material.

Some of the access devices are explained below:

- **Cover page:** As a course writer you need not be concerned about cover page, but course coordinators have to identify a suitable cover design for their course. If that is done, that would also communicate some broader view of the course to the learner and acts as an access device. To get an idea in this regard you may see few samples of cover pages produced by IGNOU in the following page.
- **Title:** We should give our unit a clear title, a title that can tell the learners what the unit is about. For example, to give the title 'Distance Education' is not enough. It should be more explicit and clear, for example, 'The Process of Course Production in Distance Education'.
- **Structure of the Unit:** The structure with itemized sections and subsections should be given in order of the occurrence of the content in the material. The structure draws the learner's attention to the subject matter. For details see sub-section 5.1.
- **Objectives:** The objectives of the unit should be defined clearly in behavioral terms. We shall discuss this issue under subsection 5.1.
- **Division of Content:** To make the content easily accessible, we divide the units into sections and subsections for easy reading and better comprehension. Each section is indicated distinctly by **bold capitals** and each subsection by relative small **but bold** typeface. The significant divisions within sub-sections are in still bold typeface so as to make it easier for learners to see their place within sub-sections, and the items which need to be highlighted are numbered (i.e., (i), (ii), etc.). For purposes of uniformity we have employed the same scheme of 'partitioning' in every unit throughout the IGNOU courses. Generally we begin each Unit with the section **Objectives**. It articulates briefly.

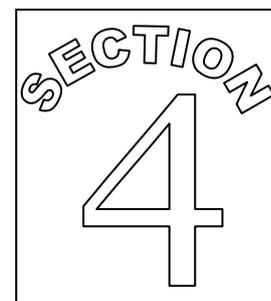
Figure 2: Samples of Cover Pages of IGNOU Materials

- What we have presented in the unit, and
- What we expect from learners once they complete working on the unit.

In the last section of each unit, under the heading ‘Let Us Sum Up’ we summarise the whole unit for purposes of recapitulation and ready reference. In place of the expression ‘Let Us Sum Up’ we may use some other expressions, such as **summary** or the like.

Besides, we give self-check exercises under the caption ‘Check Your Progress’ at a few places in each unit which invariably ends with model answers/possible answers to the questions set in these exercises.

- **Illustrations:** The content should be supported with appropriate illustrations, diagrams, charts, graphs, photographs, etc. A concept map or flow diagram can show the interconnections of the content more clearly.
- **Glossaries:** Adequate glossaries of keywords, new concepts, and technical expressions should be given in the unit after the summary.
- **Instructions:** We should remember that our learners are physically separated from institutions. So precise and unambiguous instructions as how to go through the unit should be given.



SOME BASIC CONCEPTS

We have tried to make it clear that the distance education systems function differently from the conventional education systems. A course writer, therefore, needs to know what the systems of distance education are. Some of the prerequisites for course writing are discussed as follows.

Familiarity with the system: The course writer should be well aware of the instructional system/methods of open and distance education institutions. IGNOU provides educational opportunity for those who could not have access to the formal system of education due to one or the other reasons – employment compulsion, social and domestic constraints, economic backwardness, geographic remoteness, etc. Based on this assumption, an open distance learning system has been adopted to make relevant education more accessible to larger numbers and heterogeneous groups.

Under this system, education is imparted through the technique of distance teaching and learning. The learners study on their own at their convenience and enjoy the facility of self-pacing. It is assumed that all the learners are highly motivated to achieve their predetermined objectives. And this motivation has a powerful bearing on distance education system – be it on the content or on the design of the syllabus or delivery mechanisms.

Open and distance education institutions have an industrial system of working in which every process/stage of production is time-bound. So if you take up the job of writing a unit or a block, you should be committed and should make best efforts to complete the job in time, otherwise the production schedules fail, any such failure amounts to the failure of the entire system. You don't generally face such situations in the conventional institutions. Our suggestion is, that before you accept the schedule, look at your convenience, and after accepting it, stick to that.

4.1 Correspondence Vs. Distance Education

Correspondence education in India and elsewhere in the world has a reasonably long history and tradition. About 175 years ago, when postal system was used for educational purposes for the first time in England, the conventional educational system, brought correspondence education within its gambit, as one of its sub-domains. To all intents and purposes this new

addition remained unnoticed for years, though the proliferation of courses given through correspondence went on unabated. It is only during the last 30 years, with the beginning of the British Open University in England, that open distance education emerged as a concept different from correspondence education. Distance educators themselves took more than 15 years to finally realize that they were more than correspondence education – it was during the Twelfth World Conference of the International Council for Correspondence Education (ICCE) held at Vancouver in 1982 that the council was renamed as the International Council for Distance Education (ICDE). Very often, open distance education and correspondence education are thought of as synonymous. However, the scope of open distance education is much wider than correspondence education. Open and distance education differs from correspondence education in its purposes, orientation and media through which education is imparted.

Let us first see, how correspondence and open distance education vary in their objectives. For long, correspondence education as an appendage of conventional educational system, has had its main purpose as preparing students to sit for regular board or university examinations. Whereas correspondence education becomes an extension of conventional education as far as its imparting of prescribed knowledge for issuing of certificates is concerned, open distance education aims at more varied goals. These include personal growth, training for better job prospects and job enhancement, i.e., in-service training, life long and continuing education, a change in attitudes in addition to imparting of knowledge. Above all, open distance education has a social purpose, which the correspondence education has ignored throughout. By tradition, higher education has been the privilege of a few. Education has been an elitist pursuit, with only a few belonging to higher economic and social class having access to it. Open distance Education is a means of education for masses. At the same time it tries to fulfill the constitutional obligation of equal opportunities to all. Open distance education promises much more by way of educational opportunities by extending its reach to one and all, undoing all the traditional known constraints – non-availability of seats in educational institutions, non-availability of such institutions in such geographically difficult terrains, poverty of aspirants, etc. Not only does open distance education make education accessible to masses, it also makes education more socially relevant. It offers the types of courses and education that people need, not only in order to become better in their professions, but also better citizens and human beings, aware of their rights and duties. Open distance education by virtue of what it does and can do is an important means of democratizing education. Hence many developing countries are opting for open distance education as a potential alternative for promoting and democratizing higher education in these countries.

Correspondence and open distance education differ in their orientation also. Whereas correspondence education is essentially a name based on the mode of the distribution of didactic materials, it is simply oriented towards imparting of information. On the other hand, open distance education is oriented towards pedagogy, that is, affecting the process of learning/teaching. It tries to build the teacher in the course material itself. Through various means, effective academic communication takes place between the teacher who is away from the learner in physical terms and the learner. No such communication is envisaged in correspondence education.

As far as the means of imparting information are concerned, correspondence education refers to traditional type of education given mainly through printed materials, by the postal system. On the other hand, open distance education refers to non-traditional innovative type of education that uses all the possible means of communication, that is, a multi-media approach including the human contact. The other media involved in a multi-media package in addition to print are audios, videos, radio and television broadcasts, video teleconferencing, computers, etc., as well as face-to-face sessions. With the advances in communication technology, open distance education has tried to incorporate advanced strategies and technologies of communication. However, this is not to mean that electronic media can be used indiscriminately, just because the system accepts and follows a multi-media approach. What has to be done is to make optimum use of each medium. What goes best through print, should be necessarily imparted through print only. Similarly, for certain concepts that can be put across through audio or video only, audio/video may be used.

Activity 4

What are the main differences between correspondence and open distance education?

What are the main objectives of open distance education?

4.2 Open education

Often ‘distance education’ is confused with another term, that is, **open education**. Open education refers to that kind of non-conventional education which has been weaning away from the conventional constraints that characterize the traditional university education. Certain features associated with open education are non-restrictive admissions, multi-point entry, no age and qualification restrictions, no attendance restriction, teaching at a distance in a non-contiguous manner, no restrictions on the period of time devoted to a course, no restrictions on the number of examinations given and taken in a year, no restrictions on subject combinations for a particular degree, credit accumulation, learner autonomy, etc. The larger the number of above features incorporated in a particular system of education, the higher the degree of its openness. It should be clear that Correspondence Institutions or even Distance Education Institutions may or may not be Open Institutions, or may be so only to a limited degree. And at the same time, even a traditional college/university may become ‘open’ to a recognizable degree. With increasing competition among the conventional institutions a few institutions are trying to follow openness in some way or the other to attract clientele and face the competition. It should be clearly understood that there can be various degrees of the ‘openness’ of education. However, at the moment it is difficult to say as to which level of ‘openness’ may legitimize the nomenclature ‘open university’ for a university. But the relationship between distance education and open education is increasing progressively.

Open education can be effected easily through distance education systems on the one hand, and on the other advances in the practice of distance education help and encourage education to become more and more open. The distance mode with its flexibility and potential allows the educational systems to be ‘open’ and the openness of the educational systems suits the promotion of distance education. That is why the two go together so well.

Familiarity with the target group: The writer’s first job is to be clear about his /her target group (learners) – their socio-academic background, their needs, linguistic abilities, aspirations, their potential for learning, study habits, prerequisite knowledge, etc. It is true that we may not come to know each and everything about a learner, yet certain general facts help us reach our learners more effectively. Mostly they are adults in different age groups – 20 years onwards. They come from different parts of the country – metropolitan cities, towns, rural and remote areas. They belong to varied social and economic backgrounds. They have varying experiences of life, and different ambitions and expectations. Obviously, the learners with all these differences will study the same course materials. For this reason, it is very difficult to decide the level of the content or even the style of presentation. To overcome this difficulty, the course planners should depend on what information they may have about the needs of the target group. These needs will provide a base for deciding the content and also the presentation. Experience of classroom teaching gained over the years would also help a lot in writing for distance learners. As most of our course writers come with this experience they are in a better position to decide as to what quantum of content is needed for a particular level, and which presentation style usually suit the learners (varied styles accumulated during their teaching in the classroom would be useful in this context).

Familiarity with syllabus: The writers should be familiar with the syllabus of the course. The length and scope of the content is essentially based on the syllabus. Any deviation from the syllabus may create problems for both the university and the learners. It is therefore, necessary that the syllabus is thoroughly analysed by the writer before he/she starts writing a unit. Hence proper understanding of course related factors will help you chalk out your writing business. For this, you may refer to the aims and objectives of the course under consideration as defined by the expert committee. Even within the syllabus, the level of the course should be clearly understood by the course writers. Our experience shows that one or two days meeting (face to face) involving all the course writers helps to sort out all these issues and orient them to write for distance learners. The most important point is to arrive at a common understanding about the programme and learners’ requirement. This is possible after a thorough discussion that takes place in such meetings among the course writers on one hand and distance education the programme team and experts on the other.

We have said above that the maximum number of CREDITS one can complete in one academic year is 32. One way of looking at it is that an academic year may be assumed to consist of 32 working weeks. In actual practice at conventional universities the number of actual working weeks is less than 32, around 26-27 weeks. However, a distance learner who remains unaffected by the regular university regulations may not find it difficult to put in 32 weeks of actual work. Thus, we may say that a CREDIT comprises academic activities of various types that can be completed in one working week.

A different way of looking at a CREDIT is to look for inputs in terms of learners hours. To explain the notion of learners hours we need to refer back to the conventional system of education. In the conventional university system a student makes two types of inputs in terms of time/hour:

- Contact TIME (the actual time spent by a student in contact with his/her teachers, demonstrators, class-mates etc.)
- Private Time (the time needed by a student to prepare a particular portion of a syllabus).

While as the contact time for each and every student is the same as it is provided by the time-table of the university/college, the private time is a variable and depends on individual learners – one learner may give more time to prepare a particular portion of a syllabus, while as a different student need less to prepare the same portion. In distance education also we talk of two types of student inputs in terms of time/hours.

- a) Study Time (the time a student may spend in studying the printed course units, work through in-text/self assessment questions, prepare responses for assignments, use audio/video materials at study centers or elsewhere, attend academic counselling sessions, attend teleconferencing sessions, work on experiments, etc).
- b) Private Time (the same as indicated above).

At IGNOU we try to ensure that the **study time** demanded from a distance learner for a particular course should not fall below the **contact time** provided by a conventional university for the same or similar course. We leave out **private time** from our discussion as no control can be exercised on the **private time** needed by an individual learner which varies from learner to learner whether it is distance or conventional system.

The substance of what we have said is that at IGNOU we would like to demand at least as many **study hours** from a distance learner as a conventional learner is meant to put in as **contact time** for a comparable course at a conventional university. This is needed on both counts –

credibility of the system and recognition by other institutions and accrediting agencies.

To materialize this idea we assess and calculate the **contact time** prescribed by a few universities for a particular course and reach at the average **contact time** for such a course. Secondly, we may look for the **contact time** or study time, whichever is available, for a similar course given by a few foreign universities.

On the basis of these data we decide on the number of **study hours** which we would like our learners to put in for a particular programme. For example, for our undergraduate programmes we expect a learner to put in 960 **study hours** per academic year.

Going back to the notion of CREDIT, we may say that these 960 study hours constitute 32 CREDITS, or one CREDIT at IGNOU is equal to an input of 30 **study hours**. We also said that one credit is equivalent to a week's **study time**, which then amounts to **5 study hours** per day in a 6-day week or **6 study hours** in a 5-day week. So far we have talked about the notion of CREDIT in terms of student inputs seen as **study time**.

Now we shall try to look at the notion of CREDIT on the basis of course-materials. As we have explained elsewhere, a course in our system consists of a few blocks each of which is something like 60-80 printed pages. A block usually presents a particular theme within a course. Each block has a few video and audio programmes to go within. Besides, each block may have some intext/ self assessment questions and an assignment to go with it. It has been seen that generally one block of standard length (including the other materials and academic tasks that go with it) demand a **study time** of about 30 hours. There might be some variations here and there but generally work on one block amounts to completion of one CREDIT. For example, the break-up could be as follows:

- a) 20 hours for studying the 4 units in a particular block @5 hours per unit including work on intext/self-assessment questions.
- b) 3 hours of work on 1 video and 2 audio programmes accompanying the block.
- c) 4 hours work on the assignment pertaining to this block.
- d) 3 hours work pertaining this particular block, with the academic counsellors at study centers.

Depending upon the nature of the programme, course and instructional design planned, the above components and its duration in a block may vary.

Thus, if a distance learner works through a block of the type we have mentioned above and also performs all the tasks that form a part of this block, he/she will have to put in 30 study hours, which in other words means that he/she will have completed one CREDIT of the course concerned.

The concept of CREDIT as elaborated above, should help a course writer to visualize as to how and how much of a particular content may be presented in a particular Unit or Block.

For example, if a Block has 4 units, the unit should demand around 5-6 study hours. But, if it has 6 units, then each unit should demand at an average, about 3 ½-4 study hours.

A clear understanding of the notion of CREDIT should help the course planners and course writers in taking decisions regarding:

- Length and design of a unit in a Block
- Nature of tasks set in an assignment
- Number and length of audio and video programmes in a course
- Nature and amount of academic counselling needed for a course.

Activity 6

Why has the course writer to understand the notion of a credit and various components involved?

4.4 Familiarity with the concept of self-learning materials

Open distance education institutions design course materials on the bases of the principles of self-learning materials (SLMs). As a course writer, you have to see whether you are following the principles of presentation and structuring the course materials. It is therefore suggested that some specimen learning materials may be obtained from IGNOU as samples in case you don't have SLMs. Here in this handbook we shall give you an insight into the principles on which SLMs are prepared.

Here, we should also make it clear that you can use extracts or quotations from other books/articles. And when you find good materials (content, definitions, charts, diagrams, etc.), you should include them in your unit. But you should keep in mind that in such cases one has to seek written permission of the copyright holder. This may be done by the unit writer himself or the case may be referred to IGNOU for necessary action in good time. This is very important issue which should not be ignored because we have to maintain academic and professional ethics and standards.

Familiarity with theories of learning

In the system of distance education, learning takes place through the techniques of distance teaching. Though the learner is the best judge to decide which of the learning strategies will suit him/her, the course writer should adopt the most effective learning sequence in the unit. The theories of learning can guide the course writer to design the learning material that suits the individual learner. You, as a course writer, should ensure whether your unit provides suitable learning conditions – for example, practice reinforcement, feedback etc., to encourage learning to take place. The learning materials should be able to inculcate effective learning among learners. The following theories of learning give you an idea and help in writing the material for distance learners.

Cognitive theory of learning emphasizes the changing or reorganization of cognitive structures, which involves an acquisition of knowledge and transformation of new knowledge — which would lead to change in one's knowledge, skills, attitudes and values.

As most distance learners are adults, they use their experience to create and construct knowledge. This process is known as 'experiential learning'. Experiential learning has been influencing most distance teachers in recent

years. The assumption behind this theory is that each learner has some prior knowledge/experience which they put into the learning process to acquire further knowledge. Some of these features are applicable to constructivist theory as well.

Constructivism refers to a process in which the learner constructs a new idea/version of reality based on his/her own prior experiences, and in this process, the learner will be able to deal with any new experiences in that field/area.

Behaviourism is one of the most important theories of learning which emphasizes the connection between stimuli received and responses displayed by learners. Defining objectives in behavioural terms is major contribution of behaviourists to education in general, and distance education in particular.

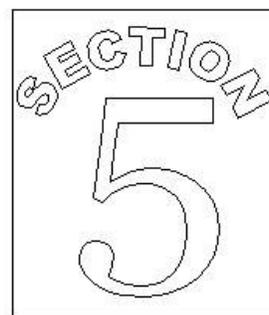
Familiarity with IGNOU policy on payment, copyright and related issues

Writing a unit for IGNOU or any other open/distance education institution is a paid job. You will be paid a fixed amount for writing a unit in case you are requested to write one. It is worth mentioning here that:

- You will be paid for writing a self-learning unit, not a lecture or an article. You are therefore expected to follow the characteristics (refer page – 9&10) and the principles of writing self-learning materials.
- The copyright of the unit written by you will rest with the university. Due credit, however, will be given to you for having contributed to course materials.
- Depending on the quality of the material, the content Editor is empowered to change the content, presentation and structure of the unit. If the Editor does not find the unit suitable, for whatever reasons, he/she has the authority of replacing it. However, you will be paid the remuneration for writing the unit.
- Every Block of each course produced by IGNOU would have a credit page on page- 2 of the block. This credit page consists of the names of the members of the Programme Expert Committee, Course Preparation Team/Course Contributors, Production Team and copyright details. As a policy, no block is printed at IGNOU without credit page. A credit page as an example is given for your reference in the following page.

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<p>Mr. Balakrishna Selvaraj Registrar, PPD, IGNOU</p> <p>February 1995 © Indira Gandhi National Open University, 1994; Revised Edition ISBN-81-7263-731-4 All rights reserved. No art of this work may be reproduced in any form, by mimograph or any other means, without permission in writing from the Indira Gandhi National Open University.</p> <p>Further information about Staff Training and Research Institute of Distance Education (STRIDE) and the Indira Gandhi National Open University courses may be obtained from the University office at Maindan Garhi, New Delhi – 110068, India.</p> <p><i>Source: Block 1 of ES-313, STRIDE, IGNOU, 1995</i></p>	

Example 1 Credit page

A graphic consisting of a rectangular border. Inside the border, the word "SECTION" is written in a curved, uppercase font at the top. Below it, the number "5" is written in a large, stylized, outlined font.

DEVELOPING A UNIT

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.

Course writing obviously, is of vital importance for all the academic programmes of distance education institutions. 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 materials. Think for a while – is it possible to build the teacher into the course material? Don't give your answer right now, go through the following sections and at the end of it, try to answer this question. The course has to be altogether self-contained.

The course writers should know about the different strategies through which the subject matter can be presented. There are certain points which are to be taken into consideration while developing and presenting a self-learning unit. The self-learning materials must combine most of the functions of a classroom teacher. In addition to covering the subject matter, they must provide study guidance, reinforcement and feedback to encourage and help the distance learner who is physically away from the teacher and the institution.

There are many ways of presenting the content, but the features that we discuss here are common to all the courses at IGNOU. Gradually many open distance education institutions and state open universities in India, and a few institutions in the developing countries like Mauritius, Zimbabwe, Tanzania, Caribbean islands, Sri Lanka, Bangladesh, Nigeria, Bhutan, Ethiopia etc are also following the format and presentation styles similar to IGNOU. Broadly, there are three parts of a unit – beginning of the unit, the main body of the unit, and the ending. We shall describe each part in some detail.

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.

5.1 Beginning the Unit

This is the first part 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. Accordingly, the beginning of a unit include the following components:

- i) **Structure of the Unit:** To make the study materials more accessible for self-learning, we should present a list of the teaching items at the beginning of the unit. Such a list helps the distance learner see what constitute the unit. While a textbook normally has only one ‘contents’ for the whole book, distance teaching materials have a list of such items for every unit. This list of learning items is called the ‘structure’. Thus the ‘structure’ of a unit is a detailed itemization of the content broken into sections and subsections. It displays structural relations within the content. It helps learners overview the material and locate relevant parts efficiently. The term ‘contents’ can be used in place of structure. But we prefer the term ‘structure’ as pedagogically it is more meaningful than ‘contents’.

Why should we give the ‘structure’ of a unit? The structure makes the study material more accessible to the learners. They can easily have access to the desired content of the unit. They need not look through the pages to find out the desired learning point. ‘Structure’ presents a clear outline of how the content has been conceptualized by the course writer – what does he/she think are the main themes, the sub-themes and sub-sub-themes and what their logical linkages. It presents a picture of how the writer visualizes the content. Thus, the structure with the help of clearly differentiated and logically arranged sections and subsections, makes the material more learner oriented and learner friendly. While finalizing the structure of a unit, course writers should pay attention to requirements of the subject matter as well as the learners.

The sections and sub-sections of a unit should be numbered and this numbering can be done in various ways. The objective should be ensure that the numbering is simple and clear, and it should make the content more accessible rather than to make it more cumbersome. For this purpose we have adopted the use of points. Under this system, the “sections” are simply numbered in the sequence using one point, e.g., 3.1, 3.2, 3.3, 3.4 ... and so on. In this example the left hand digit (i.e. 3) denotes the unit number, and the digit on the right hand side of the point denotes the section number, i.e,

The titles of the sections and sub-sections should be clear, definite and relevant to the content being discussed. Some more examples are as follows:

UNIT 13 FINANCIAL INSTITUTIONS
Structure
13.1 Introduction
13.2 Rationale of Development Banking
13.3 Evolution of Development Banking in India
13.4 Industrial Finance Corporation of India
13.5 Industrial Credit and Investment Corporation of India
13.6 Industrial Development Bank of India
13.7 Export-Import Bank of India
13.8 National Bank for Agriculture and Rural Development
13.9 Industrial Reconstruction Bank of India
13.10 Conclusion
13.11 Objectives
13.12 Self-assessment test
13.13 Further readings

Example 3: Unit Structure

UNIT 1 COURSE DESIGN
Contents
1.0 Objectives
1.1 Introduction
1.2 Developing a Curriculum
1.2.1 Teaching the hidden curriculum
1.2.2 The nature of the students
1.2.3 National Considerations
1.2.4 Content and methods
1.3 Assessing Educational Needs
1.3.1 The characteristics of adult learners
1.3.2 Assessment of specific needs
1.4 The process of Curriculum Planning
1.5 The Systems Approach to Course Planning
1.5.1 Educational needs
1.5.2 Defining objectives
1.5.3 Resources and constraints
1.5.4 Selection criteria
1.5.5 Alternative methods of meeting objectives
1.5.6 Alternative subject matter
1.5.7 Choice of method
1.5.8 Development, feedback and evaluation
1.6 Making a Course Outline
1.7 Problems in Course Planning
1.8 Let us Sum Up

Example 4: Unit Structure

You can observe from the above examples that there is no uniformity in the division of structures into sections and sub-sections. In example-3 there are 12 sections without any sub-sections and objectives of the unit are given almost at the end of the unit after conclusion. Whereas in example-4, there are sub-sections and objectives given at the beginning of the unit, which are helpful to the learner to know in the beginning itself - what they are going to achieve in the given unit through objectives. Pedagogically also it would be appropriate to have 4-6 sections under the 'main body' of the unit with 2-3 sub-sections in each section. This type of rationale distribution/division of the content in sections and sub-sections would be helpful in maintaining the content treatment and overall load across units and blocks. If a course writer ignores this rationality, the result would be one unit written by 'X' – would be having many sections (say 10 or more) without any sub-sections 'Y' would be few sections (say 2-3) with many sub-sections, in the same block/course which may confuse learner.

ii) Introduction to the Unit: The introduction part explains the content being discussed in the particular unit, and relates the unit and also with the existing knowledge of the learners. The introduction should be brief to provide adequate help to the learners in starting their study.

In the introduction you need to receive, welcome and motivate the learners by giving them the impression that what they are going to study in the unit is easy and manageable. The course writer therefore should make a gentle start using the material and/or information which is already known and familiar to the learners.

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 i.e what has gone before? 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 concepts to be discussed in a particular unit. Its function is to attract the learner's interest and focus his/her attention on the content given in the unit. Besides, it should build a basis for and promise friendly and purposeful communication with learners. It is done best by talking informally about the item in the structure, i.e. theme of the unit – what content we have planned to include in this unit, etc.
- c) **'Guidance' component:** We should provide study guidance to the learners as to what they are supposed to do before they start reading the unit, i.e, what knowledge they need to acquire to achieve the objectives of this unit. The study requirements such as time, special

activities, back/cross references, equipment, books, etc. should be incorporated in the introduction. The suggestion is that we should inform the learner about all that he/she needs, to get the best out of the unit.

A study guide may consist of notes or hints of the following type:

- before you start working on this unit, please go through once again sub-section 3.1.3 of unit 3, Course 2.
- you must conduct experiment no. 5 before you proceed to this unit.

To motivate the students for active involvement in learning we can give some activities or something practical to do right at the beginning of the unit if we need to.

Because the introductory part covers the entire unit and establishes links with previous units, it may actually be written after the unit is completed.

While writing the ‘introduction’ part, course writers have to avoid writing too lengthy or too brief an introduction.

The introduction should be usually a page or so. Reproduced below is an example from one of our units.

INTRODUCTION

No business enterprise can entirely depend on its own finances. It needs finances from other external sources which provide not only short-term loans but also medium and long-term credit facilities. The present unit provides a sketch of all India financial institutions, their role and functions and their achievements towards fulfilling the various national objectives.

The content in this unit is basically descriptive. You will have here reference to institutions like IFCI, ICICI, IDBI, IRBI, EXIM Bank and NABARD. While going through the preceding unit, you must have already collected some information material on some of these institutions. You will have ample use of those materials in this unit. However, you must remember that your job in this unit is not only to describe but also to analyse the role and responsibility of these financial institutions.

Example 5: Introduction

Activity 7

Do you think a proper introduction to a Unit is essential? Why?

iii) Defining objectives: The statement of objectives is always an important part of distance education materials. By objectives we mean – what should a learner be able to do (or do better), after going through the unit, that he/she was unable to do or could not do so well before (Rowntree, 1986). Here we need to note that ‘objectives’ are different from the ‘aims’. The aims are expressed by a teacher as to what he/she would try to do or get across through his/her teaching activities. On the other hand, the objectives are the behaviours to be displayed by a learner. In other words, the ‘aims’ are for a teacher and the ‘objectives’ are for the learners to achieve. Of course, the objectives are derived from the aims. We shall discuss objectives in detail as follows.

Defining objectives is to identify the terminal outcomes of instruction in terms of observable performance of learners. These outcomes are to be presented in ‘behavioural terms’. Some educationists call them ‘learning outcomes’.

The objectives of each unit need to be defined clearly. A clear statement of objectives means that any teaching activity can be empirically planned, evaluated and revised until the desired results are achieved. If we, the distance educators, fail to reach the objectives, or if we feel that the objectives are not attainable, then we have to rethink and modify objectives themselves, or change the instructional strategy until these are achieved.

Advantages of expressing objectives in behavioural terms: Broadly there can be four main reasons for listing carefully worded statements of objectives in behavioural terms.

The objectives

- a) provide guidance in planning the instruction and the unit. The course writers should determine in the beginning itself what a learner will be able to do after going through the course/unit or a part of it.
- b) help in deciding assessment techniques – construction of a test and evaluation schemes. Ambiguous objectives make it difficult, sometimes impossible to prepare effective test items.
- c) enable the learners to know what they must learn or achieve in a particular unit so that they may plan their study schedule accordingly.
- d) help the learners to assess/measure their own progress from time to time during the study of the unit.

Components of a complete statement of objectives (in behavioural terms)

- **Condition**, i.e. situation: A behaviour can be displayed under a certain condition. We need to state the condition under which the learner should display the desired behaviour. For example – **after viewing the video programme**, the learner will be able to ; **after attending the workshop**, the participants will be able to explain the concept of distance education; **after 5 months of practice**, you will be able to type 30 words per minute. Here after viewing the video programme, after attending the workshop, after 5 months of practice, are conditions necessary to reach the expected level of objectives. A statement of objectives, therefore, will always start with a condition/situation.
- **Behaviour**, i.e., action: An objective in behavioural terms indicates what behaviour a learner should display after going through the unit. For example – the learner will be able to distinguish between living and non-living things. Here the learner will display his/her behaviour by listing out the differences between living and non-living things.
- **Standard**, i.e. level: While stating objectives, we need to set ‘norms’ for the behaviours to be displayed. The learners should know ‘to what level they should be able to perform’. Take for example the statement – ‘after going through this unit, you will be able to explain four properties of magnets’. Here the word ‘four’ sets the standard for the learners’ performance. The learners are expected to achieve this level of the objectives. The standard of objectives depends on the level of the

learners you are writing for and also what we want them to achieve. For example – if you are writing for under graduate level, the objectives have to be knowledge, understanding and application oriented, if it is for Post graduate and still higher levels, objectives can go beyond application towards synthesis and evaluation.

This unfortunately gets overlooked quite often, so in addition to emphasizing the first two components, the last one should be equally emphasized. Incorporating the three elements in your objectives, would give learners explicit guidance on what they must achieve.

An example is given below:

OBJECTIVES

In this Unit, we introduce you to the principles of planning and designing a course for distance education. We will do this first by making comparisons between conventional and distance education, and then by discussing some of the techniques that distance educators have adopted to help with research and planning.

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

- explain how and why the curriculum for distance education may differ from that used in conventional education;
- describe methods of assessing educational needs and explain the importance of carrying out such an assessment;
- describe and discuss the process of curriculum planning for distance education;
- describe the systems approach to course planning and explain each stage;
- use this approach to develop a course outline; and describe and discuss problems commonly encountered in the process of course planning.

Source: Unit 1, Block 2 of ES-312, STRIDE, IGNOU, New Delhi, 1995

Example 6: Objectives

Terminology to be used: While defining objectives in behavioural terms, we should be careful in choosing appropriate verbs. The behavioural verbs are observable and measurable. Following are some examples of such words/verbs used in stating objectives in behavioural terms:

- **Descriptive verbs:** define, describe, explain, write, name, list, select, state, etc.
- **Discriminative verbs:** compare, differentiate, identify, distinguish, give examples, summarise, breakdown, illustrate, outline, separate, select etc.
- **Motor performance verbs:** drive, type, draw, measure, write (learning how to write etc.)

Expressions like “know”, “understand”, “learn”, “become aware of”, etc., may indicate what the **instructional objectives** are i.e, what the institution

or the course writer wants to happen after a particular unit has been studied. But whether it happened or not won't be clear to the learner nor to us as we cannot measure or see through one's **knowing, understanding, being aware of** unless it is displayed by a corresponding behaviour. It is, therefore, necessary that we make the statements of objectives in behavioural terms as exemplified by the three sets of words given above.

You can use the table given below for transforming objectives from instructional terms into behavioural terms.

Objectives in Instructional terms	Objectives in Behavioural Terms		
Knowledge	define state list name	write recall recognize label	underline select reproduce measure
Comprehension	identify justify select indicate	illustrate represent name formulate	explain judge contrast classify
Application	predict select assess explain	choose find show demonstrate	construct compute use perform
Analysis	analyse identify conclude differentiate	select separate compare contrast	justify resolve break down criticize
Synthesis	combine restate summarise precise	argue discuss organize derive	select relate generalize conclude
Evaluation	judge evaluate determine recognize	support defend attack criticize	identify avoid select choose

Source: Kulkarni, S.S., Introduction to Educational Technology, Oxford and IBH, New Delhi 1986

Table 2 Objectives in Behavioural Terms (associated action verbs)

Objectives should not be ambiguous and general. Our experience shows that course writers often face dilemma related to numbers of objectives to be set in a unit. Though there is no fixed formula, too many objectives (say 7 or more in a unit) confuse the learner and too less (say one or 2) wouldn't communicate adequately what writer expects from the learner. In a Unit of

IGNOU's length 5-6 objectives (say covering one for each section) would be adequate and communicate the learner what he/she is going to achieve from the unit.

Activity 8

Why objectives should be in behavioural terms particularly in case of distance learners?

With this we have completed the beginning part of a unit consisting of the title, the structure, introduction, and objectives.

5.2 Main body of the unit

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

Effort from you as a course writer should be that each section relates to a different objective of the unit. The section presents the subject matter, the theme or the topic and some questions, to check that the learners themselves have understood the material. The questions are normally self-assessment questions. The body of the unit, therefore, normally consists of a sequence of materials explaining a topic and self-assessment questions, exercises and/or activities.

Most units require several hours of study and so learners cannot work right through them in one study session/one sitting. A division into suitable sections, sub-sections therefore, provides learners with stopping places. Clear organization is an imperative obviously.

Within sections, headings, boxes or other sign mark changes from learning materials to self-assessment questions/activities/exercises. 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 following example explains where the main body of a unit begins:

UNIT 4 ORGANISING THE PRESENTATION

Structure

- 4.0 Objectives
- 4.1 Introduction
- 4.2 Presentation and Motivation
- 4.3 Legibility
 - 4.3.1 The type
 - 4.3.2 Arranging the type
 - 4.3.3 Paper size
 - 4.3.4 Paper colour and quality
- 4.4 Legible Graphics
 - 4.4.1 Illustrations
 - 4.4.2 Diagrams and charts
- 4.5 Attractiveness
- 4.6 Accessibility
 - 4.6.1 Structural devices
 - 4.6.2 Access symbols
 - 4.6.3 The importance of access structures
- 4.7 Let Us Sum Up.

4.0 INTRODUCTION

Learning from reading a text is not easy. The reader must put considerable effort into the task. But that is not all; the quality of the text itself is also important. Some texts are more effective teachers than others. There are three categories of factors which contribute to effectiveness; the presentation of the content, the level and clarity of language, and the format to the text. In other words, the meaning must be clear, the language simple and the text itself well presented. It is difficult to estimate how much importance to attribute to each of these factors, but it appears that the third factor, the subject of this Unit, is as important as the other two. In this Unit we shall consider why this is so.

4.1 OBJECTIVES

This Unit will help you to understand the importance of presentation and design in distance learning texts.

At the end of the Unit, you should be able to:

- discuss the relationship between presentation and motivation in distance education;
- describe factors which contribute to the legibility of texts;
- describe factors which contribute to the attractiveness of texts;
- describe features which make texts usable and accessible, and explain why they are important for developing study skills.

4.2 PRESENTATION AND MOTIVATION

To what extent does the appearance of a text matter? It may give us pleasure to possess an attractive book, but is it of any educational importance whether or not a book is good to look at? We can answer this question both in the affirmative and negative.

If a student is very highly motivated, he/she will learn even from poorly produced materials. There have been cases where distance students have accepted hand written duplicated notes. Many correspondence courses consist of badly-typed, densely packed pages with thin rough paper and a proportion of students will always study successfully even with such materials.

Example 7: Body of a Unit

Source: Unit 4, Block-2 of ES-312, STRIDE, IGNOU, New Delhi, 1995

There can be many ways of presenting the content. It varies from teacher to teacher, subject to subject, whether in distance teaching or in classroom teaching. The main thrust however, should be the way the learners can grasp the content easily. We shall discuss here the format being followed at IGNOU.

• **Concept-mapping**

The content of a unit as a whole should be conceptualized and worked out before we start writing. Working out the detailed structure is termed as ‘concept-mapping’. For this exercise, we need to know the philosophy behind the structure of the course properly and thereafter, the suitable sequence to suit the nature of subject matter and the process of learning is worked out. This can be done easily if a unit writer has thorough command over the subject-matter intended to be presented in the unit.

We shall explain this point with the help of the following examples from one each in sciences and social sciences.

Let us suppose that we have to prepare a unit on the theme “Universe and Earth”. No two teachers/writers may present this theme the same way. In other words, the theme may be presented on the bases of differing ‘concept maps’. Given below are three different “concept maps” covering the theme under consideration. These concept maps have been developed and used by faculty of former Division of Distance Education during workshops organized by them in late 80’s.

Concept map 1	Concept map 2	Concept map 3
<ol style="list-style-type: none"> 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 Hypotehsis 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 	<ol style="list-style-type: none"> 1. Universe & its origin <ol style="list-style-type: none"> 1.1. Galaxies and constellations 1.2. Light year 1.3. Milky way 2. Solar systems 3. Earth <ol style="list-style-type: none"> 3.1. Atmosphere 3.2. Hydrosphere 3.3. Lithosphere (Rocks) 3.4. Structure of Earth 	<ol style="list-style-type: none"> 1. Earth: surface as we know it <ol style="list-style-type: none"> 1.1 Land 1.2 Inside the earth Lithosphere – Crust–mantle-core 1.3 Outside the earth Hydrosphere – Atmosphere, Biosphere 2. The system Earth belongs to <ol style="list-style-type: none"> 2.1 Planets, comets 2.2 The Sun-solar system 3. The system, the Solar system belongs to <ol style="list-style-type: none"> 3.1 Milky way 3.2 Galaxy – types, etc. 4. The system galaxies belong to <ol style="list-style-type: none"> 4.1 Universe 4.2 Size of Universe (Light Year) 5. How was the Universe created <ol style="list-style-type: none"> 5.1 Theory 1 5.2 Theory 2

Example 8: Concept map

In ‘concept map 1’, the theme has been presented as 9 sub-themes, in ‘concept map 2’ it has been presented as 3 sub-themes, and in ‘concept map 3’ as 5 sub-themes. If we consider the three ‘concept maps’ on their pedagogic merits, ‘concept map 2’ appears to be better than ‘concept map 1’ in so far as the arrangement of sub-themes is more logical. However, it is the ‘concept map 3’ which is the best of all. In ‘concept map 3’ the writer has started with the **known** and moved in logical steps to reach and cover the **unknown**. It is at this stage that unit writers can bring in their creativity and resourcefulness to shape the materials.

You may see the following example on the theme ‘tutor-comments’ taken from course ES-313 of PGDDE programme of IGNOU and concept maps developed and used during the workshops by faculty of STRIDE.

Concept map 1	Concept map 2	Concept map 3
1.1 Types of tutor comments 1.1.1 Harmful comments 1.1.2 Hollow comments 1.1.3 Misleading comments 1.1.4 Positive comments 1.1.5 Negative comments 1.1.6 Null comments 1.1.7 Constructive comments 1.1.8 Global Comments 1.2 Role of Distance Tutor 1.3 Importance of Tutor comments	1.1 Tutor comments and Distance tutor 1.2 Various types of tutor comments 1.2.1 Harmful comments 1.2.2 Hollow comments 1.2.3 Misleading comments 1.2.4 Positive comments 1.2.5 Negative comments 1.2.6 Null comments 1.2.7 Constructive comments 1.2.8 Global comments	1.1 Discovering the Distance tutor 1.1.1 General functions of a class room teacher 1.1.2 Identifying a distance tutor 1.2 Significance of Tutor comments 1.2.1 Academic communication 1.2.2 Personal communication 1.2.3 Supplemental communication 1.3 Types of tutor-comments 1.3.1 Harmful comments 1.3.2 Hollow comments 1.3.3 Misleading comments 1.3.4 Null comments 1.3.5 Negative comments 1.3.6 Positive comments 1.3.7 Constructive comments 1.3.8 Global comments 1.3.9 Personal comments

Example 9: Concept map

In the concept map 1 the theme has been presented as 3 sub-themes, and in concept map 2 the theme has been presented as 2 sub-themes, and in concept map 3 as 3 sub-themes with each sub-theme having further divisions. Out of three concept maps concept map 2 appears to be better than 1, so far arrangement of sub-themes are more logical. However

concept map 3 is the best of all. Because the writer has started with description of the theme and gradually moved to significance of the theme and finally discussed the complex part of the theme i.e. types of tutor comments.

To write a unit, the unit writer must prepare a few concept maps pertaining to the theme concerned, and then decide on the best of them. You may be thinking that how as a writer one can prepare few concept maps on the same theme. In case you have experience of classroom teaching just recollect – same theme/topic taught by you over a period of time. Each time you taught that theme/topic-experience of presentation style, examples etc. cannot be the same. If you extend the argument to the concept map under discussion it is possible to develop more than one concept map on the theme and select best one for writing the material. Experienced teachers should not take long to do so. Each theme consists of a few sub-themes, and each sub-theme will have the status of a **section** in the unit – a section within a unit will always be indicated by two digits with a point in between e.g. 3.2, 3.3, etc.

Activity 9

Prepare 3 concept maps on the theme you want to write for distance learner and discuss them with your colleagues.

Having thus, decided on the outline of the Unit, the course writer needs to be aware of the following seven considerations:

- i) Small steps
- ii) Logical arrangement
- iii) Ordering the content
- iv) Personalized style
- v) Language
- vi) Illustrations
- vii) Assessment

We shall touch upon these considerations briefly in that very order.

- i) Small Steps:** The content should be divided into small manageable learning activities/steps, and each learning activity should be put under a section or sub-section. The learner will move on point-by-point. Moreover, if we want to move from teacher-centred education to learner-centred 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. Some teachers may feel that dividing the content into small steps is not possible in their subjects and few others may think that flow

of content is lost in the process. Our answer to these teachers is that we have to think from the learners' point of view and present the content in the best possible way so that students can learn better; even it is difficult at times from the subject point of view. Learner should be our focus and center of the issue.

- 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 (make easily accessible) 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. It should be taken for granted that if the course writer himself/herself is not clear about what he/she wants to present, his/her presentation will not promote self-learning on the part of the learner.

In order to maintain this logical arrangement the writers should conform to structure strictly, what they have prepared after loud thinking with clarity.

- iii) Ordering the content:** On the bases of researches in educational psychology we follow some principles in ordering the content for optimum learning. The main principles are:

- **From known to unknown:** Each unit should be linked with the entry behaviour or the pre-knowledge of learners. The new knowledge will be meaningful if it is related with their previous experience or to familiar, and surroundings.
- **From simple to complex:** To create interest and cultivate motivation in learners the unit should be started with relatively easy ideas/concepts and the complex concepts should be introduced gradually. The simplicity and complexity of concepts should be judged from learners' point of view. The course writer has to establish a level that would be easily comprehensible to the learners. The writer should remember that he/she is not writing an article in a reputed journal or a book but a material that is meant for learners who supposedly have relatively less knowledge (of the subject) and may have lesser experiences as well.
- **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, demonstratations, etc.
- **From particular to general:** A particular concept should be generalized after a few particular cases have been discussed. This method is followed/ suitable in social sciences, to explain about specific

traits/ characteristics of group/society and leading them to make generalizations. The particular examples and illustrations precede to generalization where particular is concrete and general is abstract (in certain case we may reverse the process....)

- **From actual to representative:** The learners learn quickly from the actual objects/events. If possible, the learners should be advised to do some activities or experiments related to the unit. They should be confronted with actual problems and they should try to solve them. If exposure to real events/objects is not possible, the help of representative forms such as charts, graphs, diagrams, etc., can be taken to make the content more easy for self-learning. This is particularly important in the teaching of science and related disciplines.
- **Personalized style:** The learner in open distance education systems is the active partner in the teaching-learning process. He/she reads attentively, tries to comprehend and assimilate the content of the unit. Therefore, we need to be sympathetic and generous in explaining the content. 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. Similarly we may use the word ‘we’ when we refer to ourselves – individual or individuals. Writing materials is to build a conversation between a teacher and the learner. In other words, 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 the 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.

Moreover we should be careful while writing for distance learners who are not well known to us. Our expression should be friendly and in conversational style, with respect both for them and for the subject being discussed. While using personalized and conversational style, some writers may do to such an extent, which appears as a form of a letter writing between the learner and teacher rather than a self-learning material. Hence caution and balance is needed while using personalized and conversational style.

Activity 10

By using personalized and conversational style, what would you like to convey to the distance learners?

- **Language:** Distance education depends largely on the pre-produced printed materials which are supported by other mass media. In pre-produced materials, the quality of language is a deciding factor for its effectiveness.

Course writers do know that simple and clear language makes communication effective. Even then, a few writers cannot resist the temptation to use difficult words and write in a complicated style which learners find difficult to appreciate and thus fail to understand what the writer is trying to say.

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 most directly. In learning at a distance, to make communication simple, effective and direct is imperative.

But how to produce such a material that can communicate to the learners directly? How to write in a simple language? What do we mean by ‘simple language’? How simple should it be? These are some questions which inevitably arise when we talk of simple language and readability. To answer all such questions, we have to consider a few preliminary questions first; who is the learner? What is the subject dealt with? Who is writing the material?

When you write self-learning materials, you should be more cautious in judging the difficulty level of the language. The terms ‘simple’ and ‘difficult’ are relative. We may be wrong in judging the difficulty level of the language. In observation, for example, a child while learning English as a foreign language, learnt the word ‘E’ for ‘Elephant’ earlier than ‘K’ for ‘Key’. In our assumption the word ‘Elephant’ is difficult and ‘Key’ is simple. It is therefore the creativity of a course writer to decide, based on his/her 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. As most of our course writers have class room teaching experience, deciding the appropriate level of language that would suit the learners, should not be difficult. But writing is different from speaking in a class room.

While writing SLMs, you should keep in mind quite a few points pertaining to language – sentence structure, vocabulary, and style. Thus you should write in a simple, plain and clear language. By simple, plain and clear language, we mean straight forward, and unambiguous language. The language used should give the learners the message without making them rake their brain over the meaning of words and phrases. If your unit makes learners consult the dictionary quite often, you are using too many unfamiliar words – difficult words.

Sentences: Construct your sentences in such a way as to communicate directly. As far possible, make your sentences short and simple. If your sentence is too lengthy – break it into two or more small and simple sentences. Look at this sentence:

“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, the frolicking, slothful, irresponsible, cowardly old monarch was employing all the faculties of his lazy brain in inventing ways of keeping himself blissful in the company of young dancing girls of ravishing beauty and the brimming cups of wine kept in vintage for decades and centuries, and the deceitful, selfish, lecherous, treacherous, cruel and gambling friends”

The sentence may appear to be mesmerizing. But you may not get the message clearly and directly. If I say that you may be reading such a long sentence for the first time – may not an exaggeration. You would like to do a stylistic analysis of it to see weaknesses of the sentence.

Now let us try to re-write it in smaller sentences with fewer adjectives. We may also change the words at places.

“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. The old king was keeping the company with wine, women and gamblers!”

You may judge for yourself this passage gives the message more directly than the earlier sentence.

Vocabulary: Some teachers have a wrong notion that if you use difficult (high sounding) words you are more scholarly. They further feel that the less the people around you understand his/her language, more as their

scholarship. But here while writing SLMs test is not for ones scholarship, rather how best learners understand and absorb the content presented through simple and direct language. The fogginess of words can hide the meaning and make communication ineffective. The active vocabulary and simple grammar make your unit readable and the presentation lucid.

Paragraphs: 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. Paragraphing helps you think more logically and present your ideas clearly.

Conversational and friendly language: In distance learning, conversational and friendly language has an educational purpose. When you are writing a unit, you are actually communicating with your learners. You speak to them through your writing . And try to write as you speak.

Use of personal pronouns: As we have said above, 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’. The writing therefore should be personal, warm and brief. We write: “the writer desires that the learner recalls what transpired between them”. Do you find any personal touch in such a style? We can say the same thing like this: “Could you recall our discussion...” Conversational and friendly style does narrow the distance between you and your distance learners. But friendliness does not mean absence of seriousness. 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.

Humour: Your writing can be humorous at times, if it really illuminates the content of the unit. But you should not deviate from the main objective i.e., teaching. There are teachers (who taught us) 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 self-learning material.

Activity 11

Do you think language has a role in presentation of the content? Why do you think so?

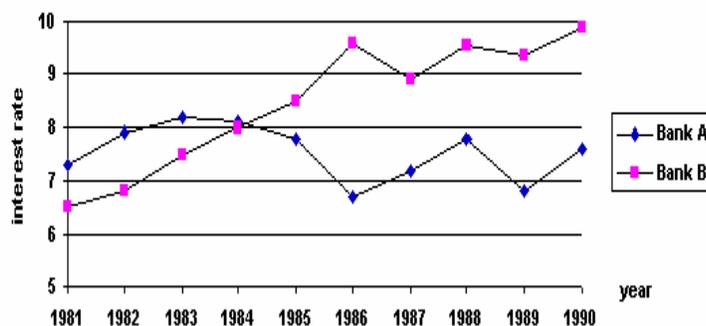
Illustrations: Illustrations create interest, stimulate, imagination, increase comprehension, and help retain information/knowledge on long term bases. Illustrations are used to elucidate certain facts, concepts and abstractions.

Illustrations are the means to reach the end, not the end in themselves. They should not dominate the content of the unit. As such, excessive use of illustrations should be avoided as these may distract the learners' attention. We should therefore make a judicious selection of illustrations depending on the need and the cost involved. They should be simple and self-explanatory, and should be directly linked with the content of the unit. The illustrations should be familiar and recognizable. The learners should be able to identify what is in a picture. In other words illustrations should have educational value. To be effective they should be presented in varied formats, not in a dull and monotonous fashion.

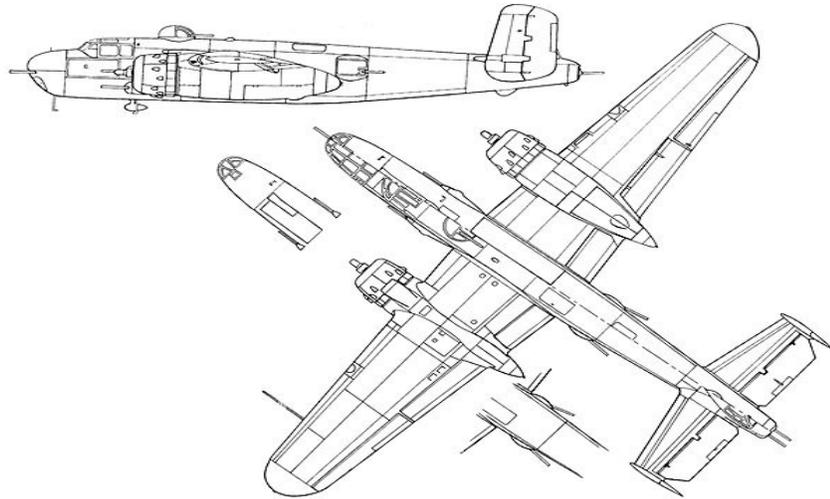
There can be various types of illustrations – photographs, line drawings, diagrams, graphs, flow charts, maps, cartoons, etc. Photographs are not generally preferred in self-learning materials because the reproduction of photographs is very expensive. Line drawings, diagrams, graphs, etc., are used wherever required, as they are not only cheaper, but also easily available.

The illustrations can be useful in bringing pictorial support to your writing you can draw some of the simple illustrations yourselves. For example:

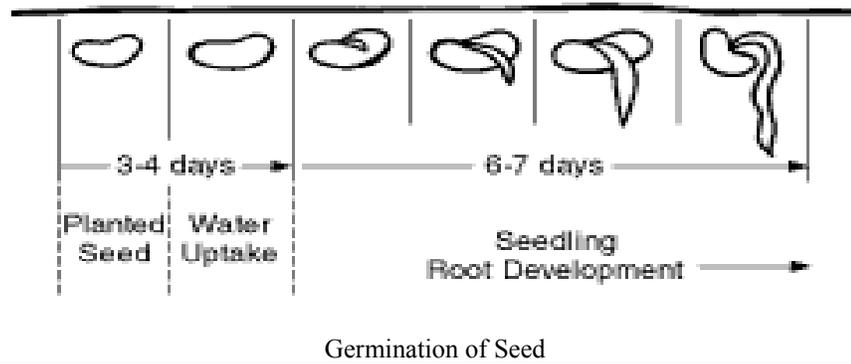
a) Graphs



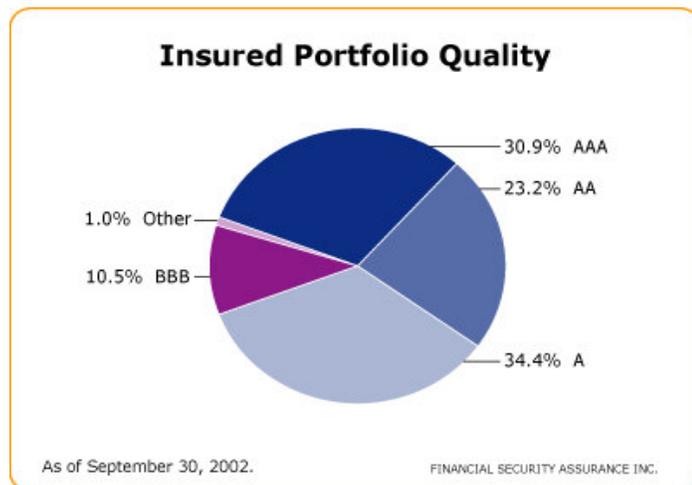
b) Line Diagrams



c) Illustration for describing a particular process



d) Pie Chart



Example 10: Types of Illustrations

Thus you can draw yourselves simple illustrations in your unit. We ourselves can draw simple illustrations without depending on artist/market professionals all the time. For this we should have basic idea/concept of ‘dash (—), dot (.), ‘Zero (0)’ long, short, tall, short, big, small etc. and its usage. To get these basics right, initially we may take the help of a professional artist. Once you are clear and thorough using them in your writings, would be easy, whenever situation demands. You can also adapt materials from other sources. But for such illustrations the copyright permission is sought. In such cases you should write to IGNOU, well in advance, to get copyright permission of the concerned agency. For this you have to give the title of the book/photograph, the name of publisher/photographer, etc. Such illustrations should be given proper credit.

You can get some illustrations prepared in the market. IGNOU will make payments at reasonable rates as are being practiced in sister institutions such as NCERT, NIEPA, UGC etc.

A work manual (for experiments in science and other related subjects) needs to use presentation factors in such a way that there will be only a minimal risk of users losing their place in the procedural sequence and inadvertently missing a step. Example –9 given below illustrates how an atmospheric pressure crushes the can; shown in a diagrammatic way with clear captions (this example has been taken from <http://www.acsamman.edu.jo/~ms/science/8/images2/can-crushing.gif>).

The Can Crushing

1
Can
Get a tin can

2
Can
Fill the can halfway with tap water

3
Can
Put the tin can on top of a burner. Wait until the water boils. The vaporizing water will push some of the air out.

4
Can
Put the lid on the hot tin can with the boiling water in it. The particles with the most energy in them will be trapped in the can.

5
The lid

6
Can
Pour cold water on top of the closed can. By doing so, you are cooling down the particles, therefore, you are slowing down the particles by taking energy away. This will lead to the atmospheric pressure being greater than the can's internal pressure.

Wait a while.....

7
The atmospheric pressure will crush the can.

- **Assessment:** To write assessment items to see whether or not the objectives defined in the beginning of the unit are being achieved, is one of the important functions of a course writer. You should realize the importance of assessment in distance education. In self-learning materials we use at least two types of assessment:
- First kind of assessment which helps the learner learn better and also provides them feedback about their grasp over the content of the units. Self-check questions, check your progress questions, exercises, activities and assignment questions come under this category.
- The second type of assessment is the one which exclusively measure the learners' performance. The term-end examinations come under this category.

In this handbook, we shall discuss the first category of assessment which has direct bearing on the functions of a course writer. As these questions are placed within the printed material of the units, we may call them **in-text questions**. At least three types of questions may be set under this category.

- a) **Self-check questions:** Inclusion of self-check questions (some prefer calling them check your progress questions, self-assessment questions) is one of the important characteristics of self-learning materials, self-check questions, as the term itself implies, are those questions which a learner attempts himself/herself and does not send them to the University for assessment. The functions of these questions are to help the learner to revise information/knowledge to support learning, and to assess, for himself/herself as to how much content he/she has grasped, i.e., to provide him/her feedback. Thus through these questions, we actually help the learners, and take them gradually – step by step, to the level of objectives stated in the beginning of the unit. Depending on the functions we assign to these questions, these may be a comprehension question, a recall question, an inference question or a question which makes the learner to go through the specific portions of the unit once again.

Self-assessment questions should occur frequently in any distance teaching material. They are normally presented as a feature separate from the main material: one reason for this is that the answers to the questions are also given in the unit, and both questions and answers therefore need to be numbered to ensure identification. This leads to a necessity to separate them from the continuous material. It is, however, important to see that material and questions are clearly interwoven – constantly taking the learner forward rather than functioning as a speed breaker or check-post. Certainly, we can describe the unit as a series of steps, but they are small, easily taken steps: perhaps we might think of a moving staircase rather than a ladder.

The questions make the material more interesting and break the monotonous nature of the print material. These built-in questions motivate learners to actively participate in learning. In this way these questions put forth 'checks' or barriers' to let the learners know whether or not they have comprehended the content read. Self-check questions are generally very short and objective type questions. The objective type questions can include recall type, recognition type, comprehension and application type questions.

A good teacher will encourage the learners to learn by checking that points are understood, by stimulating them to remember and recall material and by encouraging them to use what they have just learnt. A teacher in a classroom situation, usually does these things by asking questions, setting exercises or devising problems for the students.

Don't you think a good teacher whether in classroom or at distance has to do all these activities? A distance teacher has to pay more attention to frame relevant questions/activities/exercises and place them at appropriate places, as students are not physically present in front of him/her. It looks simple, but framing relevant questions for a particular purpose (stimulating, encouraging, checkup the progress etc) and inserting/placing them in the right context is not an easy task. This task requires creativity and continuous concern for the learner, on the part of distance teachers.

Self-check questions should be related to objectives. Remember one function of writing objectives in behavioural terms is that they provide a relatively objective way of evaluating the achievements of learners by looking into and measuring their own performance.

Type of self-assessment questions (SAQs): One question frequently faced by the course writer of distance education is what type of self-assessment questions and how frequently questions have to be framed in the material? There is no fixed formula for this. As a course writer you are free to select any type of questions: objective type/multiple choice/matching/very short answer etc., depending upon the suitability of the questions to the context. When you are framing a question care has to be taken that learner has to spend on that minimum amount of time (say 1 to 3 minutes). If learner needs to spend more time on a SAQ, it acts as a deviation/distraction from the study and he/she may lose rhythm of the study. Regarding the frequency of questions — you as a writer are the best judge. You may give one or two questions for each section of the unit, considering the objectives set for that section. If a section is longer one, where more than 2 objectives to be achieved, you may ask more than two questions - i.e. SAQs.

The next issue is whether questions are to be framed/prepared along with writing of the unit or insert questions after completing the draft unit. This depends on your style, whatever suits you, you may follow that. Many writers are comfortable to frame questions while writing the unit. This seems logical because you will be in a better position to identify the right question to the given context.

Activity 12

i) What is the need of self-check questions/activity in the self-learning units?

ii) Why has a course writer to avoid long answer questions as self-check questions in the material?

The self-check questions can be presented in various ways. We should take care that the questions are easily accessible to the learners. As the answers to these questions are also to be given in the unit, both the questions and the answers need to be numbered to ensure proper identification. Adequate guidance regarding the scope of a question, space for writing the answer, etc., should be given to the students.

Model answers or possible answers: All the self-check questions should be provided with model answers/possible answers. These answers not only provide feedback, they can also be part of the teaching. The model answers serve the purpose of feedback to the learners and consequently enhance their learning and maintain their motivation. The course writers should

acquire the habit of constructing answers immediately after they have written the questions.

The answers are placed at the end of the unit. Most of the learners prefer the answers to be more hidden. They complain that they are tempted to have a furtive glance at the answers, if they are easily visible.

We should take note that the model answers may not necessarily be the best answer to the question asked. A learner may differ from what has been given in the model answer, but he/she should be able to see that he/she is on the right path. While writing model answers, the course writers should keep in mind that the answers should be based on what we have taught them or discussed in the unit, and not on materials that fall outside the scope of the materials presented to them.

b) Activities: Like self-check questions, activities also serve important pedagogic purposes. The activities provide the opportunity to the learners for the practical application of knowledge gained through the print material. Thus the term activity would mean something that has practically to be done. The activities are in a sense a pedagogical diversion of the learners' attention. The activities are longer and open ended with a purpose to encourage the learners to relate the material with practical experience. As such in certain cases activities may not need any model answers. Activities are more helpful in science subjects or in any subject where you think that a learner has to apply the knowledge she/he has gained. An activity is NOT a project. The learner may spend maximum time of say 8-12 minutes, and has to come back to the study. The activities should not involve large amount of time, energy and money. The example-11 taken from a biology unit would give you an idea as to what type of activities can be included in the Unit.

Activity

Prepare a list of 10 plants that are found in your surroundings. Refer back to the section in the material you read while classifying those plants.

Example 11: Activity

Apart from reinforcing learning, the activities make the content more interesting for the learners. They can actively display their creativity through solving the problems. The learners will learn to manage their own learning.

c) Exercises: Exercises perform slightly different functions from that of activities. Exercises facilitate learning through practice (drill) and reinforcement. You will remember that the practice is one of the basic conditions of learning.

After discussing a concept/learning item, you can ask learners to work on an exercise for immediate practice. Through exercises, the learners will be able to check or revise their performance and retain information.

The model answers to the exercises may be given at the end of the unit. If it is not possible to provide model answers, the course writer may present the probable solution or just a few hints pointing to the possible answer.

Under exercises, the distance learners may be asked to:

- draw conclusions from the discussion or information presented.
- express in the form of a diagram what has been detailed in the unit, etc.

The exercises prove very useful for mathematics and related subjects. Examples are given below:

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

E E5) Identify the polynomials from amongst the following and label them as monomial, binomial or trinomial.

i) $x+3a^2$

ii) $3ab^2c^3d^4e^5+10^{30}$; where a, b, c, d, e are all variables.

iii) $(1/2)p+(1/3)q+(1/4)r$; where p,q,r are variables.

iv) $\frac{x+9^{64}}{y-9^{64}}$

v) x/y

vi) 1

Example 12: Exercises

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 E 6) Find the co-efficients 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?

Example 13: Exercises

d) Assignments: One of the important means of assessment in distance education is the assignment. The assignment consists of one or more questions which the learner completes and sends to the tutor (academic-counsellor) for comments and grading unlike self-check questions/activities/exercises. 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. Thus the sense of isolation of both the learner and the tutor (academic-counsellor) is reduced. The assignments provide feedback to both the teachers (institution) and the learners. This is called continuous assessment.

The assignments are longer and their responses are submitted to the tutor (academic-counsellor) for evaluation and grading. A tutor has to write his/her purposeful comments on the assignment and also award a grade to the response (for more details on comments and grades you may refer STRIDE Handbook 3 titled 'Academic Counselling' and Handbook 4 titled 'Assessment and Evaluation in Distance Education').

The scope of each question within an assignment should be defined clearly, i.e., guidelines regarding the length of the answer, issue/points to be covered, criticality, whether to give illustration, etc., should be stated explicitly.

Types of assignments: There can be at least three types of assignments:

i) Essay type: These are long-answer questions. Such questions should not be selected at random, but should be carefully chosen to cover some of the objectives, and also with a view to apply the knowledge gained while improving the learner performance.

Long essays based on only factual information should be avoided. You should ask detailed questions which can give learners an opportunity to display their critical thinking and analytic abilities. These questions should encourage synthesis and analysis of study material. A single essay could

test both the understanding and the application of content, and also provide the tutor with an opportunity to assess the strengths and weaknesses of each learner.

One may think of three types of essay type questions:

Open questions: The learners may be asked to present their ideas openly. In Science, such a type of question may not hold.

Project type questions: The learners may be asked to work on a brief project i.e., collect data, analyse it, present inferences, etc.

Practical questions: These questions are based on the practical application of the knowledge gained after going through the materials. An internal choice/option can be given in such questions.

ii) Short answer questions

The scope of these questions is less than the essay type questions. These questions can provide a large coverage of the content of the materials presented.

iii) Objective type questions

Different types of objective type questions such as true/false, filling in the blanks, multiple choice, yes/no, one word answers, very very short questions, etc., can be included in an assignment. Such questions can be marked by a computer. And these questions are not influenced by an bias. They are useful for checking factual knowledge, understanding and application.

Forms of assignment: We use two forms of assignments in distance education – Teacher-marked assignments (TMAs) and Computer-marked assignments (CMAs).

Teacher-marked assignments consist of the essay type, medium-length answer and short answer questions. They may even comprise objective type questions. The questions are designed to allow the distance teacher to check how well the learner has learnt and understood the content material. As the intention is to evaluate the learner, answers to such questions are not given in the material.

The distance teacher who evaluates the assignments may be provided with a marking guide for each question of the assignment. A guide helps ensure that assignments are marked to the same standard by all evaluators.

Teacher assessment also occurs at study centers. Though the teacher has little time for individual contact with learners, he/she can try to ensure that each individual is coping with the course satisfactorily. The teacher can assess practical work, and can also check whether face-to-face performance is equal to performance on paper, and decide whether any additional help is needed.

Computer-marked assignments supplement or complement the teacher-marked assignments. In distance education, its functions are to test knowledge and understanding. CMAs consist of objective type questions. They are checked by the computer. These assignments are very useful for science and mathematical courses at UG level and below.

At the undergraduate level, normally for a four credit course, we have three assignments two TMAs and one CMA at IGNOU.

We should make it clear that an assignment covers a block or more. A course writer working on a unit can suggest a question or two to the Editor who will give the final shape to assignments for a course.

5.3 Ending of the Unit

The last part of the unit is a repetition of what has been discussed in the unit. It helps the learners check whether they have completed all the necessary learning activities, understood the content and learnt all the points. The ending of a unit has the following components:

- i) **Summary:** After discussing the content in detail, the important points should be summarized. The summary will supply feedback to the learners. Thus the learner is aided to recall the important points in the unit. You may recall your student days when your teachers used to sum up their presentation at the end of the lecture/class. There may be two main purposes of the summing up of the unit — recapitulation and reinforcement.
 - a) **Recapitulation:** The summary of the unit will help the learners recapitulate the important learning points discussed in the unit. The statement of the important points will also help retain whatever they have read 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.

A unit may be summarized in several forms. Sometimes it is presented as a checklist. The summary may be a list of the key points that have been covered. For example:

LET US SUM UP

In this unit, we have described the structure of a course unit and explained what characteristics of self-learning materials we expect to find in them. Here are the main points:

- i) The terms 'aims', 'objectives', 'units', 'assessment questions', 'assignments' and 'essential texts' are all used as technical terms in distance education, although agreement on usage is not yet universal.
- ii) Units normally begin with a statement of objectives and an introduction.
- iii) The main body of the material contains step-by-step presentation of topics and frequent reinforcement and feedback.
- iv) Units end with a summary and assignment or a form of test.

Distance education materials are characterized by requiring some form of contact with a teacher or tutor in that they are a components in a teaching-learning system. Some self-learning materials can be used entirely independently.

Source: Unit 2, Block 2 of ES-312, STRIDE, IGNOU, New Delhi, 1995

Example 14: Summary of a Unit

Similarly, the contents of a unit may be summarized in various other ways.

- ii) **Glossary:** The glossary will help the learners comprehend the concepts discussed in the material. It refreshes and clarifies the learners' comprehension. (It should also be noted that the inclusion of a glossary is not a must. It depends on the nature and demand of the content discussed.)

It is very important to decide as to what is to be glossed. Should it be a difficult word, a concept already discussed in the unit or key words? Which words are key words? When you write a glossary, you should be more cautious in judging the importance of words to be glossed.

When we write in the language of a discipline, the learners have to make efforts to learn that language (the jargons used in that particular discipline). At times, while explaining the content, we do not explain the words/terms, such words/terms should be glossed.

The key words, difficult words, and the neutral/multi meaning words should be glossed at the end of the unit.

Those words/terms should be glossed which you feel need elaboration for better comprehension. The glossary may contain working definitions of all new concepts introduced in a unit.

Here is an example taken from an IGNOU course:

GLOSSARY	
Actuality:	Shots of real events, as opposed to the artificially contrived ones such as drama.
Alphanumeric:	A typewriter with number buttons listed separately.
Amplifier:	A device for increasing the strength of an electronic signal.
Animation:	Creating the illusion of movement, for example, frame-by-frame shooting of progressive changing graphics, skills, models or puppets.
Bridge:	An electronics switch or connection point that allows many information circuits to be connected so that each circuit or line has equal to the information in the system.
Decoder:	A gadget to transfer the audio and/or video signals into the message.
Disc Storage:	Amount of information (data of any kind) stored in a magnetic disc.
Editing:	Changing ordering shots, electronically, in order to create the desired programme effects.
Electric Circuitry:	A set of electrical parts intended for some special purpose.
Electronic Mail:	Where the student is able to address questions to the tutor and receive immediate feedback
Enrichment Programmes:	The programmes which are less directly related to the curriculum, but intended to contribute new insights, experiences, variety and enjoyment.
Floppy Disc:	Thin magnetic disc to store information.
Format:	The relationship between programme components: a combination of production style, presentation techniques and technical methods, for example drama, documentary, etc.
Frame:	Total single picture which runs 1/30 second in television.

Example 15: Glossary

You should also note that if the word in the material is a noun, it should be defined as a “noun” and in the same way if it is an adjective, it should be glossed as an adjective. And lastly, it is the contextual meaning that should be presented in a glossary.

iii) Suggested/Useful books: Many courses require learners to read some extra material in addition to the course units. Sometimes an extra material is essential while on other occasions, it may be entirely optional. While suggesting additional books -following criteria should be taken into consideration:

- Is the book easily available?
- Is the book relatively cheap?
- Is the book readable?

The suggestion is that the listed books should be useful for the learners 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.

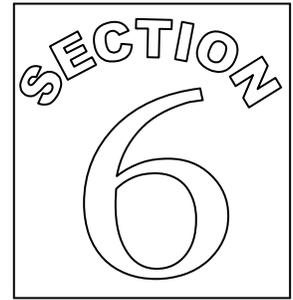
Three/four such books may be recommended for further reading in the following format:

Name of the author	Year of publication	Title of the Book	Publisher	Place of publication	Chapter & page
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For example:

Rowntree, Derek (1986) *Teaching Through Self-Instruction*, Kogan page, London

- v) **Model Answers/Possible Answers:** Under answers you may present the answers to all the self-check questions, exercises, etc., set in the Unit. For easy reference the answers need to be numbered the way the corresponding questions have been numbered. In certain cases both the questions and the answers may be presented in a different colour. This aspect can be decided by the programme team depending on their convenience. Whatever the decision, the format should be consistent and uniform through all the courses of a single programme.



REVISION OF SELF-LEARNING MATERIALS

In the earlier sections we have discussed various aspects of development of self-learning materials. In this section we discuss another important issue i.e. revision of self-learning materials – need for it and the various strategies used for carrying out revision. For a course writer/distance educator, this is a very important component to be aware of, so that one can carry out the revision from time to time.

Some of the programmes such as Post-Graduate Diploma in Distance Education (PGDDE) and Master of Arts in Distance Education (MADE) have been revised thrice, respectively in 1988, 1995 and 2000-2001. 1988 revision was a minor one, and the remaining two were substantial. During the last few years, some of the course/programme coordinators and course teams at IGNOU have initiated the process of **revision**. This activity has largely been undertaken by individual faculty, with substantial rewarding experiences, though in isolation from each other. The framework and strategies presented in this section are based on the deliberations and discussion in the workshop held in August, 2002 at IGNOU, hence has sound backing of experience and deliberations (Murthy and Panda, 2002). Clarifications on the terminologies relating to the process are needed, so that we avoid the possible confusion among distance teachers/educators when they talk about ‘revision’ and ‘updating’.

6.1 Need for Revision

Life span of Distance Education programmes is a very important issue in the Management of Distance Education Institutions and their academic programmes. This issue gains further significance in an institution like the Indira Gandhi National Open University which is heavily dependent on print based self-learning material in addition to other components such as audio/video programmes, tele-conferencing etc. Academics involved in the design and development of programmes in open distance education system aware that a particular programme can be offered for a certain period and revision of course materials is necessary after that period. For valid reasons the programme can also be totally withdrawn. Revision of self-learning materials is crucial for the following reasons:

- As distance educators, we should not provide the same material that had been developed a few years back to our students, because many minor or major changes must have taken place in that particular subject area;

- Unlike a class room teacher, the distance educators will not be meeting their students to explain to them the minor or major changes that are taking place in the subject. So, updating the presentation of content incorporating the latest developments every day is not possible in distance learning situation;
- The only alternative in such a scenario is the revision of materials periodically, if not frequently.

As distance educators we have to address the following questions before we undertake revision of academic programmes:

- Why revision is needed? (Need)
- To what extent revision is required? (Frequency/type)
- How a particular revision activity has to be carried out? (Strategies/methodology to be used).

Why revision is required has already been explained in the previous paragraphs and there may be many more reasons depending on the subject and the specialized areas an academic involved. The second question “revision to what extent”? is an important issue, which has to be addressed after a thorough understanding of the subject and in consultation with a few experts or a group of experts in the discipline. We should also use the feedback from students, counsellors and the peer group.

The third important question “How the revision activity has to be carried out”? can be addressed in many ways but it particularly depends on whether a minor or major revision/extensive revision is intended. It would require besides expertise in the subject concerned, adequate time and resources. Once we are clear about these aspects of revision, the strategies/methodology for the revision activity can be worked out further.

We have listed above a few major concerns and issues which need thorough discussion before any revision activity begins at IGNOU or at any other Open Distance Education Institution. Many more strategies have to be worked out in the process of revision, which are elaborated in the following sub-section. One single strategy alone may not be adequate or relevant to a variety of programmes which are on offer by the institution (i.e. IGNOU) or any other institution.

As mentioned earlier, the major reason for revision is the **academic one** i.e. periodical revision which is required to incorporate the latest developments in the discipline concerned and update the materials so that students are not left out as far as the information supply is concerned.

The other important issue is the ‘**economic aspect**’ of the revision process. Whether it is a major or minor revision, the process will be more or less the same as that of developing a new programme. Identifying an expert group, involvement of course writers for revision, production and printing of the material etc. are the same in both situations.

The other important issue is ‘**time**’ that is needed for this activity. We have to plan in a systematic and meticulous way the schedule. Otherwise, meeting the deadlines and switching over to revised material will become difficult and problematic.

In the following section we discuss in detail issues raised above alongwith concrete strategies how revision activity has to be carried out.

Activity 13

Do you think revision is needed in your subject/course offered through distance mode? Why do you think so?

6.2 Course maintenance and revision experiences

As explained above revision is a complex exercise, hence requires a broader framework and relevant strategies. Let us analyse how issues related to this activity evolved at IGNOU.

IGNOU started offering two programmes – Diploma in Management and Diploma in Distance Education – in 1987 with 4831 students. In 2004, there are 88 programmes comprising 820 courses catering to the educational and training needs of about one million distance learners (VC’s report, 2004). During the period, the course development models have evolved and got established in the form of ‘coordinator-writers-editor model’, ‘inhouse

faculty model', 'adaptation model', 'workshop model', 'project mode', 'self-study book-based approach', etc. The course development procedures have substantially been formalized; and, at four stages, the programme/course coordinator fills up four forms (phase I to IV) to comply with formal requirements. In parallel with course development, IGNOU faculty are also involved in course *maintenance* (after the first delivery of the course/programme), and *updating* of course modules subsequently. Generally, feedback received from learners and counsellors, the evaluation of assignments and projects and term-end examination answer scripts, feedback from content experts (generally the conventional university faculty), formal testing of some modules on learners, informal chat with a host of such people, etc. have further strengthened the process of maintenance and updating. More or less, the experiences must be similar at other ODE institutions related to development, maintenance and updating the course materials.

Maintenance, Updating and Revision

Course **maintenance** activities begin and continue thereafter, immediately after a programme/course is printed and ready for delivery to the learners. Such activities, undertaken by all the course coordinators, include: maintaining a 'corrections file', block-wise, based on the feedback (letters, informal discussion with counsellors peers, etc.) received from time to time from learners which provide the basis for: i) undertaking minor corrections in the printed materials/inclusion of errata sheets in the blocks/revision of extra readings, etc., ii) preparation of fresh assignments, programme guides, prospectus, practical guides, etc., and iii) minor changes in the programme delivery. This activity carried out by programme team consisting of programme coordinator and various course coordinators (usually all are full time faculty at IGNOU).

Course **updating** activities, undertaken in the subsequent years of programme delivery, are based on the experiences and data obtained from course maintenance, feedback received from learners on the questionnaire sent to them alongwith course blocks, feedback received from counsellors and other experts through informal discussions and letters, and the like. Analysis of student performance in assignments and term end examinations and reports from evaluators also provide important feedback for updating and revision activities. Updating involves minor changes in the course contents, presentation of content, and concomitant changes in assignments, programme guide, manuals, and programme delivery.

Programme/Course **revision** evolves on the maintenance and updating data, and the experiences accumulated for a few years of programme delivery, and involves re-looking at the entire curricular structure of the programme, the multi-media self-learning materials, assignments and manuals, programme guide, audio and video materials, teleconferencing and

interactive radio counselling, laboratory and hands-on experiences, and the entire programme delivery. Revision activities, as given in the **flow chart** at the end of this section, are undertaken after a decision is taken by the programme/course coordinator/team (usually within 5 years from the first delivery of programme/course) to go for it. Revision exercise is based on feedback received from a host of stakeholders and experts, coupled with the maintenance and updating data and experiences; and at times may lead to complete rejection of the programme/course and initiation of a new one.

Revision Experiences

The experiences of revision (in brief) already undertaken by academics in a few disciplines at IGNOU which were presented at the August 2002 workshop (Murthy and Panda, 2002) are presented below.

PGDDE and MADE Programmes

The major objective of these programmes is to develop human resources in the area of distance education in the country. Diploma in Distance Education (DDE) was one of the first programmes launched by the University in 1987. Later in 1995 DDE was revised and upgraded as Post-Graduate Diploma in Distance Education (PGDDE). Master of Arts in Distance Education (MADE) was launched in 1993 with an objective to develop specialization in various areas. PGDDE and MADE programmes comprise 30 credits each.

Post-graduate Diploma in Distance Education (PGDDE) and Master of Arts in Distance Education (MADE) are the first programmes of IGNOU to undergo extensive revision. The major factors that prompted the third revision of these programmes were — new developments/changes in the existing areas; feedback from various stakeholders particularly from learners; programme evaluation reports; and international demand.

The major strategies followed for revision were - students feedback; and Expert Review of each course and development of structure for revision in a workshop with experts and faculty.

The process followed by STRIDE for revision of PGDDE and MADE programmes is presented in the following figure:

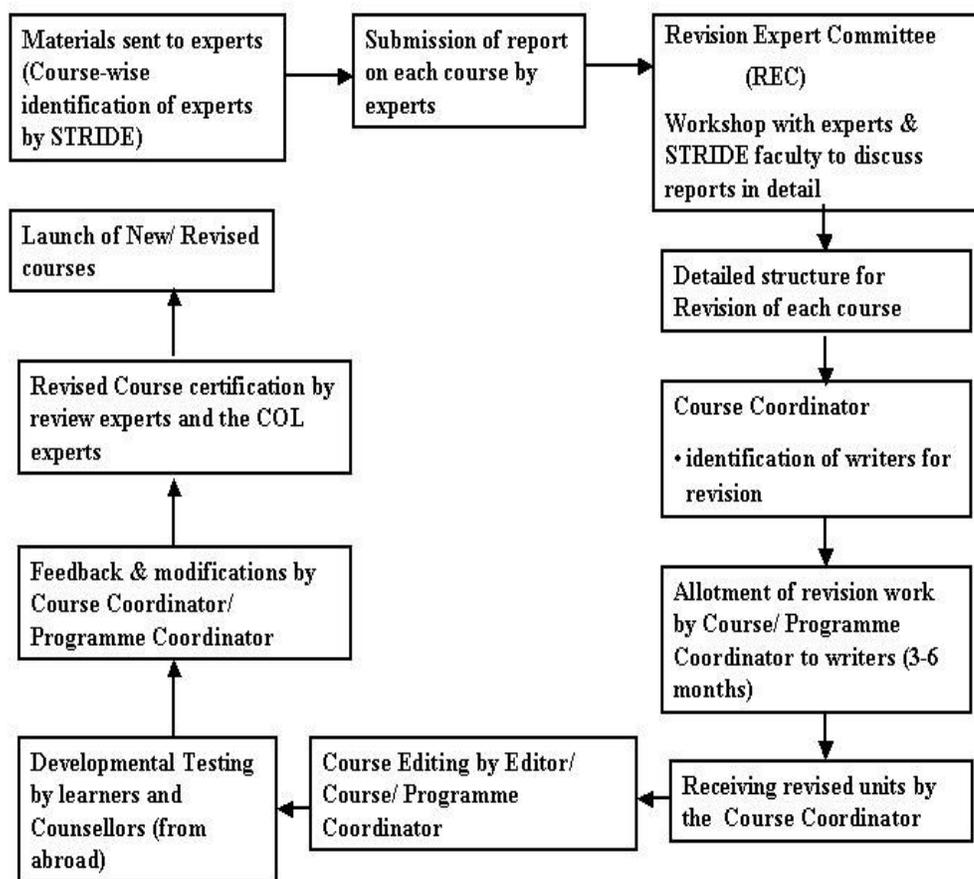


Figure 3: Process of Revision of PGDDE and MADE Programmes

Time taken for the above Revision was about 18 months (May-June 1998 to December 1999).

One important point to be noted in the above process was the identification of an expert to review each course, whose report was the basis for discussion in the Revision Expert Committee (REC) workshop. REC consisted of most of the experts who reviewed the courses and faculty of STRIDE, who were course coordinators of one or the other courses of PGDDE and MADE programmes. The entire revision was coordinated and supervised by the Programme Coordinator who had the overall control of and responsibility for the academic quality of the revision of both the programmes. The two day workshop of REC gave an ideal platform to share the ideas of reviewers and faculty to discuss their experiences of course maintenance and student feedback accumulated over a period of time. This exchange and inputs led to develop an appropriate and effective structure for revision of each course and programme as a whole. Later few review experts were associated with revision of units, which further strengthened process of revision. Other significant aspect of the revision process was that revised material was sent to learners and counsellors of

PGDDE and MADE programmes abroad as part of developmental testing. The feedback from them used for further modification of the courses by respective coordinators. Before launch, revised/new courses were certified by both Review Expert of the concerned course and experts appointed by the Commonwealth of Learning (COL), Vancouver which is the sponsoring agency of the Revision exercise alongwith STRIDE, IGNOU. This certification by experts and developmental testing of revised material helped in maintaining the quality of the materials.

Experiences

Major issues faced during the process of Revision were:

- In few courses planned drastic revision led to development of new blocks; in such situation maintaining pace and balance with other blocks and other courses of the programme was a challenge;
- During the course of revision, planned partial revision led to major revision and no revision led to partial one in few cases (many unforeseen challenges like this were faced in the process of Revision);
- Credit page finalization was a tough task in the sense that what to retain and what to delete from the credit page of pre-revised version; and
- Transition problems – maintaining two sets of assignments and two sets of question papers for old and new batch of students is a test for faculty.

(Based on the presentation of Dr. C.R.K. Murthy, STRIDE, IGNOU)

IGNOU's foundation course in Bengali (FBG)

Bachelors Degree Programme (BDP) has three components namely compulsory, optional and Elective courses. Under optional courses a student has to do one foundation course in English (FEG-1) or Hindi (FHD-2) of 4 credits; another foundation course in English (FEG-2) or Hindi (FHD-1) or any one of the modern Indian languages of 4 credits.

FBG course is 4 credits course developed as one of the optional course under Modern Indian languages to facilitate those students who know Bengali and want to do the course.

After a few years of the course on offer, feedback received from learners and academic counsellors helped the course coordinator concerned to take a decision to go for revision. Though various models/options were available, coordinator decided that the workshop model would be appropriate for revision. The Regional Director and one Assistant Regional Director from the Regional Centre, Kolkata, one faculty from the School of Humanities of IGNOU, and 5 academic counsellors of FBG participated in the workshop.

Various pre-workshop activities like —preparation of proposal, approval, financial support, schedule and meetings with counsellors and collection of material for revision etc. took 7-8 months time, which were crucial for the revision activity.

During the workshop, content deletion, addition, modification were identified and carried out by individual members and in groups. After the workshop, the content and the language editor took 4 months to finalise material. The format editing was done at Regional Centre Calcutta by the RD & ARD. Later on, the course material got printed.

(Based on the presentation by Dr. P.K. Biswas, STRIDE, IGNOU)

B.Sc. (Nursing) Programme

B.Sc. (Nursing) a professional programme of three years duration worth 80 credits. It is an important programme on two counts - high demand and utility to the societal needs. The programme team felt the need for revision of B.Sc (Nursing) programme after a few years of its offer based on: the feedback from various stakeholders including learners; demand from students to increase practical contact hours; the statutory body's (INC) requirements; and the demand for the programme from abroad.

The major strategies followed for the revision of B.Sc (Nursing) were:

Feedback from the students (with the help of a questionnaire), material review by subject experts and academic counselors before the Review Committee meeting.

Review Committee consisting of both reviewers and course writers met and considered the feedback from students and reports of subject experts. These inputs helped in modifying and finalizing the programme structure on the lines of Indian Nursing Council's requirement. Course material was sent to course writers, based on the modified/new structure for revision/re-writing. Material received from the course writers has been edited. The Review Committee/core group met again and approved the edited material for printing. In this meeting, the Review Committee also finalized the delivery strategies including assignments, counseling sessions, practical component, examinations etc. The same process was followed for the revision of material of the second and third years.

The end output of the revision exercise was that a few new courses worth 15 credits in addition to the extensive revision of existing courses (theory and practicals) worth 80 credits.

The major experiences of the revision process are that a few course writers preferred rewriting the unit/s to extensive revision; and the editor had to

modify certain areas written/revised by the course writers to maintain continuity and coherence.

(Based on the presentation by Ms. Bimla Kapoor, School of Health Sciences, IGNOU)

Physics Electives of B.Sc Programme

The B.Sc programme has a three tier structure with 96 credits: foundation, elective and application oriented courses. Physics discipline has 16 elective courses, out of them first two electives of 2 credits each (PHE-01 and PHE-02) have undergone revision process, which is explained below.

Two different methods followed for revising physics electives of B.Sc. programme are presented below:

The feedback received from counselors through questionnaires and from discussions in workshops of select counsellors; feedback from students through specially designed feedback assignments and comments of experts in the conventional system, was the basis for revision of 2 credit theory course PHE-01 titled Elementary Mechanics.

Revision of 2 credit Theory Course PHE-2 entitled ‘Oscillations and Waves’ and 4 credit laboratory course ‘Physics Laboratory-1’ was carried out in the workshop mode.

The revision in the syllabi was discussed in Expert Committee meetings. Units/write ups on experiments were distributed before hand to a set of course writers (counsellors and other experts) to work on. The revised syllabus and the corresponding SLMs were discussed and finalized in a 3 day and 6 day workshops, respectively.

Revision experience revealed that counsellors’ feedback is invaluable as course team not only get to know the difficulties but also their feedback on the level and standard of the course and acceptability in the peer group. These interactions with counselors also provide an opportunity to tap on talented course writers.

(Based on the presentation of Dr. Vijayashri, School of Sciences, IGNOU)

Above experiences of revision activities at IGNOU indicate that in the absence of a broad framework/guidelines, wide variations exist in the understanding of and processes followed for Revision. As you can observe, in the case of PGDDE and MADE programmes comprehensive revision — concrete and systematic procedure was followed from the beginning till the end. Such procedure is essential to maintain the quality and credibility of revision exercise. Gradually a broad framework and strategy has been adopted (please refer flow chart on revision at the end of this section) on the

basis of the workshop deliberations and recommendations each discipline is following the process, hence less scope for major variation in the process of revision and provide sanctity and credibility to the process of revision.

6.3 Framework and Strategies for Revision

While course updating and maintenance form an integral part of programme delivery each year, the decision on revision comes up only when the programme/course coordinator/team thinks that the maintenance and updating data increasingly becoming unmanageable, coupled with the institutional framework and policy which suggest that the course contents need periodic revision. Other factors which demand revision of a course/programme are - fast changes in the knowledge base of the discipline/area of study; recommendations of the statutory/ accreditation/ professional bodies; need for presentation of alternatives; and sometimes the demands of the employment market.

The timing of revision of a course or programme depends also on the nature of the programme itself. The revision of an inter-disciplinary programme like Certificate in Environmental Studies may be dictated by changes in one of the contributing disciplines, and, an online programme like BIT may be revised within the same year of its offer in comparison to a non-online programme. Certificate, diploma and degree level programmes that are modular and linear in progression in one area of study need revision at the behest of changes at any of these levels.

Focus of Revision

The focus of any revision exercise is certainly the ‘learner’ – as to how the heterogeneous groups of learners comprehend and assimilate the content, carry out various learning activities, assignments and projects, and achieve the learning objectives and programme goals. Secondly, expert opinion about the nature, selection and organization of content is crucial, and therefore, the revision exercise also focuses on this aspect of the area of study. Since any revision exercise has implications for the way the programme/course shall be offered/delivered, it is worthwhile to examine various delivery aspects while the revision exercise is undertaken. One might also give a thought to the way the programme/course (print and non-print material) was developed, and therefore, any modification required in the models of course development/revision.

What to Revise?

A decision needs to be taken on ‘what’ exactly is purported to be revised. While there will hardly be any choice as to **what** to revise, the focus can be readjusted when one looks at an array of feedback data received while the revision exercise is undertaken. Broadly, the variables included in revision

comprises of: the curriculum structure; organization of content; selection and level of content; presentation of content (content as well as access devices); various allied activities like assignments, manuals, additional readings, log books; audio and video programmes; programme guides; assessment and evaluation schemes; and various aspects of programme delivery. Additional considerations include programme/course requirements/pre-requisites, employability, equivalence, and the like. In a way, the revision exercise covers almost the entire process that a course development passes through (but, the duration and strategies for revision can be relocated).

Any revision exercise may focus on some of the aspects that need to be given special attention and therefore some rigorous exercise shall be carried out for those. A comprehensive, though not exhaustive, list is provided below to facilitate the programme/course coordinator/team to be aware of what all aspects are involved in revision, as also locate the areas based on the feedback received from a variety of sources that need priority attention.

Curriculum

- Curriculum/programme and course structures
- Programme/course goals, perspectives and focus
- Content selection and organization
- Credits and student workload
- Media mix

Course Units

- Unitisation and unit structures
- Content: relevance, updating, density, difficulty, load
- Content presentation: language, access devices, self learning style, activities, format and layout
- Assignments, projects, practicals: objectives, weightage and load, placement, design, relation with main course units
- Translation

Non-Print Media

- Media selection and integration (supplementary, complementary, integrated)
- Media programme objectives and content (in relation with course units)
- Content selection and presentation
- Technical aspects of production (visuals, voice, music, graphics and animation, etc.)
- Instructional design for media (audio, video, radio, television, teleconferencing, radio counseling, Internet)

- Online programmes: (additionally) interactivity, linkages, discussion forums, chats, online mentoring, online assignments, automated response system, etc.)

Assessment and Evaluation

- Scheme of evaluation, weightage, nature and type
- Evaluation mechanism for assignments, projects, practicals

Process of Development, Production and Delivery

- Models and processes of materials production
- Process of audio-video production and distribution
- Programme delivery (depending on the extent of revision)

Revision Framework

It is important that a framework for revision is established much before the formal collection of data meant for revision. The following may be considered for establishing a framework:

The nature and placement of the programme or course shall affect the strategies adopted for revision. An inter-school programme like BDP, a modular programme like MTS (CTS-BTS-MTS), a professional programme like MBA, a practical-intensive programme like PGDMCH, an online programme like BIT, etc. shall differ in their focus perspective and strategy of revision. *Further, revision of a course, placed within or related to a full programme, has to take into consideration the programme objectives and strategies of revision to be adopted for other courses (and, therefore, the whole programme) — this shall require dialogue and consultation amongst all the course coordinators of the concerned programme. While revising a course, therefore, one has to keep in mind the revision implications for overall programme structure and goals, and the overall subsequent programme delivery.*

The perspectives and framework (including the time frame) of revision should be established across the board for all the course coordinators and those to be involved in revision of a particular programme. Political, religious and allied ideological influence on content selection and organization should be reduced or avoided, and an objective and commonly agreed framework should be arrived at. In social sciences, such a framework may indicate the use of ‘mapping’ as a strategy to focus the tone of content selection and organization, and therefore, revision. Further, as is generally observed, most of the course modules have been largely ‘instructive’, focusing on a linear view of content organization and presentation. It is high time that the revision exercise may focus on presentation of content from multi-perspectives.

There are a whole lot of things that one may like to do at the time of revision. As noted earlier, what is to be done shall depend on the focus of the programme, the nature of feedback received from various stakeholders, the time frame and the facilities available. It is important for the revision team to determine the common minimum that needs to be done so as to maintain the sanctity of the revision exercise.

Operational Issues

Certain facilitating mechanisms and procedures should be developed and put in place for effective implementation of a continuous revision scheme, in any open distance education institution. Some of these are outlined below for consideration and gradual deployment.

A standardized feedback receiving procedure be established for course maintenance, course updating and programme/course revision. An established procedure of programme evaluation shall also facilitate this. To operationalize the strategy, an institutional database (vis-à-vis institutional studies) with significant input and space for course and student database should be developed. Though the current revision exercise need not wait for this operationalisation, it would significantly contribute to a continuous process of updating and revision from time to time. This shall also include regular feedback from counsellors and students. Standardised formats and questionnaires for collection of feedback from students/graduates, counselors, review experts, etc. shall be handy and therefore should be developed in the university to be used across Schools of Studies with minor modifications as required.

Monitoring the print run and inventory of the course material is essential so that the old course is not printed in excess, which may lead to wastage. Existing students in the programme be provided with assignments/term end examinations for the maximum duration which they are entitled.

Separate codes for revised courses be given for distinction and operational purposes.

Additional hands (may be in the form of consultants, experts, field investigators, and permanent faculty) are needed to share the workload for revision based activities. Certain institutional procedures and facilitation shall bring rigour to the process. However, the programme/course coordinator or team shall remain the main architects of any revision exercise.

Specific budget heads for revision should be created in Schools of Studies and the allocated fund should be utilized for revision.

The payment structure for a host of people (like subject experts, counsellors, evaluators, data analysts etc.) involved from time to time in the process of

revision should be streamlined. The established norms for the activities involved in course design and development may be followed. Allocation of credit to people involved in revision should be institutionally standardized and recorded in the credit page of the blocks/credit of other media.

Translation or revision of translated courses should be considered as a separate exercise backed up by established norms and procedures. Translation may be carried out once the English-version of course units are revised, and the existing translated versions should follow the reorganization of curricular structure and content organization for the main version.

Process and Strategy

The programme/course coordinator/team has the flexibility to choose the strategy to be adopted to analyse the feedback received from students, counselors, experts, etc. and carry out actual revision of print and non-print materials depending on the focus of revision, nature of subject area, type of feedback received, and the like. However, it must be noted that the flexibility is governed by the statutory requirements and the sanctity of revision itself (as given in the flow chart at the end of this section).

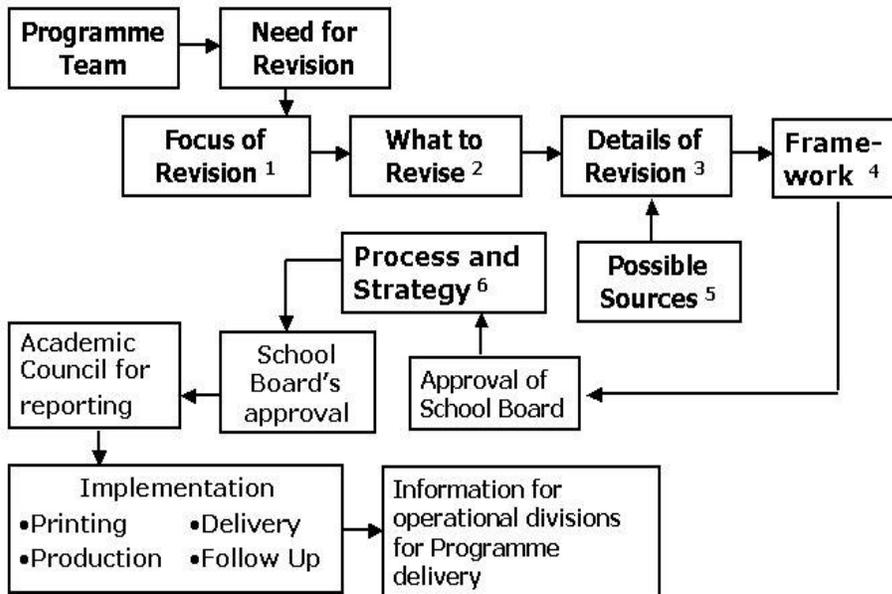
One could choose from a basket of options or strategies available, and even in some cases one may adopt all of these. Once an array of data are collected and collated to determine some broad strategy for revision and identification of areas to be revised, the collated results with interpretations should be made available to all those involved in the revision exercise. One of the most effective strategies has been to distribute course modules, unit-wise, to a few students/graduates and counsellors and get their detailed feedback on each of the units (and also audio and video programmes, etc.) Since revision exercise involves most of the tasks undertaken at the course design and development stages, the models adopted for the latter should be re-looked into to find out their feasibility of adoption in the case of revision. The strategies may broadly include the following:

- An array of data from a variety of sources need to be collected – through questionnaires or interviews, informal discussions, and/or views of review team.
- At some stage, the scheme needs to be reported to the concerned statutory authority (academic) in the institution.
- The Programme Coordinator (course coordinators in case of courses within a programme or an inter-disciplinary programme) may form a team alongwith some colleagues, consultant (if available for revision exercise), and one or two outside experts (the selection and composition of the team shall rest on the programme/course coordinators).

Activity 14

Do you think feedback from learners is useful or not in the revision activity?
 If your answer is yes, how it will be useful? If no, why do you think so?

Flow Chart on Revision of IGNOU Programmes

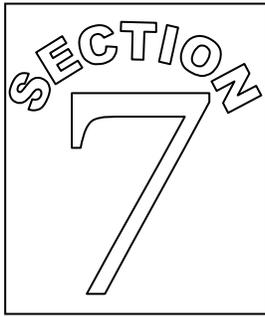


Note: For details of 1,2,3,4,5 & 6 refer pages 84 & 85

Details of Flow Chart on Revision

<p>Focus of Revision¹</p> <p>LEARNER vis-a-vis programme/course goals and the delivery mechanisms</p>	<p>What to Revise²</p> <p><i>Primary</i></p> <ul style="list-style-type: none"> • Syllabus (knowledge base) • SLM (print and Non-print) • (content and presentation) • Assessment & evaluation strategies <p><i>Secondary</i></p> <ul style="list-style-type: none"> • Programme/course requirements • Programme/course delivery • Employability • Equivalence
<p>Details of Revision³</p> <ul style="list-style-type: none"> • Curriculum Structure • Programme goals and perspectives, focus • Content selection and organization • Credit and student workload • Content relevance, updating • Media-mix • Content density, difficulty, load • Language • Content presentation (self-learning style, access devices, activities, format, layout and design, style) • Assignments, projects, practicals, counseling <hr/> <ul style="list-style-type: none"> • A/V content & presentation • Programme development process • Translation • A/V media Production • Programme delivery (subject to the extent of revision) 	<p>Framework⁴</p> <ul style="list-style-type: none"> • Nature of programme (BDP/inter-disciplinary/professional/modular/online, etc) • Course(s) within the programme • Revision perspective(s) • Common minimum strategy to maintain sanctity of revision • Programme goals/course goals within the programme (Reshaping for carrying out further Certificates/Diplomas/Non-Certificates-based courses, etc) • Changing course development model(s) <p>Operational Issues</p> <ul style="list-style-type: none"> • Student database • Course database • Faculty workload • Counsellor regular feedback • Payment to course evaluators, counsellors, data analysis • Credit page allocation • Translation

<p>Possible Sources ⁵</p> <p><i>Maintenance and Updating</i></p> <ul style="list-style-type: none">• Corrections file (course-wise, block-wise)• Formal testing of some modules• Assignments and TEE answer scripts/ projects/practicals• Feedback through course/block, questionnaires• Updating experiences• Informal discussion with students, counselors, etc. <p><i>Specially Designed Feedback</i></p> <ul style="list-style-type: none">• Learner Feedback• Expert feedback• Counsellor feedback• Employers/other stakeholders• Instructional designer feedback• Programme Team/Review Team feedback	<p>Process and Strategy ⁶</p> <p><i>(Revision Expert Committee Team)</i></p> <ul style="list-style-type: none">• Programme/Course Coordinator• Programme/Course team• Collation of all kinds of feedback for the team to reflect• Coordinator-writer-editor model• Workshop model• Consultation with service divisions• Inter-disciplinary team
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SUMMARY

In this handbook we have tried show as to how self-learning material can perform the functions of a classroom teacher, and thereby how a distance learner may have the very learning experiences which a student may have in classroom situations. One may feel that the guidelines given in this handbook are too many to keep track off, and that it may be difficult for course writers to accommodate all of them while writing a unit. To this we say that what has been suggested in this handbook is an elaboration of the issues involved in writing self-learning materials, an attempt to link theory to practice. We reduce the entire discussion to two notions –

- Access devices
- Learner-activities

Access devices are those means which help the learner to reach (grasp) what is presented in the unit. Obviously, title, structure of the unit, objectives, introduction, section/sub-section headings, diagrams, glossaries, etc., are all access devices which we have discussed in this handbook.

Under learner-active materials, we have discussed those built-in strategies which are meant to motivate the learner to sit up and be engaged in various types of academic exercises, such as answering questions, jotting down points, explaining the concept, collecting some material, etc.

This brings us to the principles of unit design. Here, the course writer has to decide on the best possible sequence/arrangement of the content of the unit. Learner-active materials consist of sections and subsections presented in a logical arrangement. We further discussed the use of simple language, illustrations in the self-learning materials to make it learner friendly and enrich presentation style.

Other major aspect discussed in this handbook is revision of self-learning materials with emphasis on the following issues:

- Need for revision
- Revision experiences
- Focus of revision
- Strategies and framework for revision
- Operational issues in the revision process.

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