



Uttarakhand Open University

Manual for the development of SLM

Acknowledgement

This manual owes much to the two day national workshop on “Self-Instructional Material Development” conducted by Professor Swaraj Basu from the School of Social Sciences, IGNOU, Professor Manjulika Srivastava from the Distance Education Council (DEC) and Professor CRK Murthy from STRIDE, IGNOU. The workshop, organised by Uttarakhand Open University, was held on January 24-25, 2011.

Further, we have liberally drawn from the Distance Education Council’s well-researched compilation *Handbook on Transformation of Print Materials into Self Learning Material* by Professor Manjulika Srivastava (2007), and we gratefully acknowledge the same.

About ODL System:

Distance education mode is becoming increasingly more relevant in Indian context because it caters to a wide range of students who want to upgrade their educational qualifications for various reasons. In this system, the students are free to learn at their own pace and convenience while being placed far away from the institution. The experience across the globe substantiates that ODL system is an effective tool for educationally empowering the different sections of society who, for one reason or the other, had missed the formal ‘face-to-face’ education. These days, distance education provides many vocational, professional and technical courses, including specialised programmes oriented towards the higher end of technology usage. It also has the potential to reach the unreached, marginalized and excluded people residing in distant places and difficult terrain.

About Uttarakhand Open University:

Strictly in tune with the philosophy of ODL system, Uttarakhand Open University was established by an Act of Uttarakhand Legislative Assembly in 2005 (Act No. 23 of 2005) with the aim of disseminating knowledge and skills through distance learning, using the flexible and innovative methods of education to ensure ‘independent learning’. The University uses novel educational programmes, various modes of communication technology and contact sessions to make distance learning more effective. The major objective of the University is to cater to the educational needs of the target groups to create skilled and knowledge based human resource for speedy upliftment and development of the State. The University aims to impart quality education by maintaining high academic standards. For this purpose, it has radically reoriented itself in view of the rapid changes in the sphere of professional and technical education and has developed a number of new and innovative self-employment/ employment oriented courses of study.

Uttarakhand Open University is especially focusing on the educational needs of women, the tribals and other marginalized sections. It has extended its reach to most distant and difficult places and has made its presence felt even in the remotest corners of the state. It has signed MoUs with various providers with the sole aim of sharing resources and knowledge for the benefit of the people. The vision of the University is to provide the most critical components of growth, through quality higher education, to the state of Uttarakhand.

Objectives of this Manual:

This manual will assist course writers and editors in the development of Self Learning Material. Further, it will provide guidelines for developing, translating, and adapting self-learning material to specific learner needs and requirements.

Terminology Adopted by UOU:

Programme is the curriculum for a degree, diploma or certificate as the case be. It is a combination of a number of courses.

Course is equivalent to what is known as ‘Paper’ in the traditional systems. It consists of a few printed blocks, audio-video material, assignments, practice sessions (if required), counselling sessions, project work (in a few courses), library work etc.

Block is a booklet of 60 to 80 A-4 size printed pages covering one unified theme. 4 to 6 blocks make a course (in rare instances a course may have a few more blocks).

Unit is a lesson / chapter of 5000 to 6000 words or 20 to 25 printed A4 size pages. A block consists of 3 to 5 units.

Note: Study input required to complete a standard Block of 3-4 Units is 30 study hours, which is equivalent to 1 credit point. However, credits are assigned to a Course, hence actual credits for a Block may vary according to the nature and scope of the Course.

Understanding Self Learning Material:

Many of us have written books and research papers which cater to a much wider audience ranging from undergraduates to specialist scholars in the field. The style generally adopted is scholarly, concise and pithy and is often loaded with concepts and terms whose understanding is taken for granted.

In preparing the Self Learning Material (SLM) for the Open and Distance Learning (ODL) mode, we assume our learners to be at a very elementary stage of growth at their level. Many of them may have dropped out of school and college many years ago and may have forgotten much of what they had learned there. In some sense, they would be making a new beginning. Then there would be some who are fresh graduates and have recently taken up jobs. For them, distance education is the only avenue open if they wish to continue learning. This group consists of students who are average and above-average. It is thus obvious that our self-learning-material addresses a much wider range of scholars.

Further, we need to remember that our students can spare a very limited time for study every day – may be an hour or two, at most. Thus the main body of the course must be divided into smaller and manageable chunks – sections and sub-sections – that can be easily covered in one or two sittings.

Some of our students would be located in remote places where they have little access to resources either in form of books, peer-group or teachers. Many of them would be low on confidence and motivation. Our SLMs therefore must be written in such a way that they

should not only be fairly comprehensive and self-sufficient but should also at the same time provide confidence and motivation to the learner. The student must be made to feel that the SLMs are quite adequate for achieving a fair level of knowledge and skill in their given field.

The style therefore should be, as far as possible, conversational, though not colloquial. It must compensate for the missing class room and the personal supervision of a caring teacher. Care must be taken to see that the words and concepts introduced in the unit are not beyond the learning range of the target audience. The study material need be presented in a graded manner so that even if much of it addresses the average or less-than-average student there is always something in it to stir the imagination of those who ever aspire to reach higher.

To conclude, in a less poetical language: in the Open and distance learning system, Self Learning Material is an important medium of imparting knowledge to the learners. Since there is no face to face interaction the quality and the content provided in the study material should help in providing a classroom like atmosphere. The material should be self-instructional in approach. “The term *self-instruction* refers to a process in which: 1. materials take learners step-by-step through an instructional process; and 2. self-assessment exercises are a central feature.”

(Source: <http://www.col.org/resources/publications/trainingresources/Pages/intro.aspx>)

Following are some of the salient features of SLMs:

- SELF EXPLANATORY
- SELF CONTAINED
- SELF DIRECTED
- SELF MOTIVATING
- SELF EVALUATING
- SELF LEARNING

Self- Learning Material therefore contains the following:

- Clearly stated objectives
- User-friendly You and I style of writing
- Short, manageable chunks of learning
- Plenty of helpful examples
- Reference to the learners’ experiences
- Use of illustrations where they are better than words
- Headings to help learners to find their way around
- Links to other media where appropriate,
- Obvious awareness of different learners needs
- Exercises that get the learners to use the material

- Space for learners to write down their own ideas
- Feedback to help learners to check their own progress
- Suggestions about getting help from other people
- Glossary and summary should also be included

(Source: DEC Guidelines)

Some of the points listed above will become clear as we discuss next, in detail, the structuring of an individual Unit.

Types of SLM:

- Books
- Workbooks
- Worksheets
- Audio-Video tapes
- Computer based training (CBT) packages
- Multimedia

Structure of the Unit:

The structure of a Unit follows a standard pattern where the elements are listed using a multilevel decimal system of division:

Unit Cover Page consists of the title and unit structure

- 1.1 Introduction
- 1.2 Objectives
- 1.3 Main Body Section One
 - 1.3.1 Sub-section one
 - 1.3.2 Sub-section two
 -
- 1.4 Section Two
 - 1.4.1 Sub-section one
 - 1.4.2 Sub-section two
 -
- 1.5 Section Three
 - 1.5.1
 - 1.5.2
 - etc.
- 1.6 Summary
- 1.7 Glossary
- 1.8 Answer to check your progress/Possible Answers to SAQ
- 1.9 References/Bibliography
- 1.10 Suggested Readings
- 1.11 Terminal and Model Questions

Note: the first number – 1, in this case – denotes the unit number. Unit Four, for example, in a block will be structured as 4.1, 4.2, 4.3.1, 4.3.2 etc.

The broad division of units consists of three parts:

The Opening Section includes (i) Title of the Unit (ii) Unit Structure (iii) Objectives and (iv) Introduction

The Main Body includes (i) Headings and sub-headings (ii) Activities and Self-Assessment Questions – SAQs (iii) Illustrations, graphics etc. (iv) in-text references

The Ending Section includes (i) Summary (ii) Glossary (iii) Possible Answers to SAQs (iv) Further Reading (v) List of References / Bibliography (vi) Model questions

The Opening Section:

Unit Cover Page:

Complete list of contents containing sections and sub sections will be provided on the cover page at the beginning of each unit. The title and the other details of the unit will be at the centre of the page. The cover page is not to be numbered.

Title: In most cases, the title of the unit is provided in the detailed curriculum. The unit writer, however, can provide a sub-title to draw closer attention to the core content of the

unit. In some cases, the unit writers may be asked to work out the division of a block into units, in which case they will provide the titles for the units. The title of the unit conveys the topic covered in the unit.

Unit Structure: The list of contents of the unit is given at the cover page will be presented in Headings and Sub Headings

Sample Unit Cover Page-

Unit 1: Learning: Meaning, process and characteristics

- 1.1 Introduction
- 1.2 Objectives
- 1.3 Learning: Concept and Meaning
- 1.4 Different Definitions of Learning
- 1.5 Process of Learning
- 1.6 Characteristics of Learning
- 1.7 Factors which influence the process of Learning.
 - 1.7.1 Motivation
 - 1.7.2 Attention
 - 1.7.3 Interest
- 1.8 Summary
- 1.9 Glossary
- 1.10 Answer to check your progress/Possible Answers to SAQ
- 1.11 References/Bibliography
- 1.12 Suggested Readings
- 1.13 Terminal Questions

Introduction:

Introduction will contain brief contents of the unit. It will be divided into three paragraphs. First paragraph will provide linkage to the previously acquired knowledge base of the learner and will relate it to the new knowledge provided further in the unit. Second paragraph will give an overview of the content of the unit and will provide necessary motivation to undertake the learning task. Third paragraph of the introduction will serve as a study

guidance by which the learner will relate the unit with real life/learning experiences. It will help the learner as an aid in comprehending the unit properly.

Sample Introduction:

In the previous unit you have read the various stages of human growth and development. Each stage has its stage specific characteristics but learning is common to all. Learning is an integral part of human growth and development. Learning takes place as a result of continuous interaction between the individual and the environment.

Learning is the modification of behaviour through experience and training. Learning is developmental, organized, purposive, active and a product of interaction between individual and the environment. Various factors influence learning.

To give teaching a base we need a sound knowledge about what learning exactly is, how it takes place and what is the conducive environment for that.

Objectives of the Unit:

Introduction of the unit will be followed by learning objectives. Objectives of unit will indicate the Intended Learning Outcomes. “Objectives are precise descriptions of performance the instruction is expected to produce”. It will state clearly what the learners are expected to learn after reading the unit. In defining objectives there should be maximum use of measurable and attainable action verbs like define, identify (to know); name, label, describe, distinguish, (to understand) etc. The following table provides a fairly comprehensive listing of such words.

Examples of transforming objectives from Instructional Terms into Behavioural Terms

Objectives in Instructional Terms	Objectives in Behavioural Terms
Know	Define, describe, identify, label, outline, reproduce, select, state, list, recall, recognise, name
Understand / Comprehend	convert, defend, distinguish, estimate, explain, extend, generalize, illustrate, infer, paraphrase, predict, rewrite, summarize, classify, identify, indicate, formulate, represent
Learn /Apply	Change, demonstrate, discover, manipulate, modify, operate, predict, prepare, produce, relate, show, solve, use, assess, perform, construct, show, find, choose
Analyse	Break down, differentiate, distinguish, identify, illustrate, infer, outline, point out, relate, select, separate, subdivide, categorize

Synthesize	combine, compile, compose, explain, generate, modify, organize, rearrange, revise, rewrite, summarize, write, restate, organize, relate, argue, derive.
Judge / Evaluate	Apprise, compare, conclude, contrast, criticize, describe, discriminate, explain, justify, interpret, relate, evaluate, defend, attack, avoid, choose

Source: IGNOU (1989) cited in Srivastava (2007)

Sample Objectives:

After reading this unit you will be able to:

- Explain and define the meaning of learning.
- Describe the process of learning.
- Write the characteristics of learning.
- List the factors influencing the process of learning

For sequencing of the objectives one may refer to Bloom's Taxonomy

☞ *Points to remember:*

- Objectives should be written in simple and clear language.
- Unambiguous action verbs should be used.
- Only a few manageable objectives per unit should be set
- Sequencing of objectives from the lower to higher level of priority should be considered

The Main Body:

The main body of the unit defines and explains the content and is divided into headings and sub-headings. The language to be used for this purpose should be simple, easy and in a conversational style i.e. *I-you-me* mode, so as to create a friendly atmosphere of learning which does not dictate knowledge / information. To create interest and help the learner participate in the exercise the following tools can also be used:

- Visual Inputs
- Blocks
- Charts
- Pictures

- Tables
- Line diagrams
- Case lets

Thematic Content of the Unit:

The contents should be divided into smaller chunks and structured under heading and sub-headings. The purpose is to present a logical and graded arrangement of subject matter. The language should be simple and easy to understand. It should not be bookish and full of jargon. Language used should be appropriate to the level of the learner.

☞ Points to remember:

- Use simple and easily understandable language.
- Avoid unfamiliar words, double negatives, passive voice, and difficult language structures.
- Use learner friendly approach so as to remove the feeling of isolation in the learner.
- Bring in personal touch
- A paragraph should be devoted to a single basic idea
- Wherever possible change the language from passive to active by using direct language.

Headings and Sub Headings:

The contents of a unit are to be divided into headings and sub-headings and can be numbered like 1.1, 1.2, 1.3 etc. The sub-headings can be numbered as 1.1.1, 1.1.2, 1.1.3 etc. Sub-Headings can be further broken down to sub-sub headings but these need not be numbered and may be distinguished by using bold, italics and other appropriate typefaces.

Self-Assessment Questions (SAQ)/ Check Your Progress:

The major aim of SAQs is to make the learner *think and write*. These should make the learners pause, recapitulate, consolidate and evaluate what they have learnt so far before moving on to the next stage. After every section, SAQs should be included. Further, as per need it can also be provided in the sub-sections.

Types of SAQs:

- Short answer questions
- Extended answer questions
- True-false
- Multiple-choice
- Matching
- Fill-in-the-blanks

- 'Put in order'
- Complete the graph/diagram/table task
- Puzzles
- Create something (e.g., type a paragraph of text using your word processor)
- Survey (e.g., observe traffic, interview a person)
- Sequencing

Referencing:

In the act of writing units no one of us is creating new knowledge. We will be using books, articles, internet files or other media for the presentation of ideas for a unit. Because of rather stringent intellectual property rights, one has to be a little more careful these days in acknowledging all the sources one has used. The referencing should be entered as and where a source is used. To mention an author by surname followed by the year of publication in brackets should be enough for in-text referencing. The details of every source used are to be given at the end in Reference Section. For any legal action arising out of the neglect of proper referencing, the unit writer alone shall be solely responsible.

The Ending Section:

Summary/Let us Sum Up:

The main points and themes covered in the unit must be reviewed and highlighted at the end of the unit in the form of summary. Please note that 'this is not a conclusion': rather it will help the learners in remembering main points of the unit and therefore it is written at the end of the unit. It should be of one paragraph and should not be too long. Further, if the author feels the need, key points can be given as a numbered or bulleted list or a diagram-chart.

Sample Summary:

In this unit we have discussed the process of learning and how it is associated with modifications in human behaviour. We also learned that the process of learning involves permanence with respect to time dimension. Learning is a process which brings relatively permanent changes in the behaviour of a learner through experience and practice. Further, we learnt different definitions of learning and its various concepts. Generally the factors affecting learning can be classified as those associated with learner, the type of learning experiences provided to the learner, and the men and material resources available for learning.

Glossary:

A list of new and difficult terms used in the text is to be given at the end part of the unit. Each word, term or concept is explained in detail. It helps learners to become familiar with words which are difficult to understand or are too technical.

Sample Glossary:

Motivation- Physiological feature that arouses an organism to act towards a desired goal.

Attention- Concentration of the mental powers upon an object.

Answers to check your progress/Answer to SAQs:

Possible answers to the self-assessment questions should be presented in this heading. If necessary, the answer may contain a detailed discussion of the problem, and pointers and varying approaches to the problem should be suggested.

References:

Various sources which are used for preparing the unit should be presented after SAQ's under the heading References or Bibliography. If any material is quoted verbatim, it must be enclosed in inverted commas in view of Intellectual Property Rights. Similarly, if some kind of thoughts or ideas are borrowed from another source and summed up, they also need to be acknowledged properly. Referencing for languages and literature may follow the MLA style. For other disciplines, APA style is mandatory. Further, all references should be listed in alphabetical order.

Non-MLA References should have the following in the given order:

- a) Name of the Author, surname first
- b) Year of Publication (placed in brackets)
- c) Title of Publication (printed in italics)
- d) Place of Publication
- e) Publisher
- f) Page Numbers

Note: If it is a paper or a chapter then the title should be enclosed in quotes followed by the title of the book from where it is taken.

Sample Reference:

A full reference list should be included.

For books: Surname, Initials (Year of Publication), Title, Publisher, Place of Publication.

Crow, L.D. and Crow (1973), A., *Educational Psychology*, Eurasia Publishing House, New Delhi. (Times New Roman, 10 pt., left aligned, hanging indent 0.5 cm).

For chapters in edited books: Surname, Initials (Year), "Title", in Editor's Name, Initials (Ed.), Title, Publisher, Place, Pages.

Guthrie, E.R. (1942), "Conditioning: A theory of learning in terms of stimulus, response and association" in N. B. Henry (Ed.), *The Forty-first Year Book of the National Society for the Study of Education, Part II. The Psychology of Learning*, University of Chicago Press, Chicago, p.30

(Times New Roman, 10 pt., left aligned, hanging indent 0.5 cm)

For articles: Surname, Initials (Year), "Title", Journal Name, Volume, Number, and Pages.

Bower, G.H and Karlin, M.B. (1974), "Depths of processing pictures of faces and recognition memory", *Journal of Experimental Psychology*, Vol.103, pp.751-757. (Times New Roman, 10 pt., left aligned, hanging indent 0.5 cm)

Electronic sources should include the URL of the web site at which they may be found along with the date of latest access.

Suggested Readings:

It is a reading list of additional material available on the topic which may be of use for learners who want to expand their knowledge beyond the details provided in the SLM. Though the learning material should be generally self-sufficient, for an above-average learner who seeks to know more about the topic, these aids can come handy.

The list may include the following, and the items should be presented in the same style as References:

- Books
- e-links
- Websites
- Reports
- CDs

- Blogs
- Journals
- Articles
- Novels, etc

While preparing the list of suggested readings, the followings points should be kept in mind:

- Are the suggested readings suitable for the topics covered in the unit?
- Do they match the level of the learner?
- Are they relevant to the expected learning outcomes?
- Are they complete in all respects, i.e. with the name of the author/s, title, year of publication, and name of publisher?
- Is there uniformity of style being followed throughout the materials?

Terminal Questions:

Terminal questions should be provided at the end of the unit which will include questions that need be asked in order to self-assess whether the learning outcomes of the unit are attained. Questions need to be long enough to provide a valid self-assessment of what learners have learnt. The questions should be of a diagnostic nature, where you (the question formulator) can predict the likely wrong answers.

Ideally, a self-assessment test should test all the new learning in a section, that is:

- All new vocabulary
- All new concepts
- All new rules
- All new facts
- All new theories
- All new methods
- All new problem-solving methods
- All new methods of creating things (e.g., reports, spread sheets)
- All new skills of analysis.

(<http://www.col.org/SiteCollectionDocuments/odlinstdesignHB.pdf>)

Format of Terminal Questions:

A good self-assessment test:

- takes the minimum amount of time necessary to give the learners a clear picture of their progress,
- tests as much of the content of the section as possible,
- is of reasonable length in consonance with the length of the study section,
- uses questions that are diagnostic in character, and
- provides feedback on correct answers and likely wrong answers.
- should be relevant to the text
- should cover the entire contents in the given units.

The terminal questions will help the learners to develop their writing skills and will also prepare them for the term-end examinations.

Sample Terminal Questions:

Q1. Explain the concept of learning. Discuss personal factors that influence learning, with suitable examples.

Q2. Discuss some effective methods of learning which you would like your students to practice in the class and home. Illustrate your answer with relevant examples.

Format/Styling/Layout of SLM:

The unit writers are strongly urged to follow these instructions to ensure the production of uniformly high-quality self-learning materials.

Page Size: A4 Size

Page Margins: top 2.54 cm, bottom 2.54 cm, left and right 2.54 cm each.

Font Type: Times New Roman, justified

Line Spacing: 1.15 or Single

Paragraph Spacing: Before: 0 pt; After: 6 pt

Text Body Font Size: 12

Colour: Black for all contents

Header: Left margin 0.00 cm, Right margin 0.00 cm, Spacing 0.51 cm and Height 0.10 cm

Footer: Left margin 0.00 cm, Right margin 0.00 cm, Spacing 0.51 cm and Height 0.10 cm

Layout of Headings:

Title of the Unit:

- Font Type: Times New Roman
- Font Size: 18
- Attributes: All Capital Letters and Regular

Section Heading:

- Font Type: Times New Roman
- Font Size: 16
- Attributes: All Capital Letters, Bold and Italics
- Border: 0.05 pt. (top and bottom only)
- Border Spacing: 0.5 cm from top and bottom

Sub Section Heading:

- Font Type: Times New Roman
- Font Size: 14
- Attributes: Bold

Sub-Sub Heading:

- Font Type: Times New Roman
- Font Size: 13

- Attributes: Bold

Figures and tables must be included in the main text and must be individually numbered and captioned. Figures and tables should be listed in centre. Captions should be placed below figures and above tables. They are to be typed in Times New Roman 11, in italics, and centered. One line before and after tables and figures should be left.

Content of the Header:

Left: Course Code: Course Name {Arial, Italics, 9, Bold}

Right: Uttarakhand Open University {Arial, 9}

Content of the Footer:

Left: Unit Number: Unit Name {Arial, 9}

Right: Current page of Total page count For Ex.-Page 6 of Page 12 {Arial, 9, Italics}

Use of Unicode:

Unicode is the standard method of representing Non-English (non-roman) characters in the digital documents. This allows us to be free from specific fonts (which is predominantly used by many people to input Non-English characters). Further, Unicode is supported by all major digital devices and systems. Since we need to use Hindi/ Devanagari, for some of the digital content, UOU recommends Unicode.

