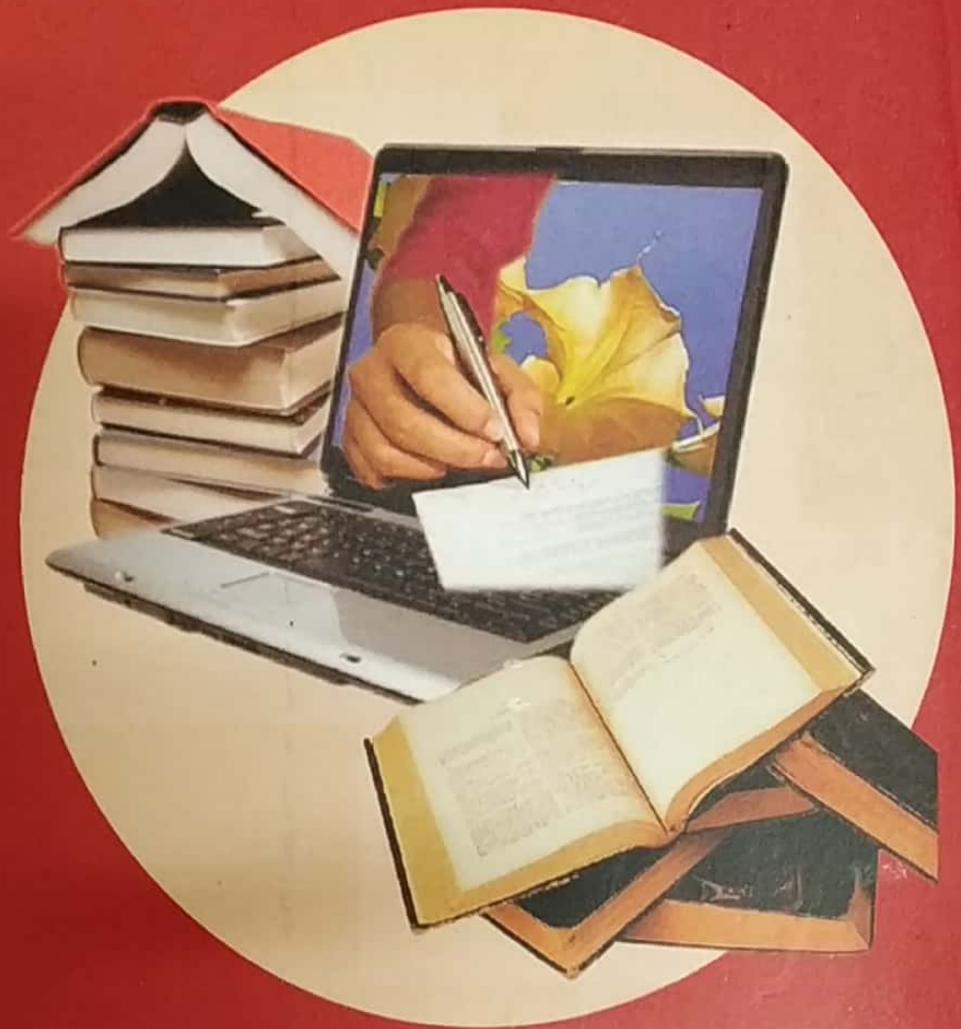


IGNOU

Manual for Course Writers



**Staff Training & Research Institute of Distance Education
Indira Gandhi National Open University
Maidan Garhi, New Delhi-110068**

Manual
for
Course Writers



Indira Gandhi National Open University
Maidan Garhi, New Delhi-110068

Manual for Course Writers

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Acknowledgments

Section 3, based on STRIDE Handbook 5: *Development and Revision of Self-Learning Materials*.

Section 4, based on STRIDE Handbook 12: *Programme Evaluation in Open and Distance Education*.

July, 2008

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ISBN-978-81-266-

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Further information about Staff Training and Research Institute of Distance Education (STRIDE) and Indira Gandhi National Open University courses may be obtained from the University's office at Maidan Garhi, New Delhi-110068, India and website: www.ignou.ac.in

Citation to this Manual can be made as follows:

IGNOU (2008). *Manual for Course Writers*, New Delhi: IGNOU.

Printed and published on behalf of the Indira Gandhi National Open University (IGNOU), New Delhi by Prof. Santosh Panda, Director, STRIDE, IGNOU.

Lasertypeset by : Rajshree Computers, V-166A, Bhagwati Vihar, Near Sec. 2, Dwarka, Uttam Nagar, N.D. -59.

Printed at

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Foreword

Foreword

Open and Distance Education has become a major intervention to increase access, equity and quality in education. Over the years, it has been seen that printed learning materials are the mainstay of distance education all over the world, and more so in the developing world. Due to the high quality of the printed text materials supplied to the learners, distance education has been successful in establishing a reputation of its own. The pedagogical designs used in development of print materials differ from institution to institution. However, in India the design used by IGNOU for Self-Learning Materials (SLM) has become *de facto* standard for use in most distance teaching institutions in the country. The design of print materials at IGNOU follows certain pedagogic principles and structure. It is through these special features that the study materials are developed to meet the needs of distance learners and enable them to learn at a distance.

Though IGNOU design is not the only way of developing quality SLMs, this Manual has been developed to have uniformity of practice at IGNOU. A large number of Course Writers write lessons/units for IGNOU courses and programmes but every time the course writers need to be oriented. They also face difficulties in maintaining uniformity in presenting the contents as well as taking care of other issues relating to credits, copyrights, etc. In this context this manual shall be a useful guide to all the Course Writers. While this manual provides necessary guidelines to develop text-based lessons, it will be supplemented by Course Writers workshops and further support by the internal faculty of IGNOU to develop high quality learning materials for our distance learners.

I hope this manual will be useful for the development of learning materials for the new programmes of the University and also for the revision of the existing programmes. I congratulate STRIDE for the compilation of this manual.



New Delhi
July 14, 2008

Prof. V. N. Rajasekharan Pillai
Vice Chancellor, IGNOU

Introduction

Introduction

In spite of the tremendous developments in the technology front, the printed study material is still the most predominant mode of teaching and learning in the distance education system. In India, the use of printed study material in distance education is all the more important due to poor access to technology amongst the learners with diverse backgrounds. It is also cheaper in comparison to other media available for delivery of learning materials. Besides cost, printed learning material provides numerous other advantages:

- It helps the learners to process information anytime, and anywhere, free from the time schedules of radio and television;
- It helps the learners to study at their own pace, and allows them to devote greater time, if certain tasks require more involvement of the learners;
- It is a good source of reference, and it is useful to reach a literate target group;
- It is also useful to develop understanding of complex concepts and processes through printed texts.

At the Indira Gandhi National Open University (IGNOU), printed study material is the master medium that is supplemented by the use of other media and technologies, such as radio, television, audio-cassettes, video-cassettes, teleconference, interactive radio, World Wide Web, etc. Large number of Subject Matter Experts (SME) develop courses and programmes at IGNOU. These SMEs are oriented towards development of self-learning materials through Course Writers' Workshops. There has always been demand for a short manual on how to develop self-learning materials to supplement the face-to-face workshops. This manual has been designed to meet that particular demand.

Objectives of the Manual

It is expected that the manual shall be distributed to Course Writers for use in pre- and post- workshop situations. Thus, the objectives of the manual are to provide a short introductory orientation about distance education and the process of preparation of self-learning materials. After going through this manual, you will be able to:

- Explain the basic concepts associated with distance education;
- Develop a conceptual understanding of the target group;
- Identify and use the characteristics of self-learning materials;
- Prepare self-learning materials suitable for distance learners; and
- Avoid chances of plagiarism and adhere to copyright regulations.

We also expect you to use this manual to reduce course development time, as the materials received by us from different Course Writers would be

uniform in the format, presentation of content, etc. and would require less editorial interventions.

Organization of the Manual

This manual is divided into ten sections:

- Section 1 gives you a brief overview about concepts of distance education;
- Section 2 explains the characteristics of distance learners;
- Section 3 is very important, as it forms the base of the distance learning materials;
- Section 4 provides a short checklist to evaluate the quality of your self-learning material;
- Section 5-8 describe how to organize the presentation of self-learning material;
- Section 9 explains plagiarism and copyright; and
- Section 10 presents specific information about submission of written units to the University.

There are useful appendices at the end comprising of various forms, list of action verbs and commonly confused words.

Using the Manual

As an SME, you are free to use this Manual the way you like. However, we recommend that you read through Sections 1 to 10 in a linear way. It would be useful to browse through the Manual once, and decide what content to emphasize. Maybe, you are already acquainted with some of the guidelines given in this manual, and thus, you will only require to read the relevant sections that are of interest to you. Whatever may be your approach, it is useful to keep this manual as a handy tool for reference. On any of the aspects discussed in this manual, you can get further guidance from the following STRIDE Handbooks:

STRIDE Handbook 1: *Open and Distance Education*

STRIDE Handbook 5: *Development and Revision of Self-Learning Materials*

STRIDE Handbook 6: *Editing in Distance Education*

Feedback

If you use this manual, and find it useful or otherwise, please do let us know. Your feedback shall be very useful for us to revise this manual. To provide your feedback on this manual, please do write to:

Director, STRIDE
Block # 14, IGNOU Campus
Maidan Garhi
New Delhi-110 068

Understanding Distance Education



Introduction

Distance education as we understand today has travelled a long journey. In this process, it has continuously improved as a method of teaching and learning. However, in practice different institutions have adopted different levels of sophistication leading to different understandings of the concept of distance education. The earliest use of distance education can be traced back to an advertisement in the Boston Gazette of 20 March, 1728 for short hand training (Holmberg, 1986). However, it was after the introduction of the penny post in the United Kingdom in 1940s that the most widely known use of distance education came to light – Short hand training by Sir Isaac Pitman. Since then, distance education is being used in one form or other. University of South Africa started as a distance teaching university in 1946 received governmental decree in 1962, and can be termed as the first university level distance teaching university, though in USA, UK and Germany distance teaching was prevalent at the college level and through private correspondence schools. In India, the University of Delhi started a correspondence school in 1962. Distance education received a real boost with the establishment of the Open University, United Kingdom in 1969 and now we have about 60 open universities in the world with 15 in India alone.

In the above paragraph, we have come across three important concepts that are interrelated – distance education, correspondence education and open education. In this section, we will clarify the use of these concepts.

Distance Education

Before we proceed, it is important to clarify the terms used:

- **‘Correspondence Education’** refers to the mode of delivery of learning materials to learners. This system of education allows the learners to study at their place of work or living. Educational institution supply lessons to their learners through postal correspondence. All communications between the learner and the institution occur through postal correspondence. Many working adults who can not attend school/college/university education take advantage of this correspondence system of education. However, it suffers from many drawbacks. The courses and programmes offered are no different than what are available in the regular system. The learning materials are mostly in printed lecture notes in the form of textbook that hardly support individual learning. Admission policies and evaluation methods adopted by the correspondence teaching institution are similar to those of traditional institutions. In other words, the rigidities of the face-to-face system of education continues except that it allow the learners to learn outside the four walls of a classroom.

□ **‘Open Education’** refers to a system of teaching-learning that does not operate through traditional convention which are restrictive in nature – restrictions in terms of admission rules, number of seats, attendance, examination, course, duration, subject combination, modes of didactic communication, etc. So, open education is about removal of restrictions. According to Kember (2007), open education or open learning is to bring about ‘openness’ in the following four:

- Freedom of entry to a programme
- Freedom of learning space
- Freedom of study time and duration
- Freedom of choice of courses.

The educational institutions become open, if they relax or remove the restrictions and provide the above four ‘freedoms’ to the learners.

□ **‘Distance Education’** has been defined in different ways by different experts in the field. However, we will only present here the most widely accepted definition of distance education as propounded by Keegan (1980). He lists the main elements of distance education as:

- the quasi-permanent separation of teacher and learner throughout the length of the learning process;
- the influence of an educational organization both in the planning and preparation of learning materials and in the organization of support services;
- the use of technical media – print, audio-video, computer to unite teacher and learner to carry the educational transactions;
- the provision of two-way communication so that the student may benefit from or even initiate dialogue;
- the quasi-permanent absence of the learning group throughout the length of the learning process making possible occasional meetings for both didactic and socialization process; and
- the participation is an industrialized form of education, where teaching functions are carried out by different individuals.

Thus, distance education is a method of teaching and learning where content is primarily delivered through use of technical media; and teacher and learner may meet occasionally to solve academic, administrative, technical and personal problems. However, they communicate continuously through assignments and other technical devices; and the institution plans and organizes the entire process of student enrollment to pass out and provide support services as well as facilitate peer group interaction.

Based on the use of technical media, Taylor (2001) has categorized distance education institutions into five generations (Table 1): the correspondence model, multimedia model, tele-learning model, flexible learning model and intelligent flexible learning model. We can find different institutions at different generations, while one institution may also have different programmes operating at different generations. Any programme or institution that satisfies Keegan’s six elements is in the business of distance education.

Table 1: Five Generations of Distance Education

Generations: Models	Use of Media and Technologies
First Generation: The Correspondence Model	<ul style="list-style-type: none"> ☐ Print
Second Generation: The Multimedia Model	<ul style="list-style-type: none"> ☐ Print ☐ Audiotape ☐ Videotape ☐ Computer-based Learning ☐ Interactive Video disc
Third Generation: The Tele-learning Model	<ul style="list-style-type: none"> ☐ Audio-teleconferencing ☐ Video-teleconferencing ☐ Audio-graphics communication ☐ Broadcast TV ☐ Interactive Radio/Radio Phone-in
Fourth Generation: The Flexible Learning Model	<ul style="list-style-type: none"> ☐ Interactive Multimedia, Online ☐ Internet-based access to WWW resources ☐ Computer-mediated Communication
Fifth Generation: The Intelligent Flexible Learning Model	<ul style="list-style-type: none"> ☐ Interactive Multimedia, Online ☐ Internet-based access to WWW resources ☐ Computer-mediated Communication, using automated response systems ☐ Campus portal access to institutional processes and resources

Distance Education at IGNOU

Established in 1985 through an Act of Parliament, the Indira Gandhi National Open University (IGNOU) functions as an apex body for open learning and distance education in India and also offers various academic programmes leading to the award of certificates, diplomas and degrees. The University adopts a systematic process of programme and course development based on the principles of good practices in curriculum development and instructional design (see Fig. 1). Programmes and courses are offered as equivalent credit weight, where one credit is notional equivalent of 30 study hours including reading of study material, listening/watching of audio/video programmes, working on assignments, participation in counselling, teleconference, practical, etc. Thus, a programme of 30 credit requires 900 student study hours, and a course of 4 credits require 120 study hours. Studying and working with the printed study materials form a major component of the credit hours. IGNOU adopt a multimedia approach to teaching and learning, and can be said to be at 3rd generation level of Taylor’s generation framework for most of the programmes. So, IGNOU uses printed self-learning materials, audio and video programmes, radio and TV broadcasting, interactive radio counselling, teleconference including use of

Educational Satellite, face-to-face counselling, practicals and the World Wide Web. Student evaluation is done at three levels – through self-assessment in the printed self-learning materials, through assignments (tutor marked and computer marked), and final term-end examination. In the overall teaching learning process the printed material is considered as the master medium, that is supported by other technologies.

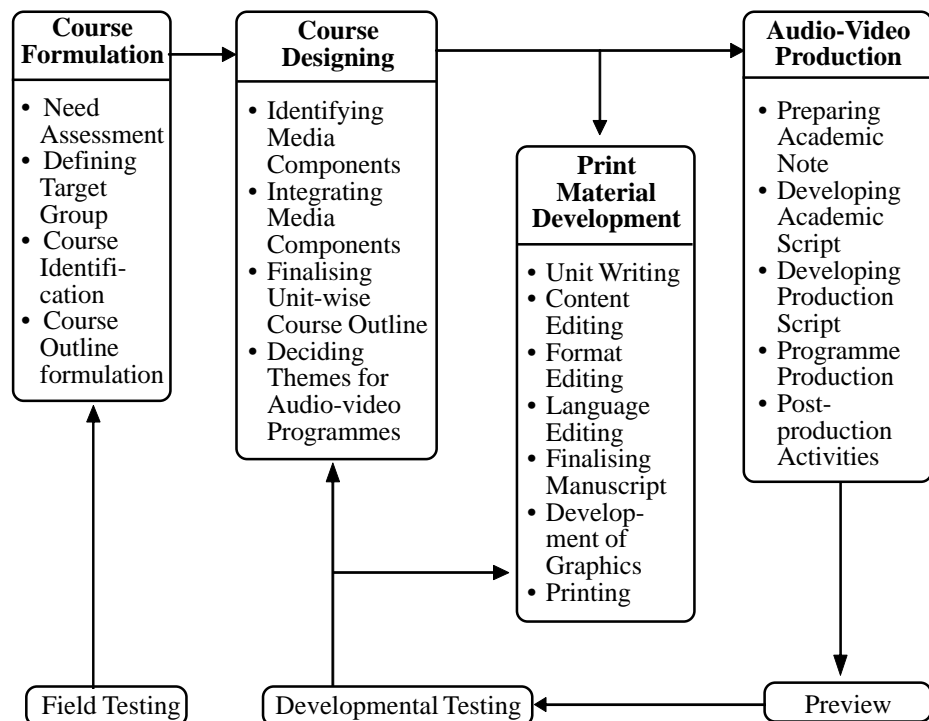


Fig. 1: Course Development Process at IGNOU

Summary

In this section, we looked at emergence of distance education from the correspondence model to the latest intelligent flexible learning model. In the process, we analyzed terms like correspondence, open and distance education to identify the differences. While correspondence education is all about the use of a single media (print) and single mode of delivery (postal), open education is a philosophical approach where rigidities of the face-to-face system are reduced. Openness in terms of freedom of entry, freedom of choice of courses, freedom of study time and duration, and freedom of learning spaces are key ingredients of open education. Distance education/correspondence education facilitates open education; as it enables the learner to study at his/her own pace and space. We also discussed Keegan's definition of distance education. In the generation of distance education correspondence is the first generation, and thus distance is a higher evolved form of teaching-learning. We also discussed in brief the distance education practices at IGNOU, where course development follows a rigorous and systematic process, and self-learning print materials are the primary medium of teaching-learning that are supported by other media such as audio-video, radio/TV and teleconference.

Characteristics of Distance Learners



Introduction

The Indira Gandhi National Open University (IGNOU) adopts a learner-centred approach to its programmes on offer. All programmes and courses are designed keeping the target group in mind, and thus, the course-writers of IGNOU need to understand the generic and specific characteristics of the target group. In terms of age group, most students of IGNOU are at least 20 years old, and most at the bachelors degree programme have 12 years of schooling. Therefore, learners at IGNOU are considered to be adults, and so courses have to be designed according to the principles of adult learning. The course writers, therefore, should know the basics of the characteristics of distance adult learners.

Adult Learning

The concept of 'andragogy' is known as the art and science of how adults learn. According to Knowles (1970) there are four basic premises about the characteristics of adult learning based on the concept of 'maturity'. As an individual matures, 1) his/her self-concept moves from one of being a dependent to one who is 'self-directed'; 2) he/she accumulates a reservoir of experience that becomes a resource for learning; 3) his/her readiness to learn increasingly becomes oriented towards his/her social developmental roles; and 4) his/her orientation towards learning change from subject-centred approach to one of problem-centred approach. Based on these, we can formulate some guiding principles:

- Adults need to establish their learning needs; and therefore the learning materials provided to them must explicitly state how it will help them to fulfil those needs.
- Adults are self-directed learners and take responsibilities for their own learning; therefore, the learning materials must provide scope to learn at their own pace and time.
- Adult learners have reservoir of experience, and their orientation to learning is towards problem-based learning; thus, the learning materials should provide opportunities for authentic learning experiences where they can relate to their previous experiences.
- Adults learn best when they are ready to learn; therefore the readiness to learn be captured in distance learning by providing short capsules of lessons. Adults are busy individuals, get less time for studies and when they decide to study, the time available is also short. Thus, the lessons be divided into small chunks.
- Adults learn well, when the course is of immediate relevance; therefore,

they should have option in the choice of courses and the organization of curriculum be more of problem-centred and establish relevance to future/ immediate use of the new learning.

Distance Learners

Understanding the distance learners is important to design the learning materials and support services that are suitable to their learning styles, level of knowledge, language comprehension, ability to use technology, etc. The learner profile of IGNOU would reveal that they are heterogeneous adult learners. They come with diverse backgrounds, demography, disparities and motives. Distance learners at IGNOU usually have the following characteristics:

- They are adults, having family and job responsibilities;
- They join a programme with a purpose;
- They are both young and old;
- They are from both the sexes;
- They are both employed and unemployed;
- They are of different marital status;
- They have less time to study.

Dighe (2002) listed six categories of information that we may need to understand about the learners:

Demographic factors:

- What age group?
- What sex, marital status?
- What occupation (if any)?
- What educational background?
- What income background?

Motivation factors:

- Why do they want to learn?
- What are their aspirations?
- What are their hopes and expectations?
- How would the programme relate to their lives and their work?

Learning factors:

- What do they want to learn?
- What are their aspirations?
- What are their hopes and expectations?
- How would the programme relate to their lives and their work?

Learning factors:

- What learning styles do they have?
- What learning skills do they have?

Subject background

- What knowledge and skills do they already have in their subject?
- How do they fact about the programme?
- What personal interests and experiences do they have that could be relevant?

Resource factors

- What, where and how will they be learning?
- Who will be paying their fees and expenses?
- How much time will they have for the programme?
- What access do they have to media facilities?
- What access will they have to human support – counsellors and other learners?

The available information about the learners, should be utilized in course design and development. Some examples are given below:

The prospective learners are:	So, the course must:
□ Poor in understanding English	□ Be available in the language they are comfortable; or the level of language used should be at lower level of readability index
□ Mainly male with significant number of female	□ Use non-exist language for communication, and provide examples that address both sexes. Give illustration with female in picture
□ Having considerable experience in the field/subject	□ Use a lot of activities/examples to appeal to their experience
□ Busy and have less time for study	□ Use the ‘must do’ knowledge and skill components in the units/ lessons; cover title of ‘should do’ and nothing of ‘nice to do’
□ Not skilled in learning from media	□ Avoid use of more media, and provide training on learning skills
□ Returning to study after a gap of 5-10 years	□ Provide enough guidance in the study materials to develop confidence

Source: Mishra (2007)

As a course-writer, you need to think about the target group, their characteristics and needs to focus and direct your writings toward them. You will be told about these in a meeting for course writers. If you have not attended any course writer’s meeting, you may have to use your expertise to draw some conclusion about the target group, using the questions given in this section. Thinking about the learners will make your writing more lively and dynamic.

3

Self-Learning Materials: Characteristics and Components

Introduction

Distance learners have neither regular classrooms nor teachers as in the conventional system to create an environment for teaching-learning. In the absence of such an environment teaching-learning in the distance education system takes place through self-learning materials, assignments, audio-video programmes, tele-conference, counselling, tutoring, etc. Distance education institution plays a key role in supporting the distance learner in planning and managing the design and development of the learning materials and delivery mechanism. Many distance education institutions use self-learning materials as the main medium of instruction, supplemented/complemented by other media. The same is the case with the IGNOU, where self learning materials play the role of distance teacher. The teacher is built into the learning material, that helps to perform various tasks a classroom teacher does, such as presenting the content, creating interaction, motivating, etc.

Difference between Self-Learning Materials (SLMs) and Textbooks

Before we discuss more about self-learning materials, let us briefly identify the differences between text-books and self-learning materials. Table 2 provides the differences between the two.

Table 2: SLM Vs. Textbooks

Textbooks	Self-Learning Materials
<input type="checkbox"/> Written for wider market	<input type="checkbox"/> Written for specific target group in view
<input type="checkbox"/> More teacher and subject oriented	<input type="checkbox"/> Fully learner centred
<input type="checkbox"/> Structure and objectives are not always mentioned	<input type="checkbox"/> Structure and objectives are mentioned always to help learners
<input type="checkbox"/> Learner needs support to understand the content	<input type="checkbox"/> Learner understands the content on his/her own without further support
<input type="checkbox"/> Self check questions are not given within the body of the text	<input type="checkbox"/> Self check questions are an integral part of all SLMs
<input type="checkbox"/> Language used is formal and impersonal	<input type="checkbox"/> Language used is informal, simple and personal

Self-learning materials (SLMs) are presented in such a way so as to help distance learners learn independently and effectively. SLM carries out all the functions of a teacher, like motivating, encouraging, explaining, provoking, assessing, providing feedback etc.

Characteristics of Self-Learning Materials (SLMs)

As explained above, SLMs differ from text book, or an article of a journal. Textbook is closer to reference materials, whereas articles in journal are means of communication or exchange of ideas among equals in the discipline/ profession. SLMs are learner centred and prepared for a specific group and tools for learning. The major characteristics of SLMs are as follows:

□ Self-explanatory

The learning material is presented in simple, conceptually clear manner so that the distance learners learn on their own. Thus, SLMs facilitate self-learning on the part of learner, and no external mediation is required in principle.

□ Self-contained

The material is generally sufficient to the topic under presentation, so that distance learners need not search for additional material to understand the topic and face examination. This care has to be taken by the planners of the programme and the course writer concerned. Otherwise, the distance learner will be at disadvantage in searching for material and not able to find the same within his/her reach.

□ Self-directed

All the functions performed by a teacher in the classroom – like teaching, guiding, motivating, instructing etc., have to be done by SLMs for distance learners. Thus, the material should direct the complete teaching-learning process with the help of explanations; illustrations, activities etc.

□ Self-motivating

Distance learners and teachers are separated by physical distance and the learning materials are the main source of motivation. SLMs should elicit curiosity, encourage, raise issues and relate knowledge to local situations and make the learning process productive, meaningful and joyful.

□ Self-evaluating

In the absence of a teacher in front of distance learner, self-assessment questions, activities, check your progress questions and feedback through them given in the SLMs provide the learners the scope to assess their progress, reinforce learning, and encourage them for further learning. Therefore, the learning materials should provide for self-evaluation and feedback for both correct and incorrect responses of the learners.

Thus, self-learning materials have to be prepared in such a way that the learners interact with the material and learn better. This characteristic of the SLMs is known as 'learning activeness'.

Various access devices in the SLM unit like structure, objectives, introduction, etc. help the learners to access the material appropriately. While interacting with the unit, learners note down the points, relate the matter to earlier knowledge, apply the concept to a new situation, complete self-assessment question exercises, and write assignment responses. A SLM unit which creates provisions to the learner to do all these activities is known as 'learner active' and pedagogically useful.

SLMs have to cater to diverse/heterogeneous learners enrolled for the programmes. Now the question that arises in front of the course writer is: whom to address the material while writing – slow, average or above average learner? As a course writer we have to address the material to average learner, with hints to below average learner to cope with while providing further readings to bright or above average learners.

SLMs at IGNOU are produced, after thorough planning and designing under the guidance of an expert committee consisting of experts from various institutions and the concerned faculty and instructional designers from IGNOU. Hence the material developed by IGNOU are in demand not only from distance learners but also from general public and students from conventional institutions.

Academic Programmes and Components

Before we discuss the details of a self-learning materials unit and the various components of it, you should have broad understanding of various terms like – a programme, a course, a block and a unit and their relationship with each other, so that you would be in a better position to write effective self-learning materials.

As explained earlier, the main characteristics of SLMs are incorporated with the help of many components, which are explained in this part. Let us discuss these components and their functions in the learning process. Each topic/unit of SLMs presented in a course start with a structure. Before we explain the various components of a unit, let us discuss the relationship between a unit and other parts of the programme. This is presented in a diagrammatic form in Fig. 2.

At IGNOU a Programme (P) has few Courses (C). Each course consists of 4 or 5 Blocks (B). A booklet is known as a block and represents a main theme related to the course concerned. Each block has 4 or 5 units/topics, dealing with inter-related sub-themes/sub-topics. Thus a distance learner receives a bundle of blocks or booklets related to the programme.

Components of a Unit

With that broad understanding about the programme and its parts, let us discuss the components of a unit. Usually each self-learning unit outline also known as unit structure looks like the one given in Fig. 3. This is also known as 'concept map'. Usually a course writer prepares more than one concept map on the unit before actual writing and compare their usefulness from the learner point of view and facilitation of learning.

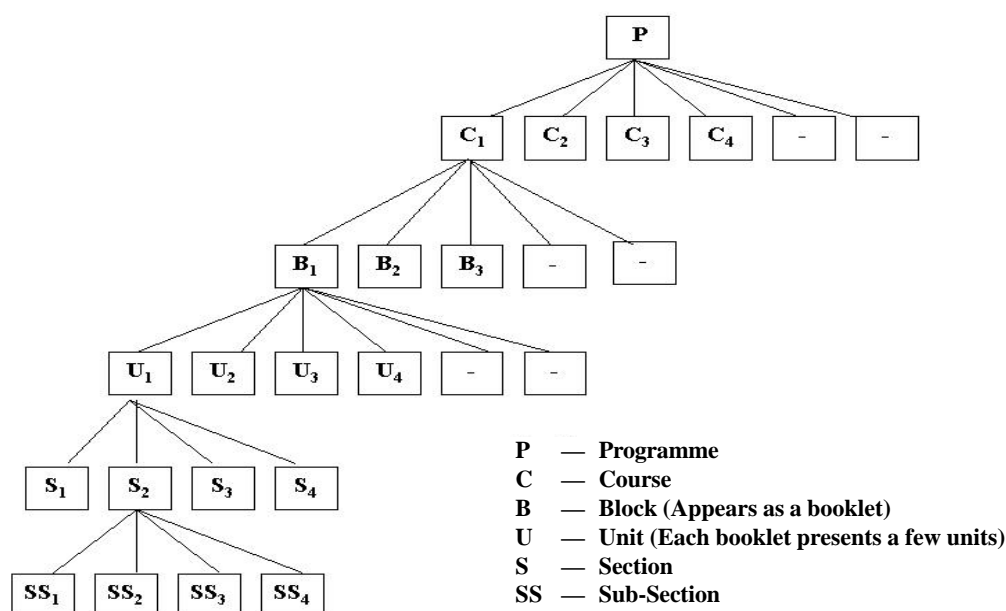


Fig. 2: Hierarchical Linkage of Parts of SLM

UNIT 1 COURSE DESIGN

Structure

- 1.1 Introduction
- 1.2 Objectives
- 1.3 Developing a Curriculum
 - 1.3.1 Teaching the hidden curriculum
 - 1.3.2 The nature of the students
 - 1.3.3 National Considerations
 - 1.3.4 Content and methods
- 1.4 Assessing Educational Needs
 - 1.4.1 The characteristics of adult learners
 - 1.4.2 Assessment of specific needs
- 1.5 The process of Curriculum Planning
- 1.6 The Systems Approach to Course Planning
 - 1.6.1 Educational needs
 - 1.6.2 Defining objectives
 - 1.6.3 Resources and constraints
 - 1.6.4 Selection criteria
 - 1.6.5 Alternative methods of meeting objectives
 - 1.6.6 Alternative subject matter
 - 1.6.7 Choice of method
 - 1.6.8 Development, feedback and evaluation
- 1.7 Making a Course Outline
- 1.8 Problems in Course Planning
- 1.9 Let us Sum Up
- 1.10 Glossary
- 1.11 SAQs-Possible/Model answers
- 1.12 Unit End Questions
- 1.13 Suggested/Further Readings

Fig. 3: Example of a IGNOU Unit Structure

Each unit has three parts — beginning of the unit, main body of the unit and ending, which have been explained in the following pages.

Beginning of the Unit

Each unit is represented with a number and a title as in Fig. 3. The unit number is '1' which indicates this is the first unit of the block concerned and title is 'Course Design'. Title also provides broad hint to the learner about the contents covered in the unit. Besides the unit number and title the beginning of the unit has three components namely, Structure, Introduction, and Objectives.

Structure

Structure of the unit provides the main ideas, sub-ideas under each main idea covered on the topic at one glance. This helps the learner to assess the familiarity with contents (based on prior learning) and pace their learning from the unit accordingly. See Fig. 3 for illustration.

Let us discuss the relation/logical linkages within the contents covered in the unit under various sections and sub-sections. This would help the learner to have access to the desired content matter of the unit without going through all the pages. To facilitate clarity, we used numbering for each section and sub-section. Let us take the above example for explanation – '1.1', '1.2', '1.3' indicate a section each. '1' in all the cases indicates the unit number (i.e. this is the first unit of a particular block), '.1', '.2', '.3' indicates the section covered. Let us further analyse the section 1.3 i.e. third section in the above example is further divided into three sub-sections, each one indicated by 1.3.1, 1.3.2, 1.3.3. Here 1.3.1 is the first sub-section, 1.3.2 the second sub-section, 1.3.3 third sub-section of the third section of the unit.

Introduction

Introduction is usually the first section of a unit. Introduction helps to understand the content discussed in the particular unit and also explains its relation and linkage with other units of the block/course. Wherever it is necessary, introduction also guides the learner to do or follow certain activities, to grasp the matter effectively. A good introduction to the unit is not a mere introduction of the content, as it covers three important parts: structural linkages with previous learning (if any), thematic description of the content and its relevance; and study guide. A study guide is the self-direction component of the learning material that helps the learners to become independent learners.

Objectives

Each unit has a few learning objectives, listed in the beginning. For distance learners who are studying on their own with the help of study materials, direction/guidance related to what exactly they will be getting from each unit is very essential for learning. This is precisely the purpose of giving objectives in each unit, which provide clarity and a direction before a learner enters into content sections and sub-sections. Objectives further help learners in assessing their own performance. This would be possible when learners answer the activities/SAQs/CYPs etc. given in the material. Our attempt usually is to relate each objective with one or two SAQs/CYPs given. Thus, when a learner answers them and checks those answers with possible ones given at the end of the unit, s/he would be in a position to assess her/his studies/performance and move accordingly from section to section and unit to unit. Thus, objectives play a

crucial role in guiding and assessing learners' progress in studies. In some of the programmes, objectives are named as 'learning outcomes', but the purpose remains the same. The objectives are written in behavioural terms and includes three components: action verbs, performance standards and conditions of performance. A list of action verbs for use in writing objectives are given in **Appendix-A**. An example of the use of objectives in a unit are given in Fig. 4.

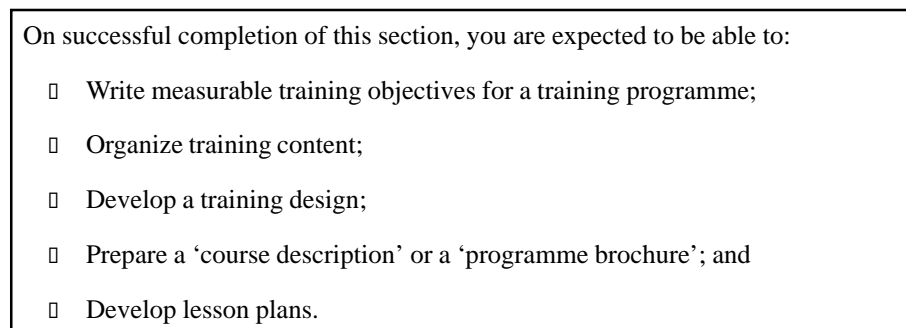


Fig. 4: Example of Objective

Main Body of the Unit

The main body of a unit starts with content section and covers all sections and sub-sections of the content. Let us take the example in Fig. 3 to analyse this — main body starts with 1.3 i.e. first content section covering all sections and sub-sections up to 1.8 i.e. last section of the content.

Each section presents at least one main idea/point and sub-sections under that explain new points related to that, and self-assessment questions (SAQ)/check your progress (CYP) related to those points/idea. In some of the units, exercises and/or activities, which would help the learner to practice/apply the concepts are also used. In sciences, computers and technology related topics, you may find activities, which would help the learner to practice/apply the knowledge gained through the material. Thus, activities are little longer and open ended (require few minutes to work on); as such for certain activities model answers are not given/needed; whereas SAQs/CYPs are brief which require 2-3 minutes for writing a 40-60 words answer and possible/model answers are given for all of them at the end of the unit. The SAQs/CYPs are preferably given in objective question form so that immediate feedback can be given.

In order to explain the content you may like to use figures/diagrams/tables/flow diagrams and relevant examples while writing your lesson. A diagram or a table or a chart explains better than a page or two, write up can do, hence, all these are included in the presentation of the matter effectively and to make it simpler and easier for the learner. The objective of content presentation in section and sub-section is to provide the learning content in small chunks with as many self-evaluating opportunities embedded within the text. Usually each unit of a course (around 5000-6000 words) require approximately 6-8 hours of study. Chunking helps the learner to complete a unit in about 2/4 sittings of 2-3 study hours.

Ending of the Unit

Ending of a unit consists of summary, glossary, SAQs – possible/model answers and unit end questions.

Summary

Summary of the unit is also termed as 'Let Us Sum Up' in some of the programmes which helps to recall all the important points discussed in the unit and thus motivates for further learning. Summary enable the learners to re-capitulate the main points of the unit. A good summary is not an abstract or conclusion, but a learning tool to trigger lessons learnt, without much external support. Usually, summary is brief and it is presented either point wise or in a brief paragraph.

Glossary

While going through the material, learners may come across difficult words, terms, new concepts etc., without which they will not be able to understand the particular sentence, definition, concept etc. Such difficult words, terms, concepts are explained in the glossary section at the end of the unit. You need to list such words and provide a brief explanation/definition of those. At the printing stage, such words/phrases are also made bold to let the learners know that such words are important to the basic understanding of the topic.

SAQs/CYPs – Possible/Model answers

As we explained earlier the role of SAQs/CYPs in self-assessment and learning; the answers the learners write for SAQs/CYPs need to be checked with the possible/model answers, so that they can assess and observe their performance. The possible/model answers need not tally with word to word. If both answers broadly match, that would be good enough for self-assessment. When the nature of SAQ is objective (multiple choice, fill in the blanks, matching, sequencing, True/False etc.) type, there is also a need to provide feedback for both correct and incorrect responses. This part of the unit plays the role of remedial learning, and it is important to provide feedback to explain why a student is correct or incorrect in the response to SAQ.

Unit-end Questions

In some of the courses of IGNOU, you may come across unit-end questions. These are questions of such type which they may face in assignments/final examinations. The purpose of these questions is to make the students familiar with sample questions.

Suggested/Further Readings

As we explained in the beginning, each unit is self-contained on a particular topic/theme; however if the learners want to read more on a particular topic, they are advised to go to a study centre/regional centre library or nearby library of any other institution and look for the books suggested under this head at the end of the unit. Further reading is a tool for helping extra learning by those students who are more inquisitive to learn more. While listing the sources, it is important to provide adequate information to trace the documents. Please follow the guidelines given in Section 8 for listing of references.

Let Us Sum Up

In this section, we have explained the characteristics of SLMs, and various components of SLMs and their roles in the process of learning at a distance. Once you know the role of a component, you would be in a position to write effective self-learning materials for distance learners.

Checklist for Unit Writing



Introduction

Print material is utilized in distance education courses as this form of technology is the cheapest and most accessible to students in our country. It is also the only form of technology that can reach a wide range of learners and especially those in the very remote areas. Print medium remains by far the most widely used medium for tertiary level distance education. The printed learning materials include many textual components and design features that we have discussed in Section 3. Various research studies have been conducted on how the presentation of texts (both content and format) for distance education could be improved by seeking opinion from theoreticians, expert practitioners, psychologists, distance learners and other users so that the texts could be effective for student learning.

You may note that by its very nature, distance education print materials are subject to re-drafting and updating with the aim of improving their usability and textual design. We have different types of tools for evaluating the quality of print medium. Many tools for evaluating this medium include attitude scale, rating scale, checklists (an example of a checklist for evaluating the self-learning print materials is provided on page 16), questionnaires, interview schedules and tests.

It is essential to know what questions to be asked during evaluation to ensure that the print materials will serve the purpose well. While designing learning materials of your own or adapting packages that are already available, it is important to keep in mind a few points such as the ways in which the materials are intended to function, and how students will react to them. We have presented below a few questions which can be applied to judge the values of self-learning print materials. These questions can be clustered under major sub-headings as follows:

- Structure and layout
- Access devices
- Objectives or statements of intended learning outcomes
- Introduction
- The content material
- Diagrams, charts, tables, graphs, illustrations etc.
- Self-assessment questions, in-text questions and activities
- Response to self-assessment questions
- Summaries or reviews

While evaluating the self-learning print materials you as the course writer may refer to the following questions to know the expected effect (what ought to be learned by a distance learner).

A checklist for evaluating the self-learning print materials

- *Structure and layout*
 1. Is the material visually attractive?
 2. Does the material include the requisite features of self-learning, such as self-directed, self-motivating, self-contained, self-explanatory, and self-evaluating?
 3. Is there sufficient blank/white space to jot down teaching points or notes, answer self-assessment questions posed by the learning materials and do calculations and exercises?
 4. Is it easy for learners to find their way backwards and forwards with the help of icons and signposts?
- *Access devices*
 1. Is the title clear?
 2. Is the concept map/content structure appropriate?
 3. Is the content easily accessible?
 4. Are all the components of self-learning materials embedded in the text?
- *Objectives of statements of intended learning outcomes*
 1. Are the objectives stated in behavioural and measurable terms?
 2. Is there clear indication of any pre-requisite knowledge or skills?
 3. Do the objectives cover the cognitive, affective and psycho-motor domains?
- *Introduction*
 1. Is each unit/section introduced in an interesting and stimulating way?
 2. Are the three essential components (thematic, structural and study guide) available at the beginning?
- *Diagrams, charts, tables, graphs and illustrations*
 1. Is each diagram/chart/table/graph self-explanatory?
 2. Do the learners know what to do with each illustration?
 3. 'A sketch can be more useful than 1000 words.' Is the material sufficiently illustrated with the help of pictures?
- *Content material*
 1. Is it readable, fluent, simple and unambiguous?
 2. Is the content relevant and adequate?
 3. Is it presented in personalized style using words such as 'I', 'you', 'we' etc.
 4. Is the material broken up into manageable chunks?
 5. Is the material prepared for all types of learners (good/average/below average) and as per the needs of these learners?
 6. Will the learners enjoy reading the text?
- *Summary or review*
 1. Are there clear and useful summaries or reviews?
 2. Do the summaries or reviews provide useful ways for students to revise the material quickly and frequently?

While evaluating the self-learning print materials, the following criteria should also be considered. They are:

- Appropriate for the level of the target group
- Pertinent to the curriculum and the objectives of the programme
- Content adequacy and accuracy
- Appropriate SLM format (self contained, self motivated, etc.)
- Acceptable literacy style
- Cost-effective

As a unit writer, you are expected to check the above list and be satisfied that you have tried to include as many features as desired and useful to the learners.

5

Text Presentation

Introduction

While you are expected to follow the characteristics of self-learning materials in writing the units assigned to you, it is important also to follow some guidelines on text presentation to reduce the editing work required on your writing. Text presentation includes word usage, quotation, spellings, capitalization and punctuation rules, use of italics, bullets, dash, hyphen etc. in the text. Some of these guidelines in this section may look trivial, but are important, not only to make your writing readable but also to help the University to reduce the time taken in course development.

Word Usage

Words are basic building blocks of good self-learning materials. Their appropriate use in the text is important for correct meaning-making. In the preparation of self-learning materials, we use a number of guidelines that we will discuss here. The basic guideline in self-learning material preparation is to use first or second person forms of address (I, you, we) to make the learning material more conversational. Also it is important to use a gender-neutral or gender-sensitive language within the text. So, when it is required to refer to one gender it is necessary that both are mentioned as “he or she” or “him or her”. Use of generic titles such as ‘Chairman’ may be replaced by Chair or Chairperson.

There are many words that create problems while using. Particularly, due to the use of the word processor, such words skip our attention, making different meaning. A sample list of such words along with their appropriate use are given in **Appendix-C**. Some examples are:

Two most commonly misused words are *that* and *which*. Though they are not interchangeable, we often find such usage. *That* is best reserved for essential clauses, while *which* is appropriate for non essential clauses. Simply stated, if a comma can be inserted before the word *that* or *which*, the word should be *which*. If a comma would not be used, the word to use is *that*.

e.g.

Understanding of the characteristics of self-learning materials, *which* is explained in Section 3, is important in development of good lessons for the distance learners.

Understanding of the characteristics of SLM *that* are discussed in Section 3 is important for development of good lessons for the distance learners.

Shall, should, may and can

- *Shall* is used to indicate mandatory conditions, from which no deviation is permitted (required to).
- *Should* is used to indicate a recommended action or preferred path (recommended that).
- *May* is used to indicate a course of action permissible amongst many others (permitted to).
- *Can* is used as a statement of possibility or capability (is able to).

Quotation Marks

Use of quotation marks in the text becomes complicated because of the availability of two types of inverted commas—single inverted comma (‘ ’) and double inverted comma (“ ”). Though there are variations in UK and US writing styles, we suggest you to use double inverted commas for use of quoted materials from another source. If the quotation is more than 30 words, do give the reference in author, data style with page number, e.g. (Mishra, 2007: p.67).

Remember, while using quotation, the full stop falls inside the quotation mark, if the material quoted is a complete sentence. Within the quotation marked text, do not add any extraneous text or punctuation or formatting. If you use any formatting feature for emphasis, do indicate at the end of the quotation mark. Use single inverted comma for highlighting important sentence, phrase or pronoun as pointer for the learners.

Spellings

At IGNOU, we prefer the use of British spellings for most words. However, while using words with ‘ize’ or ‘ise’ as in ‘organized’ or ‘organised’ there is no fixed rule, though we suggest you to be consistent in the spelling used. It is always a good practice to spell check while using a word processor.

Capitalization

1. The first word of a sentence should always be capitalized.
2. Proper nouns can take initial capital e.g. Ramesh.
3. Geographical and political designations and official titles use initial capital, e.g. World Intellectual Property Organization, the Head of the Department.
4. Do not capitalize academic subject, e.g. history, biology, mathematics, except for languages, e.g. English, Chinese, etc.
5. First word after a colon should be capitalized, only if it is a new sentence.

Punctuation, Italics, Bullets, Hyphen

1. Do not use a comma after i.e. and e.g.
2. Use single inverted comma for highlighting and double inverted comma for quotation.
3. Use italics for title of a publication.
4. Use italics for scientific terms and keywords.

5. Use italics for emphasis, foreign words and Indian words used in English.
6. Use simple round bullets where the items appearing are of equal importance.
7. Use numbered lists for showing priority and order.
8. Use full stop at the end of a bullet point, if it is a complete sentence.
9. If the bullets are in continuation to a stem, use semicolon after each sentence, except the last one where it will be a full stop.
10. Do not use a space before or after a hyphen or a slash.
11. A slash is used to indicate 'per' as in units of measurement (e.g. Rs. 5/kg) or to indicate 'or' as in Delhi/Hyderabad.
12. Hyphen is used in compound words such as 'step-by-step', 'middle-class', 'co-operate', 'self-learning', 'decision-maker', pre-test, post-test.
13. Two dash or em dash (—) is used to replace 'to' in number span e.g. 25-30 August. Em Dash is also used to replace comma, semicolon and parentheses,

e.g. Keep in mind—little learning is dangerous.

You do your work—I will get you coffee.

IGNOU—a pioneer in distance education—was established in 1985.

Figures, Tables, Graphs and Boxes



Introduction

In order to make the text lively, engaging and meaningful, we use tables and figures while writing learning materials. It has been said that “a picture is worth a thousand words”. Tables provide data in a nutshell. Line diagrams explain steps and processes. Thus, tables, figures and boxes make the learning materials visually attractive and help in the process of learning.

Figures

Figures include graphs/charts, photographs and diagrams. Sometimes, they are referred as illustrations. In self-learning materials, they perform the following functions:

- enhance interest and motivation;
- attract and direct attention;
- facilitate learning by explaining or showing something that is difficult to convey solely in words;
- enhance the learning of less-able readers; and
- facilitate long-term recall (Hartley, 1994).

Illustration can be of three types: realistic, analogic and organizational. An actual photograph or a drawing can be realistic, while the use of traffic symbol is analogic, and flowcharts, graphs and charts are organizational in nature. While writing self-learning material, you need to decide which type of illustration is much useful for learning. Research by Dwyer (1978) concludes that too much realism or too little realism in the figures may affect achievement adversely. Use of colour in printed text and figures help both instruction and motivation. However, using additional colour is costly and, therefore, use of colour should not be indiscriminate.

For figures in the text, the following suggestions may be followed:

- Provide a legible copy of the diagram, preferably in a JPG/TIFF format in 300 dpi.
- Since the University pays for graphics separately, you may like to use professional help. Check out the payment norms for graphics.
- Indicate the actual place of the graphic in the text by writing //INSERT, Fig. 5.1 here//, where ‘5’ is the unit number and ‘1’ is the first figure in the unit.
- The figure should have an appropriate title caption placed below it.
- Illustrations should be appropriately labeled to depict various parts clearly.
- For step-wise photograph or diagram, give caption for each photograph/diagram.

- Use colour selectively, and prefer the use of half-tones.
- Give in text reference to the figures.

Tables

Tables may include numerical, texts or notations/symbols like in the periodic table. From the learner's point of view, table helps in comprehension at a glance. Follow the following guidelines for preparation of tables:

- Prepare a table with minimum of horizontal rules; usually three—one at top, one below the column learning, and one at foot.
- Do not use vertical rules.
- Give a title/caption to the table, placed at the top.
- Number the table as 5.1, 5.2, 5.3 etc. where “5” is the unit number and “1”, “2”, “3” are occurrence of table within unit 5.
- Use 8 pt. font for matter within table.
- Avoid breaking tables in different pages. If it is unavoidable to break a table into the next page, repeat the column headings again, preceded by “Table 1: (continued)”.
- Indicate the position of the tables //INSERT Table 5.1 here// within the text.
- Give in-text reference to the table number to relate the contents of the table to the text.
- Do not refer to a table as ‘the following table’. Rather use ‘Table 4 depicts ...’.
- Place sources and notes immediately below the table.
- Organize the content of the table in a systematic pattern to help readers in recall.
- If there are more column and they can't fit into the page width, use the page in landscape mode.

Graphs

With the use of MS-Excel and other computational software, preparation of graphs and chart have become easier. There are various types of graphs and these should be used according to there appropriate usefulness. A line graph is most useful to show trends analysis, whereas a histogram is useful to show quantitative differences. A pie-chart is useful, if you want to show an overall Gestalt picture or percentage view. While preparing graphs the following guidelines may be followed:

- Number the graphs as figure and indicate their placement.
- Follow the suggestion of figures.

Boxes

Boxes are used to highlight information given in the unit. It may be repeated in the margin or a section of the text can be highlighted in a box. While using box, it is useful to use different font and give a 30% screen/half tone to provide different look. Number the box sequentially like table and give appropriate caption on top.

Abbreviations, Numbers and Mathematical Symbols



Introduction

We use abbreviations in almost all situations and types of learning materials, be it in social sciences or in engineering and technology. Use of numbers is common in all disciplines, though their use in formulae and symbols brings in special meaning. The use of mathematical formulae and symbols is common in subjects like mathematics, statistics, economics and other subjects in science and technology. In this section, we provide guidelines to use these in self-learning materials.

Abbreviations

Abbreviation is a shortened form of a written word or phrase used in place of the whole. After abbreviating the initial letters of a phrase or pronoun, if a word is formed then it is called an *acronym*. The following guidelines may be followed for use of abbreviations within the self-learning material:

- Abbreviation should always be explained in full for the first occurrence in the unit, with the abbreviation in brackets, e.g. Indira Gandhi National Open University (IGNOU), and thereafter the abbreviation be used throughout the text.
- Some commonly known abbreviations such as HIV/AIDS, UNESCO, etc. need not be expanded.
- Abbreviations should be of common usage. Do not insert abbreviations of your own.
- Periods should not be used for abbreviation, e.g. IGNOU, not I.G.N.O.U. However, some abbreviations do require period such as i.e. and e.g.
- Do not begin a sentence with an abbreviation or acronym.
- A list of commonly used abbreviations are given in **Appendix-B**.

Numbers

- Single digit numbers should be written in full (e.g. two persons instead of 2 persons).
- Use 'per cent' in place of % within text.
- Do not begin a sentence with number.
- While writing specific date follow 'date month year' pattern, e.g. 19 Nov. 1985.

- Do not write 'lakh', 'crore', etc. instead write one 100 thousand, one million, ten million, etc.
- Use Arabic numerals for figures and tables. Roman numerals are used in numbered lists, historical events, and for expression of successive political leaders with identical name. e.g. Pope Benedict XVI.
- Show decimal by use of a point not comma.
- While expressing currencies, no space separates the symbol and the figures, e.g. Rs.5000/-, US\$50. If the audience of the course is international, it is useful to provide a cross-reference of dollar value, if the currency is non-US, and also indicate the conversion rate.

Mathematical Symbols and Formulae

- Check the symbols and formulae carefully.
- Use the formula function of the word processor.
- Use international system of units (SI) to express scientific units. Some SI units are given in **Appendix-D**.
- To present fractions in the line of text, use a slash, e.g. 31/37.
- For equation, prefer to start in a new line.
- Clearly use the letter O and numeral 0 (Zero), and multiplication sign \times and letter x.
- When x is used as a variable, make it italics.
- Equations should be separately numbered, e.g. Equation (1)
- Reference to equation be specific within text, e.g. *see* Equation (5).
- While typing equation, the general rules are to
 - Use italics for quantity symbols (including symbols for physical constants), subscripts or superscripts, variables and indexes;
 - Use normal text for unit symbols, abbreviations, mathematical function, etc.
- Examples of function and operators set in upright text are given in **Appendix-D**.

References and Bibliography



Introduction

As self-learning materials are not research papers, we do not insist on lots of references and bibliography. But, as documentary information is presented in booklets, it is inevitable for academic reasons to cite other sources in our writing. Self-learning materials are meant for helping students to learn, and for that we try to build the teacher into the text. That does not reduce the importance of citations, as we borrow information from various sources to present facts, concepts and processes in a manner suitable for self-learning. Acknowledgment of the sources on which your writing is based also shows academic honesty and integrity as teachers. Source acknowledgment can be done in various ways: footnotes, references, bibliography and further readings. Each has separate meaning and functions:

- 'Footnote' is a note of reference, explanation, or comment usually placed below the text on a printed page. In self-learning materials we do not recommend the use of footnotes. Any note for explanation be included within the text, and references listed alphabetically at the end.
- 'Reference' is a source that is cited within the text, and must be placed at the end in an alphabetical sequence.
- 'Bibliography' is a list of books that may include references used in the text for preparing the self-learning materials. Thus, a bibliography includes related works on the topic. We do not expect all course-writers to provide a list of select bibliography on the unit. But, if you can, it is very useful to us.
- 'Further reading' is a list of documents that may or may not be cited in the text, but as teacher, you would highly recommend these books to be referred by the students for extra readings. We expect you to list 3-5 important books as recommended readings.

References/Bibliography/further reading lists are prepared in a systematic manner to identify the sources easily. There are various reference styles, such as the most widely used American Psychological Association (APA) format, the Chicago Manual of Styles, the American Sociological Association (ASA) format, the Modern Language Association (MLA) format, American Chemical Society (ACS) format, American Institute of Physics Style Manual and American Medical Association (AMA) format. One may use any of these depending on the discipline and familiarity. The most important issue in preparing references is uniformity, and therefore here we would suggest the formatting of reference for different types of documents. Providing complete information about documents used also helps in adhering to copyright and avoid plagiarism (see Section 9).

In-text References

When someone else's idea is paraphrased or we quote from another source, we provide in-text reference. In research papers, in-text references are also provided for informing about other similar work; review and criticism; acknowledgment of similar works; supporting a line of argument, etc. However, in the self-learning material, we are concerned about the content presentation and explanation of the same. In the process, if we use a source, it is necessary to provide in-text reference, which can be done in many ways:

- *Author and date cited in text*, e.g. In a 1980 article, Keegan articulated the definition of distance education.
- *Author not cited in text*, e.g. Distance education is a field of education and training within the discipline of education (Keegan, 1990).
- *Author cited in text*, e.g. Kuhn (1975) called it a 'paradigm', which consists of general theoretical assumptions and techniques for their applications.
- Direct quotation with name of author, e.g. Keegan (1990) stated that distance education is "a distinct field of educational research and training within the discipline of education" (p.7).
- *Direct imitation without name of author*, e.g. "For a discipline to be recognized as mature, research in its core domain of knowledge is highly necessary" (Mishra, 1998, p. 287).

For each of the in-text references given in the above examples, there shall be references at the end.

End-of-text Reference

Before we list the reference format of different types of document, let us list some generic guidelines:

- Give complete information of the document.
- Arrange the references alphabetically, followed by chronologically by year of publication (earliest to recent). If there are two or more publications by the same author in a year, distinguish these documents by a, b, c, along with the year, e.g. 2000a, 2000b.
- Page numbers should be provided when the reference is to a journal article or a chapter in an edited book.
- Use italics for the title of books and periodicals.
- When author is not known (anonymous) and for newspaper articles/ editorials, use the title of the publication for alphabetical ordering.
- For two author publications, use ", &" between two names, e.g. Garrison, R., & Anderson, T. (2001)...
- Give all the authors in reference up to six authors. When more than six, give the six in surname, forename style and add 'et al'.

Examples of reference of different types of documents are given below:

Book

Mishra, S. (2007). *Quality Assurance in Higher Education: An Introduction*. Bangalore: National Assessment and Accreditation Council.

Garrison, R.D., & Anderson, T. (2001). *E-Learning in the 21st Century: A Framework for Research and Practice*. London: RoutledgeFlamer.

Edited Book

Sharma, R.C., & Mishra, S. (2007). (Eds). *Cases on Global E-Learning Practices: Success and Pitfalls*. Hershey: Information Science Publishing.

Chapter in Edited Book

Fahy, P.J. (2005). Planning for multimedia learning. In S. Mishra & Ramesh C. Sharma (Eds.), *Interactive Multimedia in Education and Training*. (pp. 1-24). Hershey: IDEA Group publishing.

Journal Article

Mishra, S. (2002). A design framework for online learning environments. *British Journal of Educational Technology*, 33(4), 493-496.

Book Review

Mishra, S. (2007). Book Review: The Theory and Practice of Training. *Indian Journal of Open Learning*, 16(3), 275-277.

Newspaper Article (Author not specified)

Radio Mirchi is Mumbai's No. 1, Shows Survey. (2003, March 28). *The Times of India*, p. 13.

Newspaper Article (with author)

Gates, B. (2008, April 3). Education for the future. *Times of India*, p. 20.

Govt./Report of Corporate Body

Commonwealth Secretariat. (1991). *Microcomputers in School: Policy and Implementation Guidelines*. London: Commonwealth Secretariat.

IGNOU (1999). *Vice-Chancellor Report*. New Delhi: IGNOU.

Government of India (2006). *India: e-Readiness Assessment Report 2006*, New Delhi: Department of Information Technology, Ministry of Communication and Information Technology, Government of India.

Online Database

Bernard, R.M., Abrami, P.C., Lou, Y., Borokhovski, E., Wade, A., Wozney, L. et al (2004). How does distance education compare with classroom instruction? A meta-analysis of the empirical literature. *Review of Educational Research*, 74(3), 379-439. Retrieved April 7, 2008 from ProQuest Database.

E-Journal

Sharma, R., (2001). Online delivery of programmes: A case study of IGNOU. *International Review of Research in Open and Distance Learning*, 1(2). Retrieved May 19, 2004 from <http://www.irrodl.org/content/v1.2/ignou.html>

Online Document/Web page

Wheeler, D.A. (2003). *How to evaluate open source software/free software programs*. Retrieved August 19, 2004 from http://www.dwheeler.com/oss_fs_eval.html

Blog

Mishra, S. (2008, March 1). Six gowns of distance education, *TeachKnowLogist*. Retrieved April 17, 2008, from <http://teachknowlogist.blogspot.com/2008/03/six-gowns-of-distance-educator.html>

Mailing List

Sharma, R.C. (2003, June 16). Radio as the learning bridge, IFETS DISCUSS, Retrieved April 7, 2008 from http://ifets.ieee.orf/past_archives/archiv_100303_270603/0234.html

Email

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Copyright and Plagiarism



Introduction

'Copyright' and 'plagiarism' are two concepts capable of creating embarrassing moments in the life of a teacher, if not understood with clarity. Though it is expected that all of us understand these concepts, more often it is to the contrary. To some extent the reason is due to the legal nature of copyright, and the ethical nature of plagiarism. Both are subjects of interpretation. While 'fair dealing' provision of the Copyright Act allows a teacher in the classroom to use a copyright protected work, the same is not true for course materials written for distance teaching. Therefore, as a course writer, you must understand both copyright and plagiarism. At IGNOU, violation of copyright and plagiarism are treated as serious offense.

Copyright

It is a legal term, meaning the exclusive rights given to the creator of the original work to reproduce, translate, adapt, copy, perform, authorize, receive royalty and engage in any other economic benefits arising out of the work. The Copyright Act, 1957 protects the creator of the original work by making it illegal for others to use the original material without the creator's or owner's consent. When you agree to write a unit for IGNOU and submit the manuscript, it is assumed that you 'assign' the copyright to 'Indira Gandhi National Open University'. In lieu of this, you receive a token one time payment as fees. IGNOU automatically becomes the owner of the copyright for the units written by its employees as part of their service in accordance with the clause 17(c) of Copyright Act.

While you assign the copyright in favour of 'IGNOU', it is also believed that:

1. You are the actual author of the material;
2. You will be identified as the creator/author of the units;
3. The material supplied by you does not contain libelous, obscene, blasphemous, and negligent statements;
4. No part of the material has violated the existing copyright of others or already assigned by you;
5. No part of the material can be attributed as plagiarized;
6. You indemnify IGNOU for any liabilities or loss due to later identification of plagiarism or violation of copyright;
7. You agree to the content, language, and format editing of the material to make it suitable for distance learning;

8. You retain the moral rights to use the material in your own work and further create derivative works;
9. You also agree that the unit may be delivered in more than one format (print, audio, video, etc.); and
10. You assign the copyright for the period of the life of the course/ programme on offer by the university.

In order to be safe, we suggest you to consider the following guidelines:

1. While using materials from other resources, identify whether the same is under copyright, and also locate the owner of the copyright.
2. Copyright permission needs to be obtained, if you use:
 - a table figure, or a section from another source,
 - a map, illustration or a diagram published elsewhere,
 - a play excerpt,
 - a poem,
 - a photograph,
 - an article in journal magazine or newspaper,
 - a video footage,
 - a web site/web-page,
 - a computer programme
3. List the materials that need copyright permission, and inform the course coordinator to obtain rights.
4. Acknowledge all sources properly to enable identification and tracing of the source.
5. Avoid extensive quotation and non-relevant third-party materials.
6. Under 'fair dealing', the Copyright Act provides for the use of third-party materials for the purpose of research, criticism and review. Though the amount of material that can be quoted is not clear, it is left to the reasonable justification that you can give within the ambit of 'fair dealing'.

Plagiarism

In order to avoid copyright violations, it is important also to understand what constitutes plagiarism. In fact, plagiarism leads to violation of copyright. According to *Merriam Webster Collegiate Dictionary*, Plagiarism is "an act or instance of plagiarizing", and explains plagiarism as "to steal or pass off (the ideas or words of another) as one's own: use (another's production) without crediting the source, to commit literary theft: present as new and original an idea or product from an existing source". In other words, if you use some one else's idea and/or expression of words and fail to acknowledge the source, you indulge in plagiarism. It is a deliberate attempt to deceive readers by presenting other's work as one's own. In order to avoid plagiarism, it is worth while to follow these guidelines:

1. Acknowledge the source correctly according to an appropriate bibliographic style.
2. While using quote of another person, do not forget to put attribution/ acknowledgment, quotation marks and page numbers.
3. If you paraphrase someone's else idea, you still need to acknowledge the source. Otherwise, it can be treated also as plagiarism.

So, you can see how plagiarism and copyright are related concepts. While the former is related to *ethics* of acknowledgment of others' contribution in our logical thinking and contribution, copyright is *legal* that permits the creator of the work to engage in economic benefit.

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Submission of Units

Introduction

After you prepare the unit as per the guidelines given in this *Manual*, it is useful to submit it in a format that will not only save time for the university, but also reduce the efforts required on the part of the Course Coordinator. Though, various Course Coordinators in the University would follow their own practice and inform you about how to submit your finalized unit, the suggestions here are generic in nature. We categorize these guidelines into three parts: typographical formatting, learning design, and physical transmission.

Format of the Unit

- Use A4 size portrait layout for your manuscript.
- Type text in 12 pt. Times New Roman font and keep text left aligned. For Hindi and other vernacular languages use 2 pt bigger font size.
- Keep unit title area in 18/20 pt. Bold upper case Arial/Times New Roman. All section headings are in 16 pt. Bold upper case Arial/Times New Roman, while all sub-sections are in 14 pt. upper lower Arial/Times New Roman.
- Data/text on tables should be in 8 pt.
- Caption for tables and figures should be 10 pt bold upper lower case.
- Type text in 1.5 line spacing.
- Insert figures at the correct place within the text.

Learning Design

- Follow the check list for unit writing given in Section 4. See that your unit has most features and you are satisfied with its usability.
- Do a spell checking carefully to avoid ambiguous use of confusing words.
- Review the contents and the structure/outline to ensure that there is complete match and you are satisfied about the accuracy of all contents.
- Make yourself sure about copyright issue and plagiarism; no parts of the content violate copyright law and all resources are acknowledged properly.
- List sources/areas that require permission and provide contact address and email.

Physical Transmission of the Unit

- Save the file in MS-Word (.doc) format, and name it as follows:
e.g. Course #_Block#_Unit#.doc
Where # is respective number.

- Save the graphics in separate files, preferably in JPG/TIFF format in 300 or more dpi. The file name may follow the following naming convention:
e.g. Course#_Block#_Unit#_fig#.JPG or
Course#_Block#_Unit#_fig#.TIFF
- Email the files as attachment to the Course Coordinator. You may also send a CD by post along with a printed copy of the unit.
- While sending through email, make CC to yourself for a backup copy. Do not send floppy disks by post, please.
- While sending the CD and the printed copy of the unit by post, make it sure that you also send the following:
 - a completed signed bill for payment of the honorarium;
 - a signed copyright declaration form;
 - if you have prepared art work, and incurred word-processing cost, also include relevant bills.

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Action Verbs in Different Domains

Verbs in Cognitive Process Dimension

Remember	Understand	Apply	Analyze	Evaluate	Create
Define	Describe	Translate	Distinguish	Judge	Plan
List	Clarify	Apply	Analyze	Evaluate	Create
Recall	Paraphrase	Use	Differentiate	Select	Design
Name	Interpret	Execute	Organize	Check	Formulate
Tell	Demonstrate	Implement	Attribute	Critique	Suggest
Recognize	Illustrate	Do	Deconstruct	Criticize	Construct
Identify	Exemplify	Carry out		Measure	Produce
	Classify			Choose	Generate
	Categorize				Assemble
	Group				Arrange
	Summarize				
	Abstract				
	Generalize				
	Infer				
	Conclude				
	Extrapolate				
	Predict				
	Compare				
	Contrast				
	Match				
	Explain				

Source: Mishra (2004).

Verbs in Psychomotor Domain

Adapt	Disconnect	Measure	Select
Adjust	Dismantle	Mix	Separate
Administer	Display	Modify	Show
Assemble	Dissect	Move	Sort
Blend	Draw	Open	Start
Build	Fasten	Operate	Stop
Burn	Fill	Organize	Store
Calibrate	Fix	Place	Strike
Change	Formulate	Plant	Tally
Choose	Grind	Prepare	Transfer
Clean	Handle	Proceed	Turn
Collect	Harvest	Produce	Twist
Connect	Heat	Rearrange	Type
Construct	Isolate	Reduce	Use
Control	Knead	Repair	Vacate
Cut	Link	Replace	Wash
Design	Load	Report	Weigh
Detect	Loosen	Revise	Wipe
Develop	Manipulate	Rotate	Write

Sources: Culled from Burze & Roberts (1998) and Wentling (1993)

Verbs in Affective Domain

Accept	Combine	Influence	Request
Act	Compare	Initiate	Resist
Agree	Complete	Join	Respond
Approve	Comply	Judge	Revise
Argue	Conform	Listen	Seek
Arrange	Cooperate	Maintain	Share
Ask	Criticize	Mediate	Show
Assist	Debate	Obey	Solve
Attempt	Defend	Observe	Suggest
Attend	Discriminate	Organize	Support
Avoid	Discuss	Praise	Verify
Balance	Dispute	Prefer	Visit
Believe	Evaluate	Propose	Volunteer
Challenge	Follow	Question	Weigh
Change	Give	Read	
Choose	Help	Report	

Sources: Culled from Burze & Roberts (1998) and Wentling (1993).

List of Commonly Used Abbreviations

A.D.	:	<i>Anno Domini</i>
B.C.	:	<i>Before Christ</i>
A.M.	:	<i>Ante Meridiem</i>
P.M.	:	<i>Post Meridiem</i>
etc.	:	<i>et cetera</i>
e.g.	:	For example (<i>exempli gratia</i>)
i.e.	:	That is (<i>id est</i>)
c.f.	:	Compare (<i>confere</i>)
ca	:	Circa (about, approximately)
et al	:	And others (<i>et alii</i>)
ibid	:	In the same place (<i>ibidem</i>)
op.cit.	:	In the work cited (<i>opere citato</i>)
viz.	:	Namely (<i>videlicet</i>)

List of Commonly Confused Words

Accept, Except

Accept means to receive.

Except means not including.

Adapt, Adept, Adopt

Adapt means to adjust.

Adept means skilled.

Adopt means to accept as your own.

Advice, Advise

Advice is an opinion about what should be done.

Advise means to recommend.

Affect, Effect

Affect means to influence.

An **effect** is a result.

All ready, Already

All ready means everything is ready.

Already means previously.

Annual, Annul

Annual means yearly.

Annul means to make void or invalid.

Appraise, Apprise

Appraise is to assess or estimate the worth of.

Apprise is to inform or notify.

Ascent, Assent

Ascent is an upward movement

Assent means to agree to.

Censor, Censure

Censor is to prohibit free expression.

Censure is rebuke, harsh criticism.

Choose, Chose

Choose means to select.

Chose is the past tense of choose.

Cite, Site, Sight

Cite means to quote or mention.

Site is a noun meaning a place.

Sight is a noun meaning view.

Complement, Compliment

Complement means to make complete.

A **compliment** is something said in praise.

Coarse, Course

Coarse is an adjective meaning rough, big-grained, not fine.

Course is a noun referring to a direction (the course of a ship) or a series of lectures on one subject (a history course in college) or a subject/paper in a programme.

Dairy, Diary

A **dairy** is a farm where milk and milk products are produced.

A **diary** is the daily journal kept.

Device, Devise

A **device** is an instrument used to perform a task.

Devise is to create or invent.

Discreet, Discrete

Discreet means modest and prudent.

Discrete means separate and distinct.

Emigrate, Immigrate

Emigrate means to leave one country to settle in another.

Immigrate means to come to live in a new country.

Fair, Fare

A **fair** is an exhibition of some kind in large number.

A **fare** is the fee you pay to ride public transportation.

Flare, Flair

Flare is to increase greatly, burn brightly, or something that provides a bright flame.

Flair refers to a sense of style or a talent.

Foreword, Forward

A **foreword** is a short introduction at the beginning of a book.

Forward is an adverb indicating movement ahead or toward the front.

Forth, Fourth

Forth means forward, from this point.

Fourth indicates an object that comes between No. 3 and No. 5.

Herd, Heard

Herd is a group of animals.

Heard is the past tense of hear.

It's, Its

It's is the short form of it is.

Its is a pronoun that shows ownership or possession.

Knew, New

Knew is the past tense of know.

New means never used.

Later, Latter

Later means afterward.

Latter means the last of two things mentioned.

Lightening, Lightning

Lightening is a verb that means to reduce the weight of.

Lightning refers to the electrical discharge in the sky.

Loose, Lose

Loose means opposite of tight.

Lose means to be defeated or no longer have.

Marital, Martial

Marital refers to marriage.

Martial refers to war or warriors.

May be, Maybe

May be as two words means might be.

Maybe is one word that means perhaps.

Past, Passed

Past means gone by or history.

Passed is the past tense of pass.

Principal, Principle

A **principal** is the head of a school.

A **principle** is an important fact or law.

Quiet, Quite

Quiet means without sound or mention of.

Quite can mean either "completely or somewhat, rather", depending on what you mean: I was quite alone that Saturday afternoon (completely) but the hours passed quite quickly (rather).

Right, Rite, Write

Right means correct.

A **rite** is a ceremony.

To **write** is to express oneself in writing.

Rise, Raise

Rise is intransitive and does not have an object:

The sun rises in the east.

Raise always has an object: You can raise a crop on a farm or raise your hand in class.

Some time, Sometime, Sometimes

Some time refers to a considerable period of time.

Sometime refers to an indistinct or unstated time in the future.

Sometimes is an adverb meaning continually, off and on, occasionally.

Statue, Statute, Stature

A **statue** is a carved or shaped imitation of an object.

A **statute** is law.

Stature means status, standing.

Stationary, Stationery

Stationary means to be standing still.

Stationery means writing materials.

Than, Then

Than means in comparison with.

Then means next.

Their, There, They're

Their is a form of that shows ownership.

There describes where something is.

They're is a short form of they are.

Verses, Versus

Verses is plural of verse, a line of poetry.

Versus means in comparison or opposition to.

Waist, Waste

Waist refers the (often) narrow area of a human body between the hips and ribs.

Waste is garbage, or waste can be a verb meaning to use carelessly.

Weak, Week

Weak is opposite of strong.

Week refers to the names of the seven days, from Sunday to Saturday.

Weather, Whether

Weather means conditions outdoors.

Whether is an expression of choice between two options.

International Systems (SI) of Units

Physical quality	Name	Symbol
<i>SI base unit</i>		
Length	metre	m
Mass	kilogram	kg
Time	second	s
Electric current	ampere	A
Thermodynamic temperature	kelvin	K
Amount of substance	mole	mol
Luminous intensity	candela	cd
<i>Two supplementary units are used with SI as follows:</i>		
Plane angle	radian	rad
Solid angle	steradian	sr

Physical quantity	Name	Symbol	Definition
<i>Derived units with special names</i>			
Frequency	hertz	Hz	s^{-1}
Force	newton	N	$kg\ m\ s^{-2} = J\ m^{-1}$
Pressure	pascal	Pa	$kg\ m^{-1}\ s^{-2} = N\ m^{-1}$
Energy	joule	J	$kg\ m^2\ s^{-2} = N\ m$
Power	watt	W	$kg\ m^2\ s^{-3} = J\ s^{-1}$
Electric charge	coulomb	C	A s
Electric potential	volt	V	$kg\ m^2\ s^{-3}\ A^{-1} = W\ A^{-1}$
Capacitance	farad	F	$A^2\ s^4\ kg^{-1}\ m^{-2} = C\ V^{-1}$
Electric resistance	ohm	Ω	$kg\ m^2\ s^{-3}\ A^{-2} = V\ A^{-1}$
Conductance	siemens	S	$kg^{-1}\ m^{-2}\ s^3\ A^2 = A\ V^{-1}$
Magnetic flux	weber	Wb	$kg\ m^2\ s^{-2}\ A^{-1} = V\ s$
Magnetic flux density	tesla	T	$kg^2\ A^{-1} = Wb\ m^{-2}$
Inductance	henry	H	$kg\ m^2\ s^{-2}\ A^{-2} = Wb\ A^{-1}$
Luminous flux	lumen	lm	cd sr
Illuminance	lux	lx	$cd\ sr\ m^{-2} = lm\ m^{-2}$
Activity (of radioactive source)	becquerel	Bq	s^{-1}
Absorbed dose (of ionizing radiation)	gray	Gy	$m^2\ s^{-2} = J\ kg^{-1}$

Examples of functions and operators set in upright text in equations:

arg (argument)	hon (homology)	min (minimum)
cos (cosine)	Im (imaginary)	mod (modulus)
cot (cotangent)	inf (inferior)	Re (Real)
det (determinant)	ker (kernel)	sin (sin)
diag (diagonal)	lim (limit)	sup (superior)
dim (dimension)	long (logarithm)	tan (tangent)
exp (exponential)	max (maximum)	var (variance)

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(Address of the Course Writer)

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Yours faithfully,

Date:

(Signature of Course Writer)

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