TEXTBOOK DEVELOPMENT PROCESS

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Curriculum – Syllabus – Textbook

• *Curriculum*: is a plan for providing set of learning opportunities to achieve broad goals and related specific objectives for an identifiable population.

• *Syllabus*: an outline of a specific course proposed for that level. It includes topics to be covered, their order, resources and other relevant information.

• *Textbook*: a manual of teaching and learning, collection of contents, activities and assessments in a branch of study. It is infact a translation of Curriculum demands.
UNDERSTANDING THE CURRICULUM

- **Standards**: they define the competencies by descriptive statements specifying broadly, the knowledge, skills and attitudes that students will acquire, shall know and be able to do in a particular key area during the course of study. These are qualitative in nature and sets out the learning targets. They may not be subject specific.

- **Benchmarks**: they elaborate the standards indicating that the students will accomplish at the end of each development level. They are subject specific.

- **SLOs**: they are detailed statements describing what students are supposed to learn and be able to do at each grade level to achieve the specified benchmarks. They are activity specific and generally observable and measurable.
A Paradigm Shift

From

**Traditional approaches**
1. Based on contents & topics
2. Focus on objectives
3. Focus on teaching
4. Teacher centered
5. One way approach
6. Assessment of content knowledge & simple understanding
7. Promote memorization

TO

**Standard based approaches**
1. Based on standards
2. Focus on SLOs
3. Focus on learning
4. Student centered
5. Variety of approaches
6. Assessment of content, skills and attitudes, deeper understanding, reasoning and application
7. Promote thinking
What is new in a Textbook

From descriptive and reading approach
To
Information mapping, Interactive elements, life skills activities, gender equity, brain teasers for initiating discussions, diagrams, illustrations, worked examples, Interesting information in Boxes, critical thinking problems and FAQ’s
For
Effective Learning
Envisage Textbooks

- Providing knowledge which is useful for a developing society.
- Inculcating problems-solving approach to create independent / critical thinking.
- Creating skills and attitudes relevant with real life situation.
- Reflecting innovative writing/modern production processes.
- Containing upto date & age appropriate text.
- Based on conceptual assessment, thinking based exercises instead of fact/ memory questions oriented only.
TEXTBOOK DEVELOPMENT PROCESS

1. IDENTIFICATION OF NEEDS
   - Data collection
   - Revised Curriculum
   - Feedback
   - Survey
   - Data analysis

DEVELOPING THE LEARNING MATERIAL
- Planning
- Writing
- Determine layout of the material
- Editing
- Reviewing

INPUT SOURCES
- Resource mobilization
- Panel of authors

PILOTING

REVISION

IMPLEMENTATION / PRODUCTION / PRINTING

EVALUATION
- Revision
- Review
Identification of Needs

This is the planning stage where the developer is required to:

- Establish the need for the learning material;
- Evaluate the existing materials;
- Compare the existing materials with identified outcomes of learning reflected in the curriculum/programme/module;
- Identify gaps between the two;
- Understand quality principles for developing learning materials;
- Ensure that a system for managing material development quality is in place;
- Outline activities or project plan for developing learning materials;
- Identify constraints; and
- Consider the needs of the target group.
WHO SHOULD WRITE A TEXTBOOK

A coordinated panel of:

i. Authors
ii. Editor/Editors
iii. Psychologist
iv. Sociologist
v. Language Experts
vi. Designers/Illustrators
vii. Technical Editor

(Contd…….)
DEVELOPING THE LEARNING MATERIAL

This is the most important section in the learning material development process. It includes:

1. Research & Planning
2. Curriculum mapping
3. Determining Layout of the material
4. Editing
5. Reviewing
6. Sequencing learning activities
7. Infusing self assessment/thinking base question/tasks/additional information
Curriculum mapping

- It helps to identify gaps, missings and repetitions in a curriculum and provides linkages, progression and logical sequences of contents. It requires:

A. Curriculum review

B. Concepts/topics/activities/skills/assessment/resources

C. Fixing common concepts/topics/subtopics of the curriculum for the textbooks.

D. Development of conceptual framework/template
For the book

- Bring writing team together under the leadership of the Editor(s).
- Review Curricula document to ensure decisions are in line with the objectives of National Curriculum, standards and benchmarks and decide how and where SLOs could best be met.
- Develop an outline of the textbook.
- Agree on a common format, writing style, terminology and units etc.
- Develop a timeline for publication including dates for receipt of 1) Outline, 2) First draft and 3) Final draft.
- Periodic weekend meetings to review progress of each other.
For a chapter

- Develop an outline
- Determine topics and subtopics that will be included
- Decide on key idea, facts, concepts, skills, values that will be developed
- Develop potential illustrations
- Decide on likely activities / interactive elements.
- Decide on end-of-the-chapter exercises
  - Move from lower to higher order thinking
  - Develop multiple intelligences
  - Contextually relevant
  - In keeping with local teaching and learning
Writing

It is a dynamic process of diversified approaches. Good writing certainly requires passion, time and commitment.

Ensure content is up-to-date and accurate and developmentally appropriate

Ensure culturally and contextually appropriate

Ensure language is

- Age appropriate
- Culturally appropriate
- Fair to all groups
- Grammatically correct
Aim to engage and hold readers attention

Keep sentences small and simple.

Paragraphs to deal with single idea etc.

Identify illustrations required

Diversity of illustrations and in kinds of illustrations

Ensure illustrations are purposeful – add to text, explain text or replace text.
Bring in a design expert to determine how best to layout the material

The flow of energy in an ecosystem is represented in the form of pyramid of energy. It is a shape which shows the amount of energy present in biomass and the amount which is lost at different trophic levels of the ecosystem (Figure 3.7).

- Tertiary consumers
- Secondary consumers
- Primary consumers
- Producers

Figure 3.7: The energy pyramid

Did you know? A calorie is defined as the amount of energy to raise the temperature of 0.1 g of water through 1°C.

What %age of the producer's energy can reach the carnivore trophic level? 

4%

Communication and Graphical Skills
- Trace energy flow diagram in ecosystem.

3.5 THE CYCLING OF CHEMICALS IN ECOSYSTEM

The chemicals found in living organisms are derived originally from the abiotic components of the ecosystem. From the abiotic components, these materials are taken up by organisms. In the biotic world these materials move from one trophic level to the next and are eventually returned back to the abiotic components when the waste products and dead bodies of organisms are decomposed. This cycling of chemical elements is called biogeochemical cycle. Water, carbon and nitrogen cycles are important biogeochemical cycles.

3.5.1 The Water Cycle

Water continuously circulates from the oceans to the atmosphere, to the land and back to the oceans. We can describe the cycling of water in two phases.
✓ Ensure the textbook is in line with the objectives of National Curriculum, meets benchmarks and learning outcomes.

✓ Ensure accuracy and authenticity.

✓ Ensure similar language across the textbook.

✓ Footnotes and side notes may be inserted wherever necessary.

✓ Ensure the text material is free from ambiguities and errors (both mathematical and typographical).
Use the textbook review format to critically review the book
Piloting is done to determine the suitability, strengths and weaknesses of the developed material in order to take necessary remedial actions prior to its full implementation. The developer is expected to:

- Develop monitoring instruments for piloting;
- Identify institutions and/or learners for piloting;
- Use a variety of learning methods;
- Encourage and receive feedback from the learners & teachers on structure and content, approaches, duration and assessment strategies;
- Provide frequent feedback to the learners and teachers; and
- Use feedback for ongoing adjustments in the learning process/material.
Professional Artist/computer graphic expert to draw attractive and eye catching illustrations, layout designing and title covers.

They contribute to the effectiveness of textbooks and reading materials by conveying and enhancing the author’s Intentions through visual means.
An experienced person who should be responsible for overall physical presentation, layout, page designing, line spacing, style, and size of font, optimum use of available space, coherence, paper selection/binding and cost effectiveness etc.
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Implementation

Production and printing
Evaluation / feedback
Further revision
SELECTION OF AUTHORS
Who should be an Author

**Subject Experts/Working Teachers**

- Who can minimize barriers to comprehension using their teaching, field and research experience.
- Who simply enjoy writing and personal satisfaction of helping learners.
- Who have the commitment to share knowledge with other teachers and learners.
- Who have the skills and aptitude to present ideas and information best suited to their target audience.
- Who are committed, dedicated, devoted and sincere to the cause.
Who should be an Editor

- A person with vision and expertise.
- A person having knowledge of the subject and the skill of editing to shape the material into most suitable and interesting for the intended audience.
- Experienced author/authors may act as editor/editors for symmetrical and harmonized arrangement of textual matter reflecting unity and coherence.
Psychologist to look into aspects of comprehension Level and cognitive stage of learning.
Sociologist to look into cultural, social, gender, ethnic, religious aspects of textual matter and photographs so that they do not offend any section of the society or doesn’t look alien.
Language expert to look into linguistic aspect of textual matter confining the text to consists of short sentences and simple words with in a range of predetermined graded vocabulary