UNIT 16 MODELS OF CURRICULUM DESIGNING AND DEVELOPMENT

Structure

16.1 INTRODUCTION

In the previous units, you have learned that curriculum is a plan for learning. It is based on a philosophy and has a basic organization. In other words it has two major attributes – vision and structure. Every curriculum reflects a 'vision' or philosophy

about the purpose of education in society. The curricular vision is translated into an organised structure or planned experiences for the learner, by which the learner interprets the role of education.

The concept of Curriculum Design refers to the arrangement of the elements of curriculum into a holistic plan. The organisation, which someone selects, is actually determined by his or her curricular philosophy. The curriculum development process always consists of a basic four-step cycle – (1) analysis of purpose, (2) designing a programme, (3) implementing the experiences in learning and (4) evaluating the process.

In this unit, we shall discuss the modes of Curriculum Design and Development in detail. We shall deliberate upon the sources of curriculum design and how such sources influence education. At this point we will also view the curricular design on various dimensions and workout the representative curricular designs. We also need to understand the scientific steps involved in the process of curriculum development.

16.2 OBJECTIVES

After working through this unit, you should be able to :

- identify the components of curriculum design;
- explain how the sources of curriculum design influence the curricular pattern;
- describe the dimensions of curriculum design;
- discuss the approaches to curriculum development;
- differentiate between the technical and non-technical models of curriculum development; and
- identify the basic steps involved in the process of curriculum development.

16.3 COMPONENTS OF CURRICULUM DESIGN

As mentioned earlier the four components of a curriculum design are: (1) purpose – i.e. aims, goals and objectives, (2) design of subject matter (3) implementation of the learning experiences and (4) evaluation approaches (Ornsatien and Hunkins, 1988).

The manner in which these four components are arranged determines the design of the curriculum. Often one component is given more weightage than the others. However, most curricular designs lay more emphasis on context subject matter while others focus on learning activities. The interrelationship among these four components of curriculum design has been given by Giles, et. al. (1942) in a diagram (see Figure 16.1). These have used method and organization instead of learning experiences.

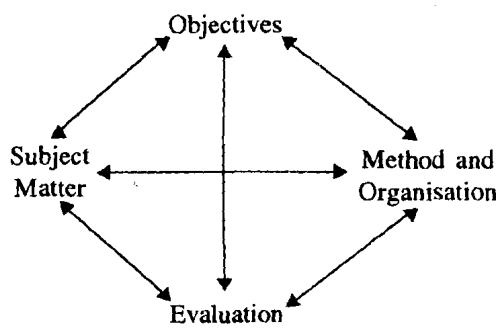

Fig. 16.1: The Components of Design.

Source: Giles, et. al. (1942).

A curriculum designer is thus confronted with four basic questions: What is expected to be done? What content is to be included? What strategies, resources and activities will be employed? How will the results of such a design be appraised? The paradigm presented by Giles, el. al. (1942) suggests continuous interactivity between the four components i.e. decisions made about one component will influence the other.

A philosophy is essential for curriculum development. This involves theoretical and practical issues which will influence an individual's selection of goals and objectives of education, have a bearing on the content and its organization, determine the pattern of delivering the chosen content and also guide their judgement about the evaluation procedures to be adopted.

"If a curriculum is designed adequately, it defines for the curriculum decision maker the nature and scope of the components in the curriculum that are to receive particular attention. Hilda Taba noted that most curriculum designs contain Giles' four components, but many lack balance, because the elements are poorly defined or are not considered in relation to a theoretic rationale" (Ornstien and Hunkins, 1988).

16.4 SOURCES FOR CURRICULUM DESIGN

The curriculum designer must have definite philosophical and social views on education. In other words, these views are their sources of curriculum and determine the manner in which they influence the course of education. A curriculum lacking in such social and philosophical orientations will be a confused curriculum.

16.4.1 Science as a Source

A curriculum has a scientific basis when its elements are observable and measurable. The method of scientific inquiry is adopted to arrive at truths. The curricular components are derived from scientific ideas.

16.4.2 Society as a Source

Education has the power to change or improve society. Analysis of the existing social situation can form the basis of curriculum. Those curriculum designers, who consider school as a miniature of society, strongly believe that curriculum should be based on an understanding of society.

Dewey believed that society should be considered as a source for curriculum design. He wrote, "Whenever we have in mind the discussion of a new movement in education, it is especially necessary to take the broader or social view" or else the change will be "looked at as the arbitrary inventions of particular teachers, at the worst transitory fads, and at the best merely improvements in certain details." (J. Dewey, 1900) Some curricularists believe that a curriculum should enable individuals to make a place for themselves in society. Others believe the curriculum should evolve in response to government policies and decisions. Reconstructionists take a different stance: curriculum should facilitate change or improvement of the social order. The reconstructionist point of view has its origins in Dewey's book "Reconstruction in Philosophy" (1920). The belief that schools could change society if they had the will to do so is expounded by George Counts (1932) in a booklet called, "Dare the Schools Build a New Social Order?" The implications of the content were that teachers should envisage their role as agents for social change through the curricular contents (Ornstein and Hunkins, 1988).

16.4.3 Knowledge as a Source

Knowledge from other fields of study and not merely science can be interpreted on the basis of the source of curriculum-content from other fields of study apart from

science cannot be ignored. Hence if the domain of knowledge itself is considered as the source of curriculum then no particular content will be left out. According to Hunkins (1980), knowledge is perhaps the only source of curriculum, and that society and what we know about learners really serve as filters in the selection of content.

Knowledge may be structured in different ways – disciplinary and interdisciplinary. Disciplined knowledge has content organised into a particular structure, which is unique to that discipline, for example, Physics or History. The methods of inquiry, which expand its domain, are specific to that discipline. Undisciplined knowledge does not have a unique content, but content is taken from different disciplines and clustered around a focus of investigation. For example Bio-informatics, Bio-technology etc.

16.4.4 Learner as a Source

In this process the individual is of primary importance. The child is an individual who should be motivated to create his or her own ideas and not depend on that of others. The curriculum thus becomes learner centred and experience centred, and the nature of education is determined by how the learner learns, forms attitudes, values, develops interests. Individuals should not be compelled to fit into certain programmes or conform to the interest of others. In this curricular design, the teacher assumes a non-directive role. The teacher is a partner in learning and can serve as a facilitator or resource for the individual's learning process.

Check Your Progress

Notes: a) Write your answers in the space given below.

b) Check your answers with the one given at the end of the unit.

1. a) What do you understand by the term curriculum design?

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b) How does society influence curriculum design?

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16.5 DIMENSIONS OF CURRICULUM DESIGN

From the previous discussion it must be clear that curriculum design is a statement reflecting the relationships between the curricular components. However, a curriculum design has to be developed on the basis of certain dimensions like Scope, Integration, Sequence, Continuity, Articulation and Balance. These considerations will determine the shape of the curriculum, the kind of learning experiences it will provide, its extent, organizing content into a useful sequence, etc. Let us now examine these considerations for curriculum design.

16.5.1 Scope

According to Saylor et. al. (1981), scope is defined as, "the breadth, variety and types of educational experiences that are to be provided to pupils as they progress through the school programme. Scope represents the latitudinal axis for selecting curriculum experiences." Scope of a curriculum design determines the depth to which the subject matter has to be dealt with, the type of learning activities to be provided and decisions about the arrangement of curricular components.

16.5.2 Integration

Learning becomes meaningful when content from one field (Physics) is interrelated with content from another (Chemistry). The major task confronting a curriculum designer is to integrate learning experiences of the learner at a particular level of the curriculum. "It is an attempt to interrelate content with learning experiences and activities to ensure that students' needs are met." (Hunkins and Ornstein, 1988). This refers to the horizontal relationships among various themes or topics in different subject areas.

16.5.3 Sequence

While arranging the components of curriculum a vertical sequence should be followed, i.e. there should be a vertical relationship between the curricular elements so as to enable continuous learning. There has been a longstanding debate over whether the sequence of content and experiences should be based on the logic of subject matter or on the way in which individuals process knowledge. Those who believe in arranging curricular components on psychological principles have based this belief on researches in human growth, development and learning. Piaget's research has provided a framework for sequencing content and activities and relating expectations to what we know about how individuals function at various cognitive levels. Kohlberg's research has provided a similar service regarding individuals' moral development and the ways in which individuals process types of moral issues and concepts (Hunkins and Ornstein, 1988).

Based on well-accepted learning principles, Smith, Stanley and Shores (1957) have given four bases for sequencing content. These are: -

i) **Simple to complex learning:** From teaching two digit addition to teaching five digit addition.

ii) **Part to whole or pre-requisite learning:** From teaching digestive system to teaching the entire human body systems.

iii) **Whole to part:** Teaching the concept of 'animal' and then teaching the concept of a 'dog'.

iv) **Chronological learning:** Chronological occurrence of historical events.

16.5.4 Continuity

Continuity implies the repetition of such skills or ideas in the curriculum about which the learners should have in-depth knowledge. That means over a period of time the same kind of skills be brought into operation. For example if the concept of addition is to be developed then content should provide recurring opportunity or exercises on addition to be practiced.

16.5.5 Articulation and Balance

Articulation refers to interrelatedness of concepts of a curriculum. The relation can be either vertical or horizontal. Vertical articulation occurs when certain lessons, topics

or courses are related to those occurring later in the curriculum sequence. For example the tenth grade chemistry curriculum could be designed so as to interrelate the concepts of Atomic Structure with those of Radioactivity. Horizontal articulation occurs between curricular components simultaneously. For example, when curriculum designers interrelate concepts of eleventh standard History and Political Science or Political Science and Sociology. However, interrelationships between subjects can be established only with difficulty. Hence it is difficult to achieve articulation in a curriculum.

Curriculum designers are also concerned that appropriate weightage be given to every aspect of the curriculum, so that a balanced curriculum emerges. A balanced curriculum is one that helps the learners to gain knowledge and utilize it to achieve their goals. Hence various curricular components, like subject matter, learning activities, learner interests, attitudes, values etc. should be given due consideration for optimal learning, based on learners' needs. A fully balanced curriculum is difficult to achieve since schools are slow in adapting to the changing needs of individuals and society. Often one subject area is stressed more than the others depending on local fads and social and political pressures. There are no objective decision screens which influence the curriculum design. Having discussed the different dimensions of curriculum design let us look into the various curricular approaches which would be representative of a curriculum design.

16.6 CURRICULAR APPROACHES

A given teaching-learning situation focuses on a particular type of learning activity: mastery of subject matter, addressing a social problem etc. How these learning situations are organized indicates a curricular approach.

"A curricular approach is defined as a pattern of organization used in making decisions about the various aspects of a teaching-learning situation." (Beane, et. al. 1986).

These approaches are categorized into four major groups –

i) Subject Area Approach

ii) Broad Fields Approach

iii) Problem Centered Approach

iv) Learner Centered Approach

The choice of a particular approach for curriculum development reflects the following:

- The selection of objectives
- The use of subject matter or content
- The type of learning experiences to be provided
- The role of teachers, learners and the organizing center for the teaching-learning situation
- The choice of method for providing the learning experiences

Let us now discuss the curricular approaches in the order given above:

16.6.1 Subject Area Approach

One of the most widely used curricular approaches is the subject-centered approach. In this design the curriculum is planned around separate subject areas or disciplines. The popularity of this approach is rooted in the fact that knowledge and content have a very strong tradition in our culture and are thus accepted as integral parts of the curriculum. The subject design is the oldest and best known to teachers and the common man. In this the school programme is divided into subject areas of English, Mathematics, Social Studies, Music, Art and so on. Mastery of the subject matter and skills in that

area form the basis of learning objectives. Teachers are also trained as subject specialists and subject matter is drawn from within one subject area. "An early spokesperson for the subject curriculum was Henry Morrison. Morrison (1940) argued that the subject matter curriculum and literary skills should be the focus of the elementary curriculum. This orientation to subject matter reflected a mental discipline approach to learning and a perennialist orientation to subject matter. Morrison also felt that such a design could allow a student at the secondary school level to develop interest and competence in one subject area. However, he proposed that a variety of courses should be offered to address the needs of different students. This approach defines important learning in terms of subject matter from existing disciplines.

16.6.2 Broad Fields Approach

Another method of organizing curricular components is combining two or more subjects from related fields into a broader field. The popularity of this approach in recent times is due to the following reasons:

i) Curriculum is not compartmentalized into rigid subject boundaries. Hence the information becomes more meaningful to the learners.

ii) Teachers have greater flexibility to choose content.

iii) Learners can see the interrelatedness of various subject areas in the curriculum. They can generalize knowledge across broad areas.

The Broad Fields Approach combines separate subjects from within a domain of knowledge. An example of such a correlation could be the Humanities programme which may be a combination of Literature, Art, History, and Music. or sometimes knowledge from two entirely different fields could be blended e.g. multi cultural education is a broad field area, which draws information from Sociology, Psychology, History and Anthropology.

However this approach does pose a problem. A question arises as to whether students gain only a superficial understanding of the various concepts in the broad field areas. The field learner would learn concepts from the interrelated disciplines, i.e. breadth of knowledge would be more, but may not attain depth. Curricularists do agree that correlation among some subjects is required to establish linkage among them and avoid rigid compartmentalization of the curriculum e.g. Science and Maths can be correlated because Maths forms an important tool for dealing with scientific content.

16.6.3 Problem Centered Approach

The third major type of curricular approach is the problem centered one, where curriculum is organized on major problems in society. These designs focus on the problems of the society and of the individual. It focuses on the problems of living. Although this approach is concerned with individuals in a social set up yet it is different from learner-centered approach. However at some stage such a design may have to cater to the needs of learners because it deals by and large with problems of human life in their social set up.

Problem centered curriculum designs are designed to address societal needs that are unmet and also for preservation of culture. For example, courses may be developed on environmental problems, technology, racism, futurology, etc. The learning objectives are framed to analyze the problem or issue and content drawn from the subject area pertinent to the issue. Very often the content does cut across the subject areas but is well within the needs and abilities of the learners. The primary objective of using this approach is to create in the learners an awareness of crucial social issues and develop skills to help solve such problems. Some problem centered approaches focus on persistent life situations, others deal with contemporary social problems, some address areas of living and some with the reconstruction of society.

Some educators feel that curriculum should focus on contemporary social issues and should aim at reconstruction of society. Such educators consider themselves as social reconstructionists. They feel that if curriculum is geared to the social, political and economic development of society then a social change can be effected to create a better and more equitable society. In other words, curriculum should enable social change, through the agency of school.

16.6.4 Learner Centered Approach

All curricularists believe that curricula are valuable to students. At a time when most educators emphasized subject matter for designing curricula, these educationists asserted that learners should be the focus of all curricula. They emphasized that all school learning should be geared around the needs, interests and abilities of the learners. The major purpose behind this approach is to help learners come to grips with issues in their lives and be prepared for the present. Much of this philosophy has its origins in Rousseau's book "Emile" published in 1762. Rousseau was not for "Child anarchy". He wrote that when a child is nearing adolescence, "much skill and discretion are required to lead him towards theoretical studies." He believed that teachers should provide learners the opportunity to explore nature and learn on their own. "Put the problems before him and let him solve them himself. Let him not be taught science, let him discover it." (Rousseau, 1911). This approach also draws from thoughts of philosophers like Froebel, Pestalozzi, They are proponents of the philosophy of learning by doing. For example to teach geography, the students should be taken for field trips to teach them map work and by making sketches of landscapes. While the topics of study may be organized and planned by teachers, learning would occur spontaneously from discussions among pupils and teachers. The above child-centered design, which is attributed to Dewey, was actually conceived by Parker. Parker (1894) believed that the method of instruction should be patterned on the child's natural approach to learning. Dewey like Parker believed that education was a social process by which an individual could achieve social aims.

We have discussed the four major approaches to curriculum design. Let us now study some models of curriculum development.

Check Your Progress

Notes: a) Write your answers in the space given below.

b) Check your answers with the one given at the end of the unit.

2. List four curriculum design dimensions.

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3. What are the features of Broad Fields Approach to curriculum design?

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16.7 MODELS OF CURRICULUM DEVELOPMENT

The success of our educational endeavours rests on careful planning, without which disorder and chaos will result. The need to plan effective curricula cannot be denied. From such curriculum plans a model for curriculum development will emerge. For the construction of a curriculum, thought has to be given to goals, content, learning experiences, methods and evaluation. Curricular approaches also focus on different aspects like subject matter, learners and society. Hence there are various ways to define curriculum development for which several models can be developed. Most models can be classified as either technical or scientific models and non-technical or non-scientific models. The classification of a model as non-technical or non-scientific should not be seen in a negative light. Instead those educators who emphasize subject matter approaches adopt the scientific or technical approach to curriculum development. Advocates of learner-centered and problem centered designs formulate non-technical or non-scientific curriculum designs.

Let us look into these approaches and study the models characterized by them.

16.7.1 Technical-Scientific Models

According to this point of view, "Curriculum development... is basically a plan for structuring the environment to coordinate in an orderly manner the elements of time, space, materials, equipment and personnel." (Feyereisn, et. al. 1970.)

The curriculum can be comprehended from a macro or broad point of view and its prime objective is the education of the individual. It enables the educationists to work with a plan in mind. Curricula can thus be planned to achieve optimal student learning, through a scientific organization of its components into a complex unit. Let us discuss three models under the Technical-Scientific Approach.

- Taba's Model
- Goodlad's Model
- Hunkins's Developmental Model

Taba's Model

Hilda Taba advocated that those who use curriculum should be the curriculum designers as well. She believed that teachers should create specific teaching-learning situations for their students. They should adopt an inductive approach to teaching i.e. from specific to general rather than the traditional deductive approach, starting from general and building to the specifics.

Taba's grassroots model has seven steps as listed below, advocating a major role for teachers. These are –

- Diagnosis of needs – Identify needs of the students for whom curriculum is to be planned.
- Formulation of Objectives – Specify the objectives by which needs will be fulfilled.
- Selection of Content – Select subject matter based on objectives and determine validity of the chosen content.
- Organisation of content – Arrange the content in a particular sequence keeping in mind the maturity of learners, academic achievement, interests etc.

- Selection of learning experiences – Facilitate interaction of learners with content through appropriate instructional methodology.
- Organization of learning activities – The learning activities be organized in a sequence depending both on content sequence and learner characteristics.
- Evaluation – To assess the achievement of learning objectives, evaluation procedures need to be devised.

Taba's grass root model emphasizes that a broad base of involvement is necessary for curriculum decision-making. However, in spite of its having several merits its weaknesses are as follows:

- The model has employed the concept of participatory democracy to a highly technical, complex and specialized process, and this will not guarantee effective curricula.
- It takes for granted that teachers have the time and expertise to engage in such extensive curricular activities. (Hunkins and Ornstein, 1988.)

Goodlad Model

In this model the basis of formulating educational aims is the analysis of values of the existing culture. These aims are translated into educational objectives, which are stated in behavioural terms. Learning opportunities are provided based on the learning objectives, for example providing courses or readings.

According to Goodlad, educational planners deduce specific educational objectives from these learning opportunities and general objectives. From these objectives, the curriculum planners design and/or select organizing centers, which provide learning opportunities for a group of students or a student.

The model is characterized as a technical-scientific one because its various parts are inter-connected. Feedback and adjustment of the entire model result from analyzing the students performances and relating them to the values of the general society. [John L. Goodlad and Maurice N. Richter, 1966; in Ornstein and Hunkins, 1988]

Hunkin's Developmental Model

This model permits those working with the model to adjust their decision making about curricular actions. For instance, at the content selection stage if the curricularist finds that no content exists for a particular student, they can go back to the beginning and rethink the curriculum or go to the curriculum diagnosis stage to recreate the learning objectives.

This model has seven major stages:

- curriculum conceptualization and legitimization
- diagnosis
- content selection
- experience selection
- implementation
- evaluation
- maintenance

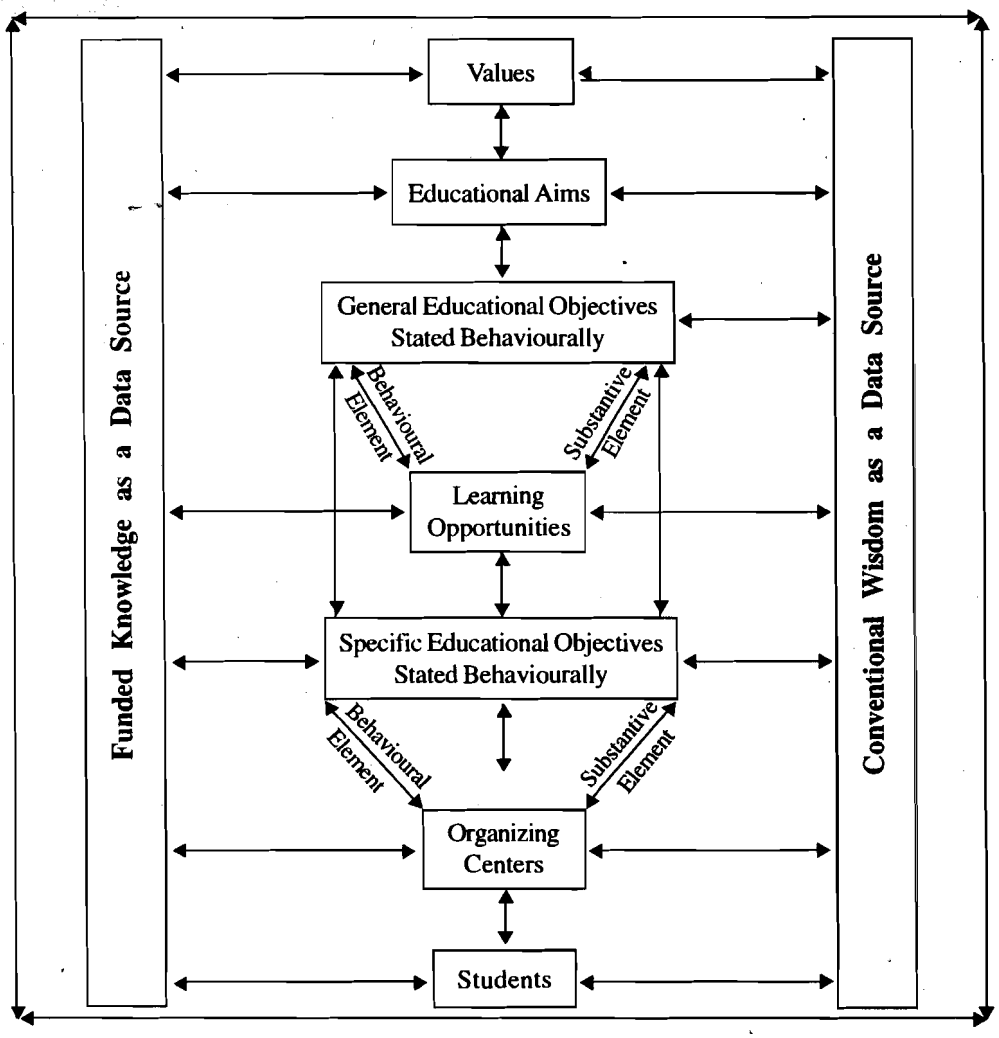

Fig. 16.2: Substantative Decisions and Derivations in a Conceptual System for Curriculum.

Source: From John L. Goodlad and Maurice N. Richter, The Development of a Conceptual System for Dealing with Problems of Curriculum and Instruction (Los Angeles: Institute for Development of Educational Activities, University of California, 1966), p. 65 in Allan C. Ornstein and Francis P. Hunkins, Curriculum, Foundations, Principles and Issues, USA, 1988.

The model is represented below diagrammatically:

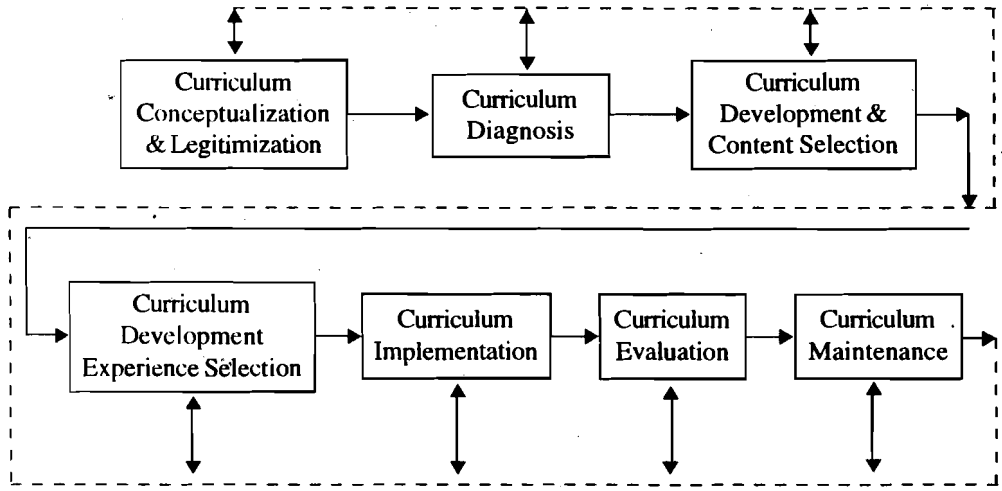

Fig. 16. 3: Curriculum Development Model.

Source: From Francis P. Hunkins, Curriculum Development Program Improvement (Columbus, Ohio: Merrill, 1980), p. 17 in Allan C. Ornstein and Francis P. Hunkins, Curriculum Foundations, Principles and Issues, USA, 1988.

In this model the curriculum maintenance stage is also unique because once a curriculum is found successful the designers stop considering ahead. But curricular programmes have to be maintained for continuation of the programme.

There are several other models belonging to this camp, but each is not complete in itself. However each model does show the essential aspects for curriculum development.

Let us now examine some Non-technical – non-scientific models for curriculum development.

16.7.2 Non-technical Non-scientific Models

The nomenclature of this category of models should not mislead you into believing that such models are non systematic or non rational and neither do they suggest any degree of disorder. This approach to curriculum development focuses on the learners' self-perception of needs and preferences. Learners in this approach are involved in the curriculum planning process. The technical-scientific models on the other hand rely more heavily on the view of experts and demands of subject matter, while considering learner's needs. Hence we can say that technical-scientific models primarily focus on subject matter whereas non-technical non-scientific models, which focus on learner needs and subject matter and society, become secondary. Both the camps are looking at curricula from different frameworks.

Let us now discuss three models under this category:

- Open Classroom Model
- Wienstien and Fantini Model
- Roger's Model of Interpersonal Relations

Open Classroom Model

The Open Classroom Model is based on the Activity Curriculum. The proponents of activity curriculum do not believe in planning any activity for the children. In their view planning in advance could stifle the child's development. This movement was encouraged by William Kilpatrick at the time when learning was teacher dominated and learners were passive recipients of knowledge. According to the activity model, children learnt by doing and were free to move around in the classroom. Another popular supporter of the model is Herbert Kohl (1969). He believes that open classroom is a place where learners can, "...make choices and pursue what interests them." The teacher also finds that "the things that work best for him are the unplanned ones, the ones that arise spontaneously because of a student's suggestion or sudden perception."

Open classroom model emphasizes freedom of the child from teacher control and from a rigid curriculum. The child should choose goals as per needs, interests and aptitudes and thus choose his own curriculum. The model places great faith in the child's ability and advocates learner autonomy.

Weinstein and Fantini Model

This model is based on the belief that teachers generate new content and techniques by keeping the learner central to the whole process. They can assess the relevance of the existing curriculum, content and the instructional methods employed. Based on the assessment the curriculum is modified to meet the learner needs.

First step in the process of curriculum development is to identify the learner group. Since learners are taught in groups, their interests and characteristics form the basis of teaching. This is followed by identification of student concerns, and because of this the model is called non-scientific or non-technical. Concerns of the learner determine

organization of content. More than demands of the subject matter they organize ideas and content based on learner needs. The sources of content could be – Learners' feelings, students' identity, experiences of a growing person, and students' knowledge of the social content. The type of content will determine the skills to be developed by the students. The last stage is the identification of teaching procedures. The model aims to develop feelings of self-worth in the learners after interaction with content and teachers. It emphasizes enhancement of self-image of the learner and instills in them a confidence and belief in themselves [Ornstein and Hunkins, 1988].

Roger's Model of Interpersonal Relations

Carl Rogers (1979) has developed a model for changing human behaviour which can be used for curriculum development. In this model the emphasis is on human experiences rather than content or learning activities. He believes that by interacting in a group, learners can solve their problems. They express themselves honestly and explore each other's feelings. Rogers contends that the group experience "permits individuals... to know themselves and each other more fully than is possible in the usual social or working relationships, the climate of openness, risk taking and honesty generates trust", which permits each participant to "test out and adopt more innovative and constructive behaviours." In short, the model promotes curriculum change by changing the participants involved in curriculum development" [Ornstein and Hunkins, 1988].

Check Your Progress

Notes: a) Write your answers in the space given below.

b) Check your answers with the one given at the end of the unit.

4. How would you differentiate between technical and non-technical approach to curriculum development?

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5. Explain the philosophy of Open Classroom Model.

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Having discussed the technical and non-technical models of curriculum development let us now take up the major tasks of curriculum development.

16.8 BASIC TASKS OF CURRICULUM DEVELOPMENT

Curriculum development is a comprehensive activity that accomplishes the following:

- facilitates analysis of purpose
- designs a programme

- implements a series of related experiences
- aids in the evaluation of this process (Wiles and Bondi, 1989)

In other words curriculum development is not merely the process of introducing new courses or updating courses but is a process involving some basic tasks.

The basic tasks involved in the development of curriculum are –

i) Establishing the Philosophy

ii) Assessing Needs

iii) Formulating Goals and Objectives

iv) Selecting Curriculum Experiences

v) Organising Content

vi) Selecting Appropriate Instructional Strategies

vii) Evaluating Learning and Instruction

Let us discuss each step of curriculum development in the order given above.

16.8.1 Establishing the Philosophy

All curricula should be based on a philosophy. Philosophy helps in the formulation of goals and objectives and gives a definite direction to the curriculum. The beliefs, assumptions and values related to the programme and teaching should be written down. The philosophy should be considered critically in the context of the institution, whether school or university. The philosophy could be stated in terms of belief statements, which have a rationale for action. This would help in managing and coordinating various activities. For example:

- students should learn to be critical thinkers
- the programme is one of training students for a profession
- faculty are responsible to encourage independent student learning

This process could be initiated by examining the mission statement, through group interaction like brainstorming, by considering professional programme accreditation requirements or taking views of faculty members. However, a consensus should be arrived at on the philosophy. Once the philosophy is identified and stated in simple belief statements, the ground is ready for formulating goals that will guide the process of development.

16.8.2 Assessing Needs

A basic process underlying curriculum development is needs assessment. The main purpose of needs assessment is to determine the degree to which the stated philosophy of education is being implemented and the degree to which the goals are being achieved. Objective methods and techniques should be used for data collection. However the needs assessment would involve views, perceptions of students, parents and educators and hence its nature could be subjective. The target group of students is identified. Their characteristics are reviewed. The common characteristics as well as those instrumental in determining the nature of the courses are considered. For example –

- Students are highly motivated
- Students are Hindi speaking
- Students have enrolled only to gain literary skills

16.8.3 Formulating Goals and Objectives

After developing a philosophy and knowing the needs we now have to transform needs into goal and objective. Goals are the general statements of the result of

educational endeavours and form the basis of educational planning. Objectives are more specific than goal statements and when objectives are stated in behavioural terms they become even more specific. We can say goals are general and objectives are specific. "Goals provide a philosophically unified structure that undergirds and relates all aspects of the learning situation from the development of an overall curriculum plan to lesson plans in the classroom." [Wiles and Bondi, 1989]. Specifically stated behavioural objectives evolve from goals. The basic process is –

Philosophy ——→ Goals ——→ Broad Objectives ——→ Specific Objectives

The goals and objectives should be listed out. They should reflect the knowledge, skills and values or attitudes expected of the students once they complete the programme. For example:

- Students will be able to critically review research reports in the discipline
- Students will be able to analyze personality theories
- Students will be able to develop essays on specified themes.

A behavioural objective lets the learner know what is expected of him and it describes what the learner does at the time of learning.

16.8.4 Selecting the Content

The process of content selection should be a cooperative endeavour. It should enable students to apply the gained knowledge in their day-to-day life. The criteria for content selection should apply to the goals and specific objectives. Some curricularists place great emphasis on self-sufficiency of content, and that too in the most economical manner. According to Israel Scheffler (1970) three types of economy should be ensured – economy of teaching effort and educational resources; economy of students' efforts and economy of subject matter's extent of generalization. It helps the learners to become self-sufficient and self-reliant. The curriculum should be significant to the degree to which it contributess to basic ideas, concepts, principles etc. and to the development of particular learning abilities. There are disagreements among curriculum planners in terms of what each considers to be significant and how it contributes to learning. The selected curricular experiences should also be valid, that is authentic and accurate. Validity of content should also be examined in relation to the set goals and objectives. Another criterion for selecting learning experiences is interest, especially to the advocates of learner centred designs. The curriculum should be selected with the students' interest in mind. Although students' interests are transitory, yet teachers should identify such interests which if addressed shall help them to develop as socially useful citizens. The utility criterion for content selection pertains to the usefulness of content. The definition of usefulness is determined by the person's philosophical orientation. For example, a person favouring problem centred design would consider the curriculum useful if the learner can apply it to current political, social problems, etc.

Another obvious criterion is learnability, which is related to the appropriateness of the selected content. The content should be within the range of student experiences. The content should be easily grasped and assimilated by the learners for whom it is intended.

Feasibility criterion for content selection makes it binding upon the curriculum planners to consider the content with reference to time allowed, the available resources, the academic expertise, the financial resources, the political climate etc. Even though curriculum planners may feel they have a vast body of content to choose from yet there are many limiting factors like – number of working days in a calendar, size of the classroom etc. [Ornstein and Hunkins, 1988]

16.8.5 Organizing the Content

Once the content is identified, it needs to be organised in a particular sequence so as to realise the laid objectives. The organisation of content determines to a great extent the direction which learning will take. If a curriculum lacks systematic organization, the desired objectives cannot be attained. Logical organization of the curriculum is a difficult and complex task. It requires an in-depth understanding of the teaching learning process. According to Hunkins and Ornstein (1988) "Faced with organizing content for the curriculum, programme planners usually use two organizers – local and psychological. In following the logical organization, they organize content according to certain rules, to make it manageable. Certain concepts are central to the content, and others are pre-requisites to other concepts. In economics, for example, the concepts of supply and demand are major conceptual organizers. Without these concepts, the concepts of capital and labour or the market place cannot be grouped." Some curriculum planners consider a psychological organisation, which considers the manner in which people process information, and learn. They believe that content should be organised such that the concrete is experienced before the abstract or simpler concepts precede complex ones and so on. This is the psychological principle of content organisation.

A well-organized curriculum would ensure a definite sequence, continuity and integration of the various aspects. These concepts have been discussed earlier when dealing with dimensions of curriculum design.

16.8.6 Selection of Curriculum Experiences

Selection of appropriate curriculum experiences has always been a difficult aspect of curriculum development. The teacher must have flexibility in selecting curriculum experiences and should carry out the instructional programme. Today the definition of curriculum has broadened and distinction between the erstwhile curricular and extra curricular experiences has diminished. Curriculum planners need to provide a balanced instructional programme providing varied learning experiences. According to Wiles and Bondi (1989) these experiences can be classified as follows:

1. Personal development of the individual
2. Skills for continued learning
3. Education for social competence.

Using such a classification, curriculum planners can develop a curriculum with a variety of learning experiences. For the personal development phase the activities to be included could be physical activities according to age and maturity, activities leading to a better understanding of the self etc. The skills for continued learning would pertain to diagnosis of learning needs and the instructional programme could be structured on the basis of individual characteristics. The social competence category would include learning experiences in the subject areas like Science, Mathematics, and Humanities etc. Such a classification system would also be a guide to the classroom teachers to ensure provision of a balanced instructional programme.

A crucial factor is selection of curriculum experiences is that of relevance. The chosen experiences should reflect recent knowledge and also social and cultural trends of the times, so that it proves to be useful. The curriculum planner should be attuned to the changing times to equip the students to face the future.

Wiles and Bondi (1989) have given useful criteria for selection of curriculum experiences, in the light of overall goals and objectives of the programme. They believe that experiences should be:

i) Valid in light of the ways in which knowledge and skills will be applied in out of school situations.

ii) Feasible in terms of time, staff expertise, facilities in the school etc.

iii) Optimal in terms of students learning the content.

iv) Capable of allowing students to develop their thinking skills and rational powers.

v) Capable of stimulating in students greater understanding of their own existence as individuals and as members of groups.

vi) Foster in the students openness to new experiences and tolerance for diversity.

vii) Facilitate learning and motivate students to continue learning.

viii) Capable of allowing students to broaden their interests and address their needs.

ix) Facilitate total development of students in cognitive, affective, psychomotor, social and spiritual domains.

Such criteria will help in selection of appropriate learning experiences for a given set of objectives. The educational environment thus generated will address social and security needs of the learners and instill in them appreciation and empathy for others. It will stimulate meaningful student activity and allow for a range of activities that facilitate learning.

In order to translate the selected curricular experiences into reality, the teacher should also decide the instructional strategies to be adopted. They should list out the method and materials to be used. For example: lecture and questioning, group work, library readings, field trips etc.

These strategies should be analyzed in terms of the degree to which they:

i) meet the needs of the student population and

ii) match the nature of programme goals and objectives

The strategies should be in alignment with the learning expectations, i.e. the strategies/ the opportunities for learning as expressed in the objectives.

Let us now take up the last stage in the process of Curriculum Development and that is Evaluation of the Curriculum.

16.8.7 Evaluation of the Curriculum

Evaluation aims to determine the extent to which the objectives of the curriculum have been achieved through its implementation. The tripolar relationship between objectives, learning experiences and evaluation can be expressed in the following diagram.

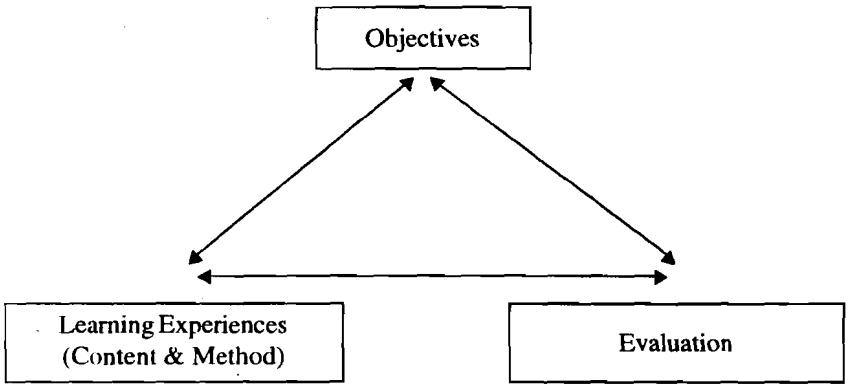

Fig. 16.4: Interdependence of Curricular Components.

Curricular components are interdependent and cannot be scrutinized in isolation. The outcome of curricular evaluation provides useful feedback for improvement of the curriculum. Evaluation can be carried out during the process of curriculum development itself. This is called formative evaluation. The results of formative evaluation give feedback on every aspect of the curricular component, which can thus be modified, accepted or rejected.

A curriculum should provide for evaluation of learning and evaluation of instruction.

Evaluation of Learning – The techniques by which student learning is to be evaluated should be listed out. E.g.

- essays
- multiple choice tests
- performance in the library
- independent projects

These techniques should be analyzed as to the degree to which they:

- meet the needs of the described student population
- match the instructional methods and materials used and
- match the programme goals and objectives, as well as goals of the institution. The general rule is that one must 'test what is taught'. Evaluation should not only reflect the content of the course and programme, but also the nature and type of expected learning, e.g. critical thought cannot be measured with short answer tests nor proficiency at cricket with multiple choice questions.

Evaluation of Instruction – Evaluating the effectiveness of instruction in the course is as important as evaluation of learning. Provision should be made in the curriculum for these techniques, e.g. –

- student ratings of instruction
- review of student work
- anecdotal comments, letters and records
- peer review of course outlines.

All aspects of the programme should be regularly and systematically reviewed for making changes and improvements in the instructional programme. [Curriculum Development, Instructional Development Centre, Queens University, 2001]

Check Your Progress

Notes: a) Write your answers in the space given below.

b) Check your answers with the one given at the end of the unit.

6. List three criteria for content selection for curriculum development.

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7. Explain the validity criteria for selection of Curricular Experiences.

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Hence the process of curriculum evaluation follows the same cyclical course as curriculum development and can be represented by the diagram below –

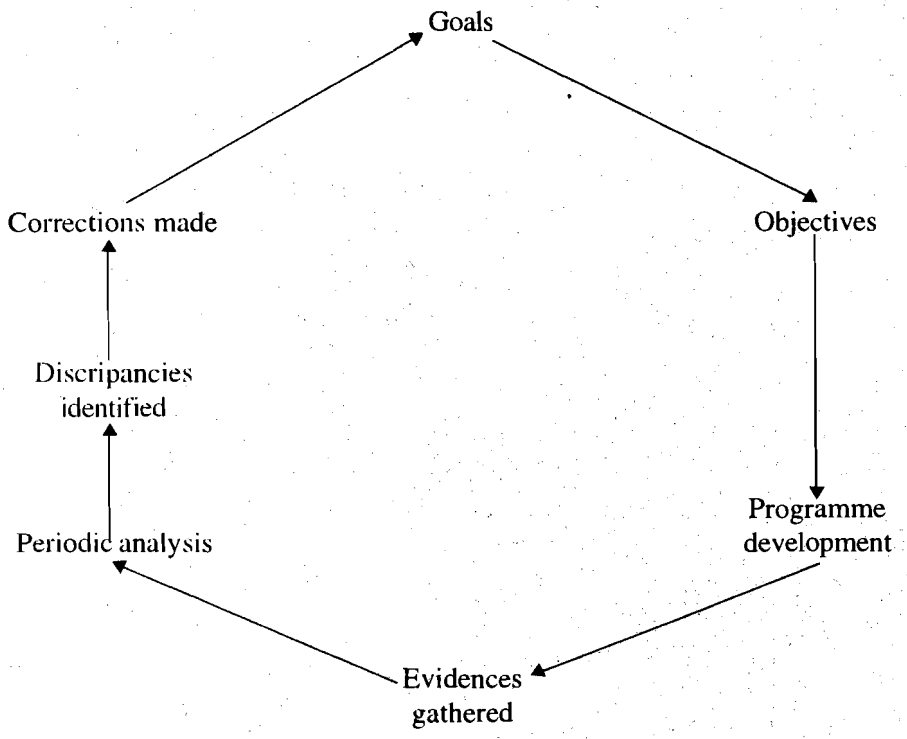

Fig. 16.5 : Cycle of Curriculum Development.

(*Source*: Wiles and Bondi, 1989)

16.9 LET US SUM UP

Let us summarize what you have studied in this unit.

We discussed the components of curriculum design and concluded that a philosophy forms the basis of these designs. The sources of curriculum design were discussed and also how they influence education. A curriculum design has to be considered on the basis of certain dimensions which give a definite shape to the curriculum. The unit also focussed on curriculum approaches which indicate the organization of different learning situations in a curriculum, in order to achieve the desired objectives. This was followed by a discussion on models of curriculum development, which were categorised as technical and non-technical modes. In the last section, we deliberated upon the scientific steps involved in the process of curriculum development.

16.10 UNIT-END ACTIVITIES

1. Describe the use of different approaches to curriculum development.
2. Try to work out a definition of 'Curriculum development' in your own words.

16.11 SUGGESTED READINGS

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16.12 ANSWERS TO CHECK YOUR PROGRESS

1. a) A curriculum design defines the components that are to be included in a curriculum. Every curriculum design consists of goals and objectives, the content, methods and strategies for providing learning experiences and appraisal of the design. The four components are interrelated and influence each other.

   b) Curriculum should be based on an understanding of society and it should evolve in response to the changing needs of the society.

2. Four curriculum design dimensions are – Scope, Integration, Sequence and Continuity.

3. It is a method of organizing subject matter from two or more disciplines into a broader field. Its chief features are –

   - Curriculum is not limited to one particular discipline
   - Teachers have flexibility to choose content
   - Learners can interrelate concepts from different areas

4. The technical scientific approach uses an intellectual and rational approach which follows a systematic procedure for development of curricula. Such a systematically designed curriculum can be evaluated. The non-technical, non-scientific approach emphasizes the subjective and personal aspects, i.e. the learner. It is an activity-oriented approach and learners are involved in planning the curriculum.

5. The open classroom model advocates activity oriented learning in which the learner learns according to his abilities, interests and pace. His development is not stifled by a rigid curriculum nor by teacher domination.
6. The three criteria for content selection for curriculum development are –
   a) The content should be significant to the extent to which it contributes ideas and concepts to the learner.
   b) It should be valid in relation to the desired goals and objectives, and
   c) The curriculum should be selected with the students' interest in mind.
7. Validity of content refers to its authenticity i.e. the selected content should be correct and accurate. The validity should be ensured in relation to goals and objectives of the curriculum i.e. the outcome is as intended.