B.Ed., I YEAR

KNOWLEDGE AND CURRICULUM

(Course – 4)

STUDY MATERIAL FOR

PONDICHERRY UNIVERSITY

COMPILED BY

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UNIT I: KNOWLEDGE AND CURRICULUM

Knowledge, wisdom –meaning – distinction between knowledge and wisdom– knowledge with skill, Information - Meaning of and need for curriculum – Domains of curriculum – Epistemological basis of Curriculum – forms of knowledge–logical grammar of disciplines – Curriculum organization - subject matter and curriculum organization – types of curricula: subject centred, co-related, fused, core and student centered – their relative values and weaknesses – Differentiating curriculum framework, curriculum and syllabus; their significance in school education – role of the textbook

INTRODUCTION

Curriculum is a conceptual scheme and a dynamic entity in the school setting. Since many educationists attribute many things to the curriculum, a generally acceptable definition of curriculum has so far become elusive. In ancient societies, need for a curriculum has not acute, because the knowledge to be mastered was limited. But, his today's context, when the available body of knowledge is enormous and complex, the curriculum has assumed great significance, since the area of knowledge a person should learn has to be marked out in view of the practical impossibility of an individual mastering all available knowledge.

DATA, INFORMATION, KNOWLEDGE, WISDOM

The concept of transforming Data, to Information, to Knowledge, to Wisdom has been utilized in education, numerous studies and by industries. There is a subtle difference between data and information: Data are the facts or details from which information is derived. Individual pieces of data are rarely useful alone. For data to become information is derived. Individual pieces of data are rarely useful alone. For data to become information, data needs to be put into context.

DATA

1. information, often in the form of facts or figures obtained from experiments or surveys, used as a basis for making calculations or drawing conclusions
2. information, for example, numbers, text, images, and sounds, in a form that is suitable for storage in or processing by a computer

INFORMATION

1. definite knowledge acquired or supplied about something or somebody
2. the collected facts and data about a particular subject
3. a telephone service that supplies telephone numbers to the public on request.
4. the communication of facts and knowledge

5. computer data that has been organized and presented in a systematic fashion to clarify the underlying meaning
6. a formal accusation of a crime brought by a prosecutor, as opposed to an indictment brought by a grand jury

KNOWLEDGE

1. general awareness or possession of information, facts, ideas, truths, or principles
2. clear awareness or explicit information, for example, of a situation or fact
3. all the information, facts, truths, and principles learned throughout time
4. familiarity or understanding gained through experience or study

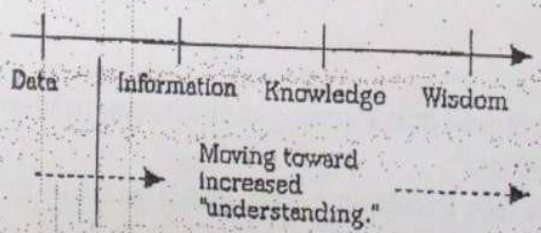
WISDOM

1. the knowledge and experience needed to make sensible decisions and judgments, or the good sense shown by the decisions and judgments made
2. accumulated knowledge of life or in a particular sphere of activity that has been gained through experience
3. an opinion that almost everyone seems to share or express
4. ancient teachings or sayings

Various people have thought carefully about varying definitions of these four terms and produced their own analysis of the four terms. The following is quoted from Jacques Steyn's Website:

Information consists of data, but data is not necessarily information. Also, wisdom is knowledge, which in turn is information, which in turn is data, but, for example, knowledge is not necessarily wisdom. So wisdom is a subset of knowledge, which is a subset of information, which is a subset of data.

The terms Data, Information, Knowledge, and Wisdom are sometimes presented in a form that suggests a scale.



However, in no sense do these four terms define some sort of linear equal-interval scale. They do, however, help us to discuss the design of an educational system as well as current and potential uses of computers. For example, we all accept that computers can be used for the input, storage,

processing, and output of data. But, there is considerable disagreement about whether a computer can have knowledge or be knowledgeable--or have wisdom and be wise.

Educational Implications

It appears that one of the issues in defining the terms data, information, knowledge, and wisdom is the role of understanding and meaning making. One can memorize data, and parrot it back. One processes data to produce information. Parroting such chunks sounds more like being educated--but this can be done with little understanding or ability to make use of the information. Knowledge is a step further on the scale. It involves understanding and ability to make use of the data and information to answer questions, solve problems, and make decisions, and so on. Wisdom has to do with using one's knowledge in a responsible (wise) manner.

When schools teach for wisdom, they teach students that it is important not just what you know, but how you use what you know--whether you use it for good ends or bad.

KNOWLEDGE AND WISDOM

"Where is the wisdom we have lost in knowledge? Where is the knowledge we have lost in information?" —T.S. Eliot.

Knowledge is gathered from learning and education, while most say that Wisdom is gathered from day-to-day experiences and is a state of being wise. Knowledge is merely having clarity of facts and truths, while wisdom is the practical ability to make consistently good decisions in life.

Wisdom and Knowledge, both recurring themes in education, related but not synonymous. The dictionary defines wisdom as "the ability to discern or judge what is true, or lasting. "knowledge, on the other hand, is "information gained through experience, reasoning or acquaintance. "knowledge, can exist without wisdom, but not the other way around. One can be knowledgeable without being wise. Knowledge is knowing how to use a gun, wisdom is knowing when to use it and when to keep if holstered.

Knowledge comes from learning and Wisdom comes from living.

MEANING OF KNOWLEDGE

Knowledge means Facts, information, and skills acquired through experience or education; the theoretical or practical understanding of a subject: a thirst for knowledge her considerable knowledge of antiques. Knowledge is a familiarity, awareness or understanding of someone or something, such as facts, information, descriptions, or skills, which is acquired through experience or education by perceiving, discovering, or learning.

Knowledge can refer to a theoretical or practical understanding of a subject. It can be implicit (as with practical skill or expertise) or explicit (as with the theoretical understanding of a subject); it can be more or less formal or systematic.[1] In philosophy, the study of knowledge is called

epistemology; the philosopher Plato famously defined knowledge as "justified true belief", though "well-justified true belief" is more complete as it accounts for the Gettier problems. However, several definitions of knowledge and theories to explain it exist.

Knowledge is information of which someone is aware. It is also used to mean the confident, understanding of a subject, potentially with the ability to use it for a specific purpose.

Knowledge is knowing or understanding something especially about a particular subject. Knowledge is something that a can be known, information.

Knowledge acquisition involves complex cognitive processes: perception, communication, and reasoning; while knowledge is also said to be related to the capacity of acknowledgment in human beings.

"Epistemology" is the study of knowledge and how it is acquired. Science is "the process used every day to logically complete thoughts through inference of facts determined by calculated experiments."

CONCEPT OF KNOWLEDGE

Knowledge is gained through learning facts. Someone who knows a lot about a certain subject, such as science or history, can be considered knowledgeable. Information found online or in books can help someone expand her knowledge on a topic.

- Knowing or understanding something, especially about a particular subject.
- Having awareness of facts and/or truths.
- Something that can be known, information.

DEFINTION OF KNOWLEDGE

Sir Francis Bacon, "Knowledge is Power"

Knowledge with Skills, Information

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MEANING OF WISDOM

Wisdom is the ability to make correct judgement and decisions. It is an intangible quality gained through our experiences in life. Wisdom is the state of being wise (i.e) capable of

determining what is wise Vs what is unwise. Wisdom is the ability to use knowledge and experience intelligently.

Wisdom comes from observing experiences and learning from them in a way that affects future decisions and behavior; it is the capacity to see the truth of a matter, in spite of any illusions or distractions. For example, someone might spend beyond his means and end up in unnecessary debt, but if he is wise this will only ever happen to him once, as he will have learned from his mistake; in the future, he will save his money before he spends it carelessly. An even wiser person might avoid such a mistake altogether by listening to the wisdom of others or by wisely choosing to seek information (knowledge) on how to properly manage finances.

CONCEPT OF WISDOM

- The state of being wise
- The ability to use knowledge and/or experience intelligently
- Capable of determining what is wise vs. what is unwise
- A saying, philosophy, or other advice that is considered wise

DIFFERENCE BETWEEN KNOWLEDGE AND WISDOM

AREA	KNOWLEDGE	WISDOM
Meaning	Knowledge is information of which someone is aware. Knowledge is also used to mean the confident understanding of a subject, potentially with the ability to use it for a specific purpose.	Wisdom is the ability to make correct judgments and decisions. It is an intangible quality gained through our experiences in life.
Time	Allows for change in response to new information or analyses. Seeks to always improve.	Timeless. Wisdom is "Who we are" vs. "What we do" Wisdom governs choice, pursuit of knowledge, communication and relationships.
Source	Learning, education, science, reflection, reasoned and logical thought.	Self. Intuition. Our personal experience. Wisdom defines and refines our character. "Character is simply who we are and is the persona and identity of everything we do."

Correlation between Knowledge and Curriculum

Wisdom and knowledge are linked. Wisdom is enhanced by knowledge and the ability to acquire knowledge effectively. But wisdom is also the ability to use knowledge in a practical and productive manner. Knowledge is often considered to be "externally generated," meaning that it comes primarily from outside sources, such as books, classroom lectures, videos, etc. On the other hand, wisdom is deemed to come primarily from "internal sources," meaning one's own introspective thinking, analysis, and judgment. Wisdom cannot be acquired and applied without knowledge, but knowledge isn't necessarily guided or enhanced by wisdom.

Applying Knowledge and Wisdom

The application of knowledge is often a matter of finding or knowing the right facts, meaning that there is a distinct difference between the "right" and "wrong". facts. In contrast, wisdom often requires much more than facts to perceive and choose the "right" action or to avoid the "wrong" action. The factors involved may include speculation, feelings, and moral or ethical values. In this general sense, applying knowledge tends to be a much simpler process.

An example of applying knowledge can be found in the development of nuclear bombs, which were the end result of thousands or perhaps millions of steps. Following this development, the decision to drop atomic bombs on Hiroshima and Nagasaki is sometimes understood as being wise, under the notion that these acts shortened World War II and thus saved thousands or even millions of lives. In terms of knowledge, the end result (the atom bomb being made) is obvious, but in terms of whether applying that knowledge was wise or not is still unclear and subject to intense debate.

KNOWLEDGE WITH SKILL

Skill - the ability to do something that comes from training, experience, or practice

Knowledge - awareness of something : the state of being aware of something

In connection with teaching knowledge transfer means a simple transfer of information like reading a book, delivering lectures, etc.

In the case of skill, need to make sure that the student practices with proper mental and physical attitudes.

Both require specific skill on the part of the skill, while for knowledge information delivery becomes important where as for skill it is the individual person skills become far more important.

To teach skills you need to foster a disposition to want to use the skill. Students need encouragement to be the possessors of a skill. However, to teach facts you don't necessarily need to teach the associated disposition to be appraised of those facts.

"A skill is being able to do something whereas knowledge is knowing about or understanding something."

Humans' knowledge can be defined as a complex product of learning process which is partly theoretical and practical. Theoretical knowledge means to own concepts, definitions, rules, principles and theories while practical (operative) knowledge includes abilities, skills as well as rutines and habits.

MEANING OF CURRICULUM

The term curriculum has been derived from Latin Word "currere" which means a "race course" or a runway on which one runs to reach a good. According to curriculum is the instructional and the educative program by following which the pupils achieve their goals, ideals and aspirations of life.

As the process of education goes on expanding, its scope also gets increased. Rapid expansion of knowledge, increasing student population, radical changes resulted in many of the educational concepts due to the application of innovative research studies etc. have joined together to provide new interpretations to the term "Curriculum".

Thus curriculum is to be constructed as a dynamic entity that goes on changing with time.

It is curriculum through which the general aims of a school education receive concrete expression.

Traditional concept:

The traditional curriculum was subject centered while the modern curriculum is child and life-centered..

What is Curriculum?

- A plan for learning.
- The experience of the learner.
- A system for dealing with people and the process.
- A field of study.
- Subject-matter or contents.
- Curriculum is a dynamic, ever changing series of planned learning experiences.

Curriculum as

- a document describing content, aims and the learning situation.
- a system which deals with content of human action and curriculum decisions.
- An area of activity.

CONCEPT OF CURRICULUM

There is multiplicity of concepts of curriculum since educationists give their own different interpretations of the content and functions of curriculum. In this area, three different thinkers, which represent three major contributions to the body of knowledge on curriculum, have been discussed. They throw light on the scope of 'curriculum' and the diversity of curriculum problem.

The first concept, en enunciated by Albert Oliver, refers to curriculum merely as 'the educational program' consisting of three important elements, such as studies, activities and guidance.

The second concept, described by Phillip Phenix is based on a carefully thought out scheme of values, which constitute the aims and objectives or purpose of education.

The third concept, given by Hilda Taba, looks at curriculum as the function of the public school; she lists the three functions as preserving and transmitting of cultural heritage, serving as an instrument for transformation of culture, and working as a means for individual development.

The curriculum is the heart of schooling, the education process. All resources available at school e.g: the school building, equipment, various varieties of instructional materials including books in the library exist for just one purpose for supporting effective implementation of the curriculum. The entire set of classroom actives the co-curricular programme as well as the entire evaluation schedule follows from the school curriculum.

The word "Curriculum" has been used in many ways. It usually stands for:

- A school's written courses of study and other curriculum materials;
- The subject content taught to the students;
- The course offered in a school; and
- The totality of planned learning experiences offered to students in a school.

Modern concept of curriculum:

Modern education is the combination of two dynamic processes. The one is the process of individual development and the other is the process of socialization, which is commonly known as adjustment with the social environment.

DEFINTION OF CURRICULUM

The term "Curriculum" has been defined by the scholars and educationists. Some of the definitions have been given below sto understand the nature and characteristics of curriculum.

According to Tyler, "A Curriculum can be defined as a plan for action or a written documen that includes strategies for achieving desired goals or ends".

Curriculum is an organized set of formal education and/or training intentions_ pratt.

"Curriculum is a tool in the hands of the artist (teacher) to mold his material (pupils) according to his ideas (aims and objectives) in his studio (school).

Morroe _ "Curriculum includes all those activities which are utilized by the school to attain the aims of education...."

Crow and Crow _ "The curriculum includes all the learners experiences in or out side school thatare included in a program which hasbeen devised tohelp him developmentally emotionally, socially, spiritually, and Morality".

T.P.Nun _ " The curriculum should be viewed on various forms of activities that grand expressions of human spirit and that are of the greatest or most permanent significance to the wide world".

- A plan for learning (Taba,tyler).
- The experiences of the learner (Camphell).
- A system for dealing with people and the processes (Giles).
- A field of study (Hunkins).
- Subject-matter or contents (Orenstein).

Simply, curriculum refers to all learning experiences planned by the teacher for his students inside and outside the classroom.

NEED AND IMPORTANCE OF CURRICULUM

The curriculum includes the totality of experiences which are planned for children and young people through their education, wherever they are being educated. Curriculum for excellence aims to achieve a transformation, and it is meant.

- To provide knowledge which exist due to diversity of knowledge explosion.
- Existence of living creature, to understand the phenomena/facts to lead life. (curriculum and life is inseparable).
- Life goes on changing, our curriculum should not be static.
- Curriculum changes according to the needs of the society at the dynamic of subject matter.
- Curriculum which is properly organized enhance student teaching and learning.
- Determines the actual boundaries of the knowledge need to be imparted through educational units.
- Cultural reproduction/transmission can be made through curriculum.
- Curriculum is serving the society. It has potentials of generating the future society.
- Educate equally all citizens.
- To create productive society.
- To be self sufficient enough.
- To manage source of energy, conservation and re-generation.
- To make wise choice and decision.

- It helps in development and democratic values.
- It helps in development and good citizenship.
- It helps in development of character.
- It helps in development of interest- skill, abilities , attitude , aptitude and requirements of students.
- It helps in development of criteria for teacher.
- It helps in development of selection of methods-teaching-how to teach-what to teach etc.

CHARACTERISTICS OF CURRICULUM

- Curriculum is a tool in the hands of the teacher which used to realize the objectives.
- It is pivot, around it whole human knowledge concentrates.
- It includes those activities which are used by the school to attain the purpose of education.
- The curriculum is made up of everything that surrounds the learner in all his working terms.
- It has been described as the environment in motion (physical, social and psychological)
- Curriculum includes total learning experience that a child receives at a school.
- All the learning inside or outside the school which is planned and guided by the teacher.
- The curriculum is continuously evolving.
- The curriculum is based on the needs of the people.
- The curriculum is democratically conceived.
- The curriculum is the result of a long-term effort.
- The curriculum is a complex of details.
- The curriculum provides for the logical sequence of subject matter.
- The curriculum complements and cooperates with other programmer of the community.
- The curriculum has educational quality.
- The curriculum has administrative flexibility.

DOMAINS OF THE CURRICULUM

Curricular domains are the typical "subject" or developmental learning addressed from the early learning years through school age. The domains are interrelated. For example, a language activity may also impact learning in the area of social skills. The typical domain areas include:

- Language and Literacy
- Math
- Personal and Social
- Physical Development
- Science
- Social Studies
- Fine Arts: dance, music, visual

EPISTEMOLOGICAL BASIS OF CURRICULUM

Epistemology : It concerned with the theory of knowledge, especially with regard to its methods, validity, and scope, and the distinction between justified belief and opinion.

It means that Study of the grounds, nature, and origins of knowledge and the limits of human understanding. It deals with issues such as how knowledge is derived and how it should be tested and validated.

Therefore Epistemology is the study of knowing. It deals with the nature of knowledge, how do we know things, what do we know, why we know, is what we know true, and what are the limits of knowledge.

Therefore, Epistemology, it is also a branch of philosophy that deals with the origin, nature, and limitations of know e ge, has fuelled debate in education for years. The argument over academic versus utilitarian curriculum.

Epistemology highlight how various epistemological aspects have been applied in the curriculum development and implementation processes at the different (School/college/University) level.

Epistemology of the Curriculum means it should demonstrate certain amount of connection with all things that exist. It questions what knowledge is an ow i can acquired, an the extent to which knowledge pertinent to any given subject or entity can be acquired.

- Epistemology is the study of knowing.
- Epistemology of the Curriculum means it should demonstrate certain amount of connection with all things that exist. Curriculum contents exist in order to transmit knowledge and to lay a foundation to facilitate knowing or meaning construction.
- As different professional curriculum programs aim at providing different traits in learners, it is important that educators attempt to study and know the types of knowledge and knowing that may lead to the development of the needed traits;
- Educators need to evaluate their curricula in order to ascertain whether their design and implementation have provisions to make learners acquire knowledge and knowing.

FORMS OF KNOWLEDGE

Knowledge is what is perceived to be reality or truth. Nickols (2000a) argues that knowledge is a mix of framed experiences, values, contextual information, and expert insight. The notion of knowledge can be objective, observable and communicable to one individual and likewise knowledge can be subjective, unique, and internal to another individual. Knowledge as being explicit, implicit, tacit, procedural, declarative, strategic, conceptual, logical-mathematical, physical, automatized, semantic and social. The term knowledge has various uses depending on the perspective in which it is used. From this perspective, when discussing knowledge, it should be done in context.

Epistemological aspects of curriculum, development and implementation.

There is no absolute truth. This paradigm emphasises that knowledge should be looked at in a democratic manner. Current reality should be subjected to constant challenge.

Explicit knowledge is formal, systematic and codified usually digitized in form of documents such as books, and reports. Thus, it is articulated in form of text that may contain specifications and scientific formulas. In laboratory practice like in other areas of practice, explicit knowledge is the most commonly used knowledge. It is used in routine teaching and learning.

Implicit knowledge is reflected in observable behaviour or even in performance of tasks. It can be teased out from the individual's performance by experts using task analysis.

Tacit knowledge refers to the knowledge that people have but is. not, written down. It is thus difficult to articulate and tends to be shared through interactions, storytelling and discussions with individuals having this knowledge and expertise. Tacit knowledge is acquired as a result of individuals' experience and some individuals may not even be aware that they have this knowledge. The utility of tacit knowledge is not as broad as that of explicit knowledge.

Procedural knowledge refers to understanding of how to carryout procedures normally based on implicit memory or long-term memory of specific skills and procedures. *It denotes knowledge of how to complete tasks.*

Declarative knowledge like procedural knowledge, declarative knowledge, refers to the ability to describe, interpret and explain how to perform certain tasks (Nickols, 2000a). Declarative knowledge helps learners to develop procedural knowledge. It is easy to validate, identify, transfer, and slow to acquire as it requires interpretation of its acquisition process.

Strategic knowledge is the ability to perceive the right time and the right reason for doing things (Nickols, 2000b). It is used by Laboratory managers in their routine day-to-day activities as well as in planning. In clinical laboratories, strategic knowledge is used when making decisions. It helps laboratory professionals in identifying which operations are of emergency nature and those that are routine.

Conceptual knowledge refers to the manner in which one represents major concepts in a system. It explains relationships and understandings of a system. Conceptual knowledge involves making sensory observations, logical correlation of data, abstractions, assimilations, problem-solving, reasonable judgement and understanding of humans.

Physical knowledge refers to ability to demonstrate a clear understanding of the physical properties of objects or events. Lovat (2004) argues that physical knowledge is a good under-standing of facts and features such as size, shape, texture, weight, volume, and dimensions.

Practical-technical knowledge refers to what people know and can do. It includes the understanding of the structure of work activities in organizations. It is the knowledge that individual use when deciding to take some action basing on their beliefs and values.

Social knowledge involves the enhancement of cultural or social groups to come to agree by convention. It is based on the belief that knowledge can be acquired through social interaction especially when people engage into dialogue, conversation, copying, practicing, having feelings and establishing connections and relationships with others.

MEANING OF CURRICULUM ORGANISATION

Process of selecting curriculum elements from the subject, the current social life and the students experience then designing the selected curriculum elements appropriately so thy they can can from the curriculum structure and type.

AIMS OF CURRICULUM ORGANISATION

A well-designed curriculum is organized to achieve its aims. It:

a) Helps every learner to make progress, building on their experiences both within and outside of school.
b) Is based on a clear and shared understanding of how learners learn.
c) Recognizes the dynamic interplay between content, pedagogy and assessment.
d) Provides a coherent and relevant set of learning experiences, both in and out of lesson time.
e) Provides for the full range of capabilities and aspirations.
f) Uses expertise from outside the teaching staff to enrich learning.
g) Uses time flexibly to meet learning needs.
h) Provides opportunities for learners to experience the benefits of different learning approaches; including learning through subject disciplines, thematic approaches, areas of study of their own choice and problem identification.
i) Provides opportunities for learners to learn on their own, in a team, in a large group and with virtual collaborators.
j) Provides opportunities for learners to learn in a range of places and to benefit from resources in the local community.
k) Includes global, national, local and personal dimensions.
l) Reflects and makes use of current technology.
m) Meets statutory requirements.

Criteria for effective curriculum organization

1. Continuity
2. Sequence
3. Integration

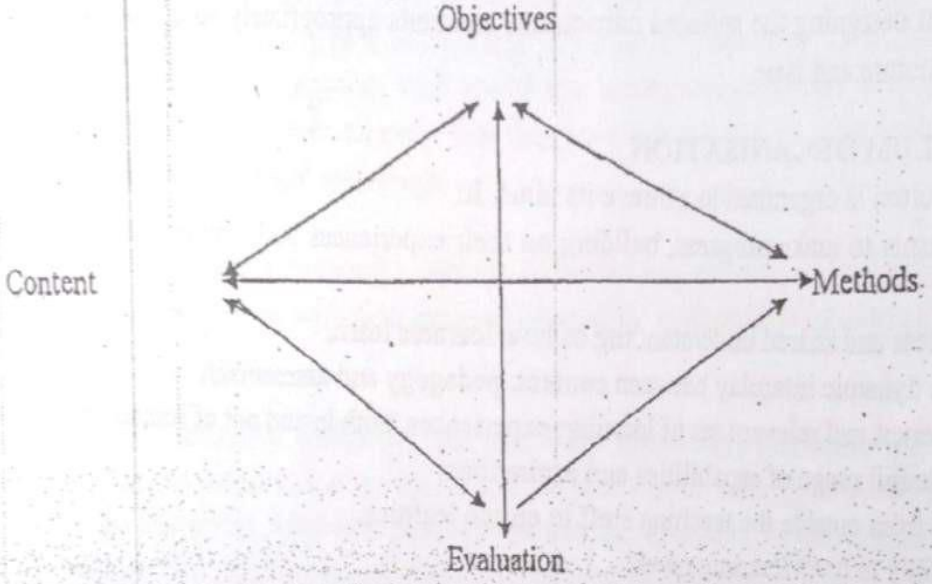
STRUCTURE OF CURRICULUM

Curriculum consists of five dimensions or components. They are considered to be the major elements of a curriculum. They are:

*The learner and the society

*Aims and objectives
*Content or subject-matter
*Teacher methodology
*Evaluation

The five components are inter-dependent. The structure of the curriculum is compared to the system of the human body such as muscular, respiratory, and circulatory, nervous, etc. Any alteration in one system affects the structure and functioning of the others. The structure of the curriculum is as follows.



The learner and the society

The curriculum is concerned with the learner and the society in which he or she lives. The curriculum puts emphasis on both individual and the society needs.

Aims and objectives

Aims and objectives are statements that reflect the needs of the learner and society. They serve as a basis for selection of subject- matter and student experiences.

Content or subject- matter

Contents or subject- matter are facts, concepts or principles for developing knowledge, skills and values among the learners. Contents are organised to achieve the aims and objectives and the learner's requirements and the demands of the society. Subject- matter is usually presented through text- books and other learning experience.

Teacher methodology

It refers to the techniques and methods chosen by the teacher to present the subject-matter. Teacher methodology results in learning outcomes. Students acquire knowledge, skills or attitudes through teacher methodology.

Evaluation

Evaluation measures learning outcomes of the learner in the terms of the proposed objectives. Evaluation provides information on student's learning. It helps the teacher for taking up next instructional activities.

TYPES OF CURRICULUM

1) Subject Centred Curriculum.
2) Student Centred Curriculum.
3) Fused (or) Integrated Curriculum.
4) Correlated Curriculum.
5) Core Curriculum.

SUBJECT-CENTRED CURRICULUM

The subject-centred curriculum organisation is traditional, and most schools organise their work near this pole on the continuum.

What is a subject? A particular stream of knowledge, otherwise known as subject discipline is shortly referred as 'subject'. The amount of knowledge in the world, relative to man's ability to handle it, has been tremendous. This knowledge being enormous, has been classified into bodies or branches called 'subjects'. The subjects that are presented in the school are few, but these subjects are found to be fundamental to the learner, and help him with a basis to proceed further.

Assumptions of Subject-centred Curriculum

1. The acceptance of Jerome Bruner's contention that the child's cognitive functioning is essentially the same as the adult scholar differing chiefly in a matter of degree.
2. The belief that disciplines organised according to their structure would allow for the accommodation of the explosion of knowledge
3. The belief that the major role of the schools is to transmit the cultural heritage from generation to generation.
4. The belief that most significant parts of this cultural heritage can be grouped into 'subject-disciplines'.
5. The assumption that each subject has an internal order which can be presented in sequence from simple to complex. [Eg. After learning addition and subtraction in arithmetic, one may proceed to multiplication and division.]
6. The assumption that this subject-centred organisation of curriculum will enable the student to develop the capacity to deal with the problems as he meets them.
7. The belief that the teacher-dominant teaching methods are superior to other methods adopting a democratic approach.

8. The belief that this pattern of curriculum organisation has stood the test of time and hence has a merit.
9. The belief that subject-centered curriculum organisation provides security for the teacher, learner, and the parent because of its time-honoured status.

Important Features of Subject-centred Curriculum

Objectives: The objectives in a subject-centred curriculum are stated as 'expected learning outcomes' expressed in behavioral terms. Objectives serve as the basis for content selection in the curriculum process. Drill and memorisation are emphasised to learn and remember the content.

Contents: The contents for different subjects in the curriculum are selected by a committee of experts and teachers and presented in well organised lessons. They usually contain facts, concepts, generalised principles, established processes and skills in the subject area. As the contents are well established truths, they are universally applicable.

Structure: Each subject is in its own 'compartment', with little genuine concern for things outside its walls. University scholars often talk about (and even attend) 'interdisciplinary' meetings but. although, they may be willing to peep through windows in their walls. they seem seldom to conceive to breaking the walls down.

Instructional Materials: Text-books prepared by experts in accordance with the syllabus, serve as the commonly used learning materials. Generally students prefer to follow the same text books which their teachers use.

Learning Activities: Learning activities are mostly verbal involving listening, reading, writing and reciting.

Grouping: Generally teachers provide instruction in the class or large gathering.

Time and space: Time spent in the classroom is considered highly valuable. Instructional time is divided into units of 45 or 60 minutes called 'periods' and every subject is allotted specific periods in the instructional time-table.

Teacher Methods: Teacher is considered as an expert in the subject. Contents are presented through teacher-centred methods like lecture, discussion and demonstration.

Evaluation: Evaluation is periodically attempted to assess students' mastery of the subject-content (academic achievement) through oral and verbal tests. Marks / grades are allotted to indicate the proficiency achieved.

Criticisms Against Subject-centred Curriculum

1. The constant accumulation of knowledge and the increasing tendency of schools to add more subjects to the curriculum, have resulted in eroding the confidence of the teacher in his ability to handle the newly added contents / subjects. Further, to give attention to these different areas of study

newly added in the curriculum, it becomes necessary to chop up the school day into short unrelated blocks of time.

2. As efforts are taken to increase the number of pupils attending the school, among the children of school-going age, the problems of individual differences have been accentuated. These differences make it untenable to have a common curriculum for all.

3. A basic tenet of the subject-centred approach is that learning the information presented will eventually transfer to life situations,. Psychologists raise serious doubts upon the likelihood of such automatic transfer, especially when knowledge is broken up into discrete parts.

Subject emphasis fails to take into consideration the needs and interests of the learners, and, as psychology has shown, interest affects learning.

Overconcern with the cultural heritage leads to the neglect of current social activities and problems. This may lead to educated people functioning with no social awareness and responsibility.

6. Concern with structure of disciplines tends to fragment the curriculum rather than integrate learning.

7. The prevailing methodology and the nature of the learning material, foster rote memorization rather than a process of critical 'thinking'.

VARIATIONS IN SUBJECT-CENTRED CURRICULUM

The subject-centred curriculum puts emphasis on the subject-matter. The subject-matter can be designed in several ways, chief among them are:

i) Separate-subjects curriculum

ii) Correlated curriculum

iii) Broad-field curriculum / Integrated curriculum / Fused curriculum

iv) Core curriculum

SEPARATE-SUBJECTS CURRICULUM (Tamil)

When separate subjects are studied, their boundaries are distinct and clear. Each subject is treated as a discrete or independent area of the curriculum.

For example, geography, history and economics are separate subjects in the social science curriculum.

Geology, biology, physics and chemistry are offered as separate subjects in the science curriculum. Separate subjects make no attempt to inter—relate among school subjects.

CORRELATED CURRICULUM (Tamil)

Correlated curriculum attempts to relate the various school subjects, by dwelling the concepts learnt in one field to build and reinforce those in other fields. 'Basic Education' and 'Project Method' give importance to correlated Curriculum.

Examples:

i) When 'calculus' is learned in mathematics, during the same year if topics like 'Moment of Inertia', 'Centre of gravity', 'Magnetic field intensity', 'Electric Current flow and its intensity' etc. in physics are taught, it becomes easy for students to learn these concepts with proper understanding.

ii) Celebration of Sankaranthi (Pongal festival in Tamilnadu) can be correlated with harvest festivals all over the world, the transit of the sun, change in seasons, impact on agricultural prices etc.

iii) Gardening gives opportunities to learn about various types of soil, earthworms, seed selection, planting, observing plant growth, use of manure, watering, plant-protection, harvesting, storing, marketing etc. in a 'scientific' manner.

Correlated curriculum facilitates students acquiring greater degree of unity in their knowledge.

THE 'INTEGRATED' OR 'FUSED' OR BOARD FIELD CURRICULUM (Tamil)

The 'Integrated' or 'FOsed' curriculum (also known as 'Broad fields) occupies the mid-position on the continuum formed with 'subject-centred' and 'student-centred' curricula as its two poles. Subjects and students, are taken as the two sources of the curriculum and the major focus of this pattern of curriculum organisation is the linking of these two sources. The basic consideration here is of ways to bring into a broad organisation those subject-matter elements which have certain inherent relationship. The form that emerges depends upon what is used as the basis for unification.

Types of Fusion

Two types of fusion can be attempted.

- Several courses, formerly separate, have been merged into one, such that boundaries between individual subjects become invisible.

Examples

I) Biology is the result of the fusion of botany, zoology, anatomy and bacteriology

ii) Mathematics is the fusion of arithmetic, algebra geometry and trigonometry

iii) Social studies is the fusion of history, geography and civics.

➢ Instead of blending the subjects, some unifying ideas such as principles and generalisations could be used for fusion For example 'The Progress of Democracy', 'The Growing Interdependence of nations', 'Environmental Pollution' etc could serve as the general principles to integrate content elements from different subjects. For example under the general principle 'Environmental Pollution' the following content elements from chemistry, Physics, Geography and Biology could be integrated.

i) Air polluting chemical substances and their source! (Chemistry)

ii) Thermal and nuclear power generating stations producing air pollution by causing increased suspended particulate matter (SPM) and hazardous radiations (Physics)

iii) Air pollution caused by natural sources like volcanic eruptions. deflation of sand and dust, forest wild fires etc. (Geography)

iv) Decomposition of biological wastes from vegetation; and living organisms (Biology)

Values of Fusion of Subjects

- It fosters actual fusion of closely related subject contents so that pupils get whole and complete knowledge.
- Bringing out the 'ties' among subjects make student! learning more meaningful.
- In integrated curriculum, as central ideas are discovered while learning, pupils retain them for long. It is far superior to learning 'chopped up facts' in different subject following the disciplinary approach in curriculum organisation and forget them soon as they are lacking in apparent ties.
- By having several related subjects blended in the curriculum, the student gets a better picture of the scope of man's knowledge and some corrtmon principles as well as the unique features of each discipline.

Weakness in Fusion

- The compressing of several subjects into a broadfield, does not necessarily bring about real integration.
- In fused curriculum students get sketchy knowledge only; students do not develop indepth knowledge as the unique features of respective subjects are watered down and the rigour of discipline is lost.
- The presentation of generaFif,ations, by-passing the details, complicate pupils' learning by making it more abstract.
- Programmes that centre around life themes too tend to be artificial in that choices are adult determined and at best arbitrary compartments and can not match true life situations related to the present day youths.

CORE CURRICULUM

The Core Curriculum was introduced with rather ambitious aims. This type of curriculum was supposed to develop integration, to serve the needs of students and to promote active learning and significant relationship between life and learning. In this sense it was an epitome of all preceding designs.

Core curriculum refers to the essential or common learning experiences provided compulsorily to all the students along with other general subjects, no matter whether a student learns science or history, but core curricular components are compulsory to all the students.

Core relies more on structuring. The plan is to develop unified studies based upon the common needs of the learners and organised without restriction by subject matter. The key words are (i) 'unified', (ii) 'common needs' and (iii) 'without restrictions'.

Today India faces several problems such as population growth, environmental pollution, erosion of cultural heritage and national integration. To make the students understand and solve problems, the New Education Policy (NEP, 1986) has suggested ten core curricular components for students from I to X standards. They are:

1. History of India's freedom movement
2. Constitutional obligations
3. Contents essential to promote national identity
4. India's common cultural heritage
5. Equalitarianism, democracy and secularism
6. Equality of sexes
7. Protection of environment
8. Removal of social barriers
9. Observance of the small-family norm
10. Inculcation of scientific temper.

At the secondary level, where the term is most often used, it should be noted that core does not comprise the entire school day, only that part devoted to general education. The general education proportion decreases throughout the high school years; thus, the core occupies less of the student's time as he progresses towards graduation.

In the part of the day meant for general education, at first there is the core period in which problems of common concern are studied. In the second part of the day, there are physical education, club activities all valuable for pupils regardless of their special needs and plans. However, there is a close correlation between the core periods and the activity periods. This plan presents many opportunities to the subject-specialists (subject-matter experts) and core teachers (experts in activities and student understanding) to work together and facilitate the integration of learning.

It is suggested that attention be focussed more on core as a concept than as an administrative arrangement. The contention here is that the essence of the curriculum lies in the concepts behind the core idea which should be incorporated into the teaching-learning situation.

Assumptions of Core-Curriculum

The core curriculum is based on the following assumptions:

1. Interests, concerns and needs expressed provide pupils a valid basis for curriculum content and are central to the learning process.
2. Learning involves changes in behaviour which are brought about through experiences.
3. A democratic society values the worth and dignity of the individual.
4. A democratic society requires citizens who are skilled in the decision-making process.
5. Higher priority must be given to the development of learning skills and the clarification of values, rather than to the acquisition of specific information in the subject-matter areas.
6. Learning is experiences are enhanced when the learner is encouraged and helped to draw upon all appropriate sources of information.
7. The extent and nature of classroom activity should determine the allocation of time.
8. The teacher's primary role should be that of an advisor, a facilitator, a friend and a fellow learner.
9. Teaching and many aspects of guidance are complimentary function of the teacher.
10. To bring about continuous improvement in learning, all concerned parties should be involved in evaluation

STUDENT-CENTRED CURRICULUM (Tamil)

The most serious objection to the subject-centred curriculum is that organisation of knowledge into 'subjects' tend to set up barriers to the understanding of relationships and inter-relationships. A major reaction to the subject-centred curriculum was to swing to the other extreme of centering the programme on students rather than on subjects. In its extreme form, this idea held that education is life, and since life is changing, there could be no fixed curriculum. Under this interpretation curriculum organisation was easy because the curriculum is to be built (i.e. learning experiences are to be set) upon what the pupils are interested in and ensure the development of the whole personality of the child.

As Nisbet says, the learner-centred curriculum puts emphasis on the maximum growth of the pupils. The concerns of the children are the basis for organising the children's school programme. With emotional involvement of the pupil in learning, the whole learning process would become more vivid and valuable.

The student centred programme meets the criticisms against subject organisation. It is related to pupil interest, learners are active, activity is built around psychological problems rather than logical topics, the programme is flexible rather than rigid, democratic, rather than authoritarian and it cuts across subject lines. But in actual practice, the vagaries of the immature minds of pupils brings up

an erratic curriculum, too inexact for educational security. This plan might be characterised as 'unstructured', whereas in curriculum organisation there must be planning and structure.

In Kelly's (1977) views, a child-centred education should take into account (i) the needs of the learner (ii) growth of the learner and (iii) interests of the learner.

John Dewey, the American educationist advocated child-centred education characterised by (i) providing meaningful learning experiences by allowing children to interact with the environment. (ii) educating children according to their stages of growth and development. (iii) teaching to suit the interests and abilities of children and (iv) providing adequate opportunities for children to socialise, inquire and experiment, construct and innovate.

Important Features of Student-centred Curriculum

i)Structure: Student-centred curriculum cares more for the individual learners and development of their potentials. Importance is given for the inculcation of original thinking, practical skills and free expression of one's own ideas. Learning experiences are planned to promote personality development.

ii)Objectives: In student-centred curriculum objectives are not planned in advance. They are formulated on the basis of the needs of students, their interest and developmental stage and as such they are highly flexible.

iii)Contents: Contents are selected based on student's needs, ability to learn age. aptitude and previous experiences. Lessons are written using words familiar to the students. Rote learning is not encouraged; direct experiences are insisted to facilitate original thinking.

iv)Teaching and Learning: Time allotted for teaching gets reduced, as more time is allowed for self-learning. There is active interaction between the teacher and students which creates a good learning environment. Audio-visual materials and practical demonstrations are increasingly used in the classroom instruction. Students are encouraged to undertake projects, prepare assignments and learn by self-efforts.

v)Grouping of Learners : Students are organised into several learning groups based on their achievement in the subject and interests exhibited. One of the members of the group direct the activities. Students learn through group activities. Formation of groups will vary for different subjects.

vi)Time Schedule and Space: Time-table is flexible and is unlike that followed in subject-centred curriculum. Time is allotted depending upon the nature and difficulty level of the lesson. Learning may take place in different places like laboratory, library, workshop, gymnasium etc. in addition to the classroom. Whenever necessary, field trips and educational tours are organised. Such flexibility is not possible in a subject-centred curriculum.

vii)Role of the Teacher: In student-centred curriculum teacher is mainly a facilitator. The social distance between the teacher and students will decrease. Teacher will not hesitate to accept student's ideas.

viii) Evaluation: Apart from teacher's evaluation of students, there is provision for self-evaluation by the students themselves. Students are assessed for how they learn and not merely by what they have learnt and this approach encourages students to improve their learning techniques.

Limitations of Student-centred Curriculum

- Students at secondary level are not mature enough to know their future needs. Further, they may also exaggerate their abilities. A curriculum based on students' present needs and interests may not meet their future needs.
- There is a danger that essential contents to be learnt and values requiring training may not find a place in student-centred curriculum.
- The aspirations and needs of students may widely vary and as such developing and implementing student-centred curriculum is very difficult.
- As the contents for a student-centred curriculum are organised on psychological basis and not in a logical sequence, they may lack continuity.
- In subject-centred curriculum instructional materials and aids which are available in the market could be used; but in student-centred curriculum the subject teacher himself has to prepare them.
- Teachers adopting student-centred curriculum need to have wider scholarship and better resourcefulness

MEANING OF CURRICULUM FRAME WORK

A Curriculum Frame Work is an organised plan or set of standards or learning outcomes that defines the content to be learned in terms of clear, definable standards of what the student should know and be able to do.

CONCEPT OF CURRICULUM FRAME WORK

A curriculum framework is part of an outcome-based education or standards based education reform design. The framework is the first step, defining clear, high standards which will be achieved by all students. The curriculum is then aligned to the standards, and students are assessed against the standards. As compared with traditional education which is concerned only about delivering content, a standards based education reform system promises that all will succeed if all are held to high expectations. When the standards are reached, there will be no achievement gap where some groups are allowed to score lower than others, or the disabled are offered different opportunities than others. All will meet world class standards and be qualified for good colleges and trained for good jobs which pay good wages. In a traditional education system, the curriculum was defined by those who created textbooks rather than government bodies which assembled groups of stakeholders to create standards based on consensus of what students should know and be able to do.

In some states, curriculum frameworks have been adopted based on traditional academic standards rather than outcome-based constructivist standards, but many frameworks were originally or still based on student-centered learning and constructivism such as reform mathematics, whole language and Inquiry-based Science which have been controversial in some states and communities. High school graduation examinations tie awarding of diplomas to demonstration of meeting the standards set out in the frameworks.

MEANING OF SYLLABUS

Syllabus is a part of curriculum. Syllabus is a plan of learning experiences of a particular subject/Unit/activity to be provided to the learners to meet their needs to a particular standard in a year / semester.

Syllabus is a document which derives its contents form the curriculum.

- ✓ It is a summary or an outline of a course of studies.
- ✓ It is a programme of lessons
- ✓ Syllabus is a designed by the experienced teachers.

Syllabus includes

- Objectives of teaching the particular subject.
- Subject matters in the particular subject.
- Methods, materials and media
- Evaluation and guidance
- References

Purpose of Syllabus

- Fair and impartial understanding between the instructor and students.
- Setting clear expectations of material to be learned.
- Setting clear expectations of behaviour in the classroom.
- Providing a road map of course organization.

DEFINTION OF SYLLABUS

The syllabus is a "contract between faculty members and their students, designed to answer students' questions about a course, as well as inform them about what will happen should they fail to meet course expectations."

ORGANISATION OF SYLLABUS (APPROACHES OF SYLLABUS)

There are different methods (or) approaches to organize mathematics syllabus.

- ✓ LOGICAL
- ✓ PSYCHOLOGICAL
- ✓ TOPICAL
- ✓ SPIRAL

LOGICAL APPROACH

The arrangement of content in the logical or natural sequence is called logical organization. It is based on the teacher's expertise and experience. The contents are organized logically in the following ways. Sequences from,

- Known to unknown
- Simple to complex
- Concrete to abstract
- Observation to reasoning

EXAMPLE:

- ➢ Set theory, relations and functions.
- ➢ Fundamental concepts of set theory are essential to learn relations and functions.
- ➢ Similarly understanding of the concepts of functions is necessary to study functions.

PSYCOLOGICAL AP PROACH

The content is organized according to the psychological needs of the students. The student's age, maturity, interest, needs, level of understanding, power of assimilation and previous knowledge are base to select context.

For EXAMPLE, the school curriculum is organized in different stage as,

- In nursery schools, the child manipulates the world through action using sensory organ
- The child begins to represent the external word through symbols. Language is essential for thinkingat this stage.
- Next stage in the class room, extensive use of audio visual aids, demonstration, practical work, field works are recommended
- The child is capable of carrying out mental operations and tackles any problem. the context and experiences promote logical reasoning.

TOPICAL APPROACH

The topic introduced in a class to be completed in the same class.

Topical arrangement needs all the portion of a topic graded according to the increasing under of difficulty.

- It is not a psychological approach
- Some topics are more complex and difficult for the students to understand Content oriented, not child oriented.

SPIRRAL APPROACH

In this method a topic is split up into smaller independent units according to the Order of difficulty, suiting the mental capacity of the students and the units are arranged progressively broadening and deepening of the contexts throughout school period.

EXAMPLE

In algebra, solution of equation one unknown, two unknown, three unknown and practical problem are given one year after another.

- It provides revision and time, to master learning
- Graded according to difficult
- Helpful for understanding and appreciate its use to other subjects.

DIFFERENCES BETWEEN CURRICULUM AND SYLLABUS

CURRICULUM	SYLLABUS
1. Curriculum is the complete set of taught material in a school system.	Syllabus is the content, the list of topics, concept to be taught.
2.It is prescriptive.	It is descriptive.
3.Curriculum prescribe the objective of the system.	Syllabus describes the means to achieve them.
4.Curriculum is for a course.	Syllabus is for a subject.
5.Curriculum is the subset	Syllabus is the subject of curriculum.
6.Curriculum give a more focused outline for a particular course.	Syllabus gives a more focused outline for a particular subject.
7.Base line for syllabus.	Base line for text book
8.More useful for administration, general guidance.	More useful of teacher.
9.Broad	objectively.

KNOWLEDGE & CURRICULUM (¾)

Unit 2: PRINCIPLES OF CURRICULUM

Aims, goals and objectives of curriculum –curriculum design and its components –curriculum development: technical-scientific approach and Nontechnical- Nonscientific approach – curriculum implementation and its models

INTRODUCTION

The term curriculum derives from the Latin word 'currere' which means a kind of route which the learner travels. All the activities going on the school or out side of the school is called curriculum. It is basic to the intellectual, physical, moral and emotional development of the child.

CURRICULUM

- Curriculum comprises all the learning which is planned and guided by the school, whether it is carried on in groups or individually inside or outside of the school. - Kerr
- Curriculum is the totality of experiences that pupils receive through the manifold activities that go in the school, in the classroom, library, laboratory, workshop, play ground and in the numerous informal contacts between the teachers and pupils.

  -The Secondary Education Commission (1952-1953)
- Curriculum is a tool in the hands of the Artist (Teacher), to mould his/her materials (Students), according to his/her ideals (objectives) in his/her studio (College/ School). -Cunningham.

MAJOR DEFECTS IN THE PRESENT CURRICULUM

- Examination oriented
- Text Book based examinations
- Emphasis on theory not practical
- Heavy syllabus
- Rote learning is encouraged
- Not to life oriented
- Not helpful to vocation
- Not developing the whole personality

PRINCIPLES OF CURRICULUM

Curriculum organisation is a scientific process which involves basic principles on which its credibility exists. It is not just collection of topics, because it reflects ethos (philosophy / culture) of the society: themes of the subject and learning variability.

1. Principle of Child-Centeredness

Curriculum is mainly for the students. So, the age, interest, capability, capacity, aspiration, needs and psychology of the learner should be taken in to an account.

2. Principle of Community-Centeredness

The social needs and the local needs of the learner should be taken in to account while we construct the curriculum. It should be reflect the values of democracy, ethos and main concerns of the country.

3. Principle of Balance / Integration (Child = Community)

It is also called principle of Integration. The curriculum should integrate:

1. Cognitive, affective and psychomotor objectives and abilities
2. Knowledge and experience
3. Objectives and content
4. Child's activity and needs with the society needs and activity.

It should be related to the social environment of the students. Here the equal/ balance importance should be given to the need of the Child and need of the Community.

4. Principle of Need

Curriculum helps in fulfilling the various needs of the learner. Each learner has his needs which are generally related to physical, emotional and social development. A well planned curriculum provides all such opportunities through many fold activities which satisfies the need of the learner. It should not be merely the academic but it should include all other equally important activities too.

5. Principle of Utility

One of the purposes of education is to prepare the child for living and learning. This is the most important consideration, so that the child can live a fruitful and self-fulfilling life. Curriculum should provide rich experiences, both academic and social to the students. The content, activities and experience of the curriculum at a particular stage / grade are useful to the learner for the further/higher studies.

6. Principle of Creativity

It should place the pupil in the place of the discoverer and provision should be made the creative type of activities.

7. Principle of Preservation/Conservation

It should help in the preservation /conservation and transmitting the knowledge, traditions, standards of conduct on which the culture and civilization depend.

8. Principle of Variety

In a classroom there are different types of the students on the basis of intelligence, ability, aptitude and attitude.

The curriculum should satisfy the variety of knowledge, varying interest, needs of the students.

9. Principle of Elasticity / Flexibility

Flexibility is an important parting curriculum development. It should given enough time and sufficient chance to the students, to search their own examples and experience from the surroundings.

10. Principle of Contemporary Knowledge

Curriculum should give the modern or current knowledge and theories to the students. That will give the knowledge of utilization of local resources (salt, plants, soil) to the students.

While organizing the curriculum the following principles also should be followed:

11. Principle of Sequencing
12. Principle of Continuity
13. Principle of Accuracy
14. Principle of Adequacy
15. Principle of Interest
16. Principle of Readiness
17. Principle of Meaningfulness
18. Principle of Continuous Evaluation.

AIMS, GOALS AND OBJECTIVES OF CURRICULUM

Education is purposeful. It concern with outcomes that are expressed at several levels

- Aims : the most general level
- Goals: reflect the purpose with outcomes in mind.
- Objectives: reflect the most specific levels of educational outcomes

AIMS OF CURRICULUM

DEFINITION OF AIMS

Wilson(2004) defines AIMS as " general statements that provide direction or intent to educational action".

MEANING OF AIMS

While goal is the ultimate destination to be reached, aim is the intermediate milestone on the way to goal, directing our journey. A goal is constituted of many aims which provide both shape and direction to more specific actions designed to achieve some future products or end behaviour. Thus aim is more specific and attainable as compared to goal.

Every school subject has separate aims. Each of the school subject like Tamil, Science, Mathematics etc. when taught for a period of 45 minutes, students acquire certain amount of

knowledge in the concerned subject; understand the concepts contained in the topic taught; get the ability to apply the concepts in their day-to-day life. These different abilities that are to be developed in children as a result of teaching a subject are otherwise known as aims or general objectives of instruction (G.I.0) of that particular school subject.

Examples :

1. The pupil knows the different steps involved in curriculum construction.

2. The pupil understands the need for developing curriculum before actually commencing the instructional sessions.

3. The pupil understands the need to keep ready the curriculum before the teaching process.

Aims of school

- Develop moral character and personal discipline.
- Encourage creative and critical thinking.
- Broaden scientific and technological knowledge.
- Foster love of humanity.
- Teach the rights and duties of citizenship.
- Promote respect for human right.
- Strengthen ethical and spiritual values.

Aims of Elementary Education

- Provide knowledge and develop skills , attitudes,values essential to personal development and necessary for living in and contributing to a developing and changing society.
- Provide learning experiences which increase the child's awareness of and responsiveness to the changes in the society.
- Promote and intensify knowledge, identification with and love for the nation and the people to which he belongs.
- Promote work experiences which develop orientation to the world of work and prepare the learner to honest and gainful work.

Aims of Secondary Education

- Continue to promote the objective of elementary education.
- Discover and enhance the different aptitudes and interests of students in order to equip them with skills for productive endeavor and or to prepare them for tertiary schooling.

Aims of Tertiary Education

- Provide general education programs which will promote national identity, cultural consciousness, moral integrity and spiritual vigor.
- Train the nation's manpower in the skills required for national development.
- Develop the professions that will provide leadership for nation.
- Advance knowledge through research and apply new knowledge for improving the quality of human life and respond effectively to changing society.

GOALS OF CURRICULUM

MEANING OF GOALS

A number of subjects are taught in schools. They are taught for some reasons which may be called purposes. The purposes may be called goals. The goals are the final destination which the students are expected to reach. Goals are statements of end points or outcomes of education.

Following are the examples for setting goals of School Curriculum

Student

i) achieves fundamental academic skills

ii) qualifies for higher education

iii) acquires logical reasoning, and the skills to solve the problem before him through scientific approach

iv) knows the ways and means to keep himself healthy.

Generally goals are wide spread; it is common for all subjects; cannot be attained only through school activities.

CHARACTERISTICS OF GOALS

1. Goal shows the ultimate aims of the process of education;
2. Goal is common for all subjects; it can not change from subject to subject.
3. Goal cannot be reached by the school educational programmes alone.
4. As goal is broad and wide, it could not be achieved within a specific period of time; hence it loses its significance in the context of school education.

DEFINITION OF GOALS

According to Wilson(2005), goals are " the statement of educational intention which are more specific than aim.

OBJECTIVES OF CURRICULUM:

The values, aims and purposes of the curriculum should be at the forefront of the minds of everybody who contributes to the curriculum experience of young people. These should be the driving force shaping the decisions about what is learnt, how it is learnt, and how time, people and spaces are organized. The programmes of study should be used as the vast and inspiring resources they are for serving the educational goals we value.

Teachers need to consider what they want pupils to learn. They then should consider how best to help their pupils learn those things-the teaching and learning activities. When those decisions have been made, choices need to be made about who should be involved in the teaching and learning

process, when learning would take place and for what periods of time, and where pupils would learn these things best.

If a school wants successful learners who have enquiring minds and think for themselves to process information, reason, question and evaluate. Then it needs to:

i. Give pupils purposeful reasons to find things out.
ii. Know what interests pupils and build curriculum experiences around that.
iii. Connect learning to issues that affect young people.
iv. Teach pupils the skill of research and analysis.
v. Help pupils to experience connecting ideas (right versus wrong as well as right versus right) and give opportunities to discuss and debate.
vi. Promote concepts such as pupils as researchers, pupils as reporters.

If a school wants confident individuals who become increasingly independent, are able to take the initiative and organize them. Then it needs to:

1) Create situations where pupils have to look after themselves (within their capacities).
2) Show pupils strategies for managing time, workload, etc.
3) Give pupils opportunities to make decisions and to experience the consequences of those decisions.
4) Provide opportunities for pupils to contribute their own ideas.
5) Give pupils real responsibilities.
6) Allow pupils to make mistakes and to learn from them.

Questions for senior managers and curriculum planners to ask when developing the school's curriculum:

The following questions are intended to help senior managers and curriculum planners as they develop a whole-school curriculum that supports the aims.

- What discussion has taken place in your school about the values that underpin your curriculum?
- What discussion has taken place in your school about the aims of your key stage 3 curriculum?
- Do you have a clear picture of the knowledge, skills, understanding and personal qualities your 14-years-olds will have?
- All schools have statements that outline what they think is important for their learners. To what extent is this used to shape the curriculum experience of learners in your school?
- Do you have a clear vision of what key stage 3 should be delivering for your pupils?

Does everybody in the school understand their contribution to achieving the curriculum aims?

Types of educational objectives

- Taba(1962) states that there are two types of objectives:
-

1 General objective:

Those objectives that describe school- wide outcomes.

E.g Improving students skills

2 Specific objective:

Those objectives that describe behavior to be attained in a particular unit, a subject/course or particular programmed

E.g. cognitive, affective and psychomotor domain

Three Big Domain of Objectives

- Cognitive
- Affective
- Psychomotor

CURRICULUM DESIGN

MEANING

'Curriculum Designing' is the process that is. the steps usually followed to produce curricular plans and 'Curriculum Design' is the product that emerges as a result of that planning procedure. The process or procedure creates the end result, a document or plan for achieving desirable changes in student behaviour. *Curriculum design is that document which reveals how the components of curriculum viz. i) subject, ii) co- curricular activities and (iii) Cultural development are arranged or organised into a pattern or structure.*

Curriculum planners decide about objectives of the curriculum and then proceed to select the subjects to be taught for a given level of school education. For example, at the primary school level, environment of the locality and local history will be taught. At the secondary level, studen'ts are taught general science and social science. After prescribing the subjects of study for different levels of education, the subjects to be taught for students in each standard are decided and delimited. Co-curricular activities and activities which will promote desirable qualities in students are appropriately integrated with different subjects and described in the curriculum frame work which goes by the name 'Curriculum Design'. Syllabus is developed for each subject within the parameters of the curriculum giving the details of the topics (lessons) arranged sequentially.

DEFINITION

According to *Ornstein &Hunkins, Ronald Doll's* view, "Curriculum design draws from curriculum theory, knowledge theory, social theory, political theory and learning theory,'(2014, 154).

Components of Design

To design a curriculum, we must consider how its parts interrelate,"(Ornstein & Hunkins,2014,p.153). The question, why do we educate, allows one to examine their own visions and philosophies. Curriculum design today has been molded by our past and has intentions to shape our future.

COMPONENTS OF CURRICULUM DESIGN

Designing curriculum comes from a starting point of a plethora of philosophical, theoretical and practical points of views. Curriculum design has four major components that began with Harry Giles's "Eight Year Study".

4 Components	Questions
1. Objectives	1. What should be done?
2. Content	2. What subject matter should be included?
3. Learning experiences' activities should be employed?	3. What instructional strategies , resources, and
4. Evaluation appraise the results of the curriculum?	4.What methods of instruments should be used to

SOURCES OF CURRICULUM DESIGN

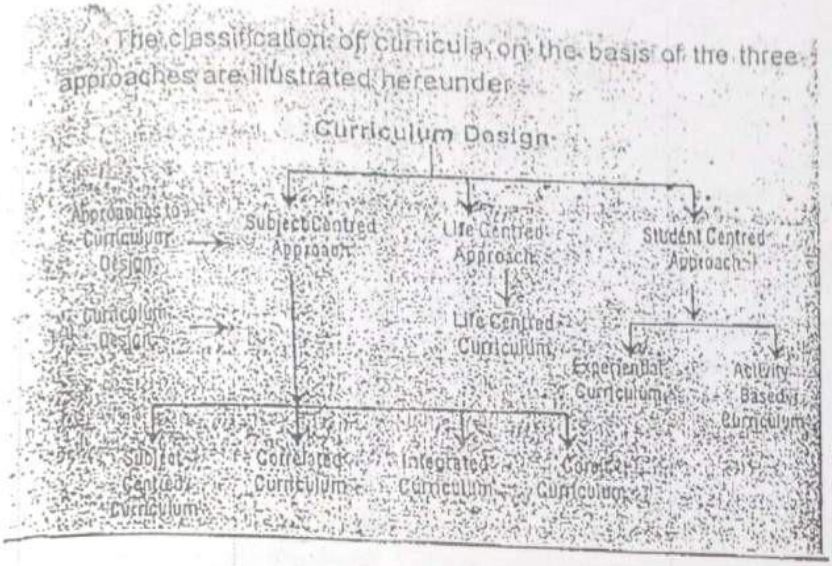
- Science as a source
- Society as a source
- Moral doctrine as a source
- Knowledge as a source
- The learner as a source

REPRESENTATIVE CURRICULUM DESIGNS

- *Subject Centered Design*: focus is on knowledge and content, most widely used design , subject centered (Plato's academic theory).
- *Subject Design:* Oldest and best known According to Ornstein & Hunkins, "In subject matter design, the curriculum is organized according to how essential knowledge has developed in various subject areas."(2014,p.162).
- *Discipline Design:* Separate subject design, "Students experience the disciplines so that they can comprehend and conceptualize , with the subject-matter design, students ae considered to have learned if they simply acquire information,"(Ornstein & Hunkins,2014,p. 163).
- *Broad Field Design:* (Interdisciplinary design: The collaboration and integration of content multiple subject matter.
- *Correlation Design:* All subjects linked together however still emphasis the importance of each subject matter.

- *Process Design:* Emphasizes teaching for intelligence, The procedural knowledge of all subject matter

The classification of curricula on the basis of the three approaches are illustrated hereunder



CURRICULUM DEVELOPMENT

MEANING

The term 'Curriculum Development' was used first by Saylor and Alexander in their work 'Planning curriculum for schools' (1973) as interchangeable with 'Curriculum Planning'. According to them curriculum development refers to the creation of relevant experiences and materials to be used by teachers to bring about desired behavioural changes in students; they are the product of curriculum planning. It involves the techniques and methods for developing, designing, implementing, evaluating and improving the curriculum. Briefly stated curriculum development involves curriculum construction and updating it periodically.

Curriculum	Curriculum Construction + Constantly
Development	updating and refining the curriculum

Curriculum development, thus is a continuous process.

DEFINITION

It is defined as the process of selecting, organizing, executing and evaluation learning experiences on the basis of the needs, abilities and interests of the learners and the nature of the society or community.

CHARACTERISTICS OF CURRICULUM DEVELOPMENT

Effective curriculum development includes the principles of co-operation, collaboration and shared responsibility. Following are the five major characteristics of the process of curriculum development.

(i) Interpersonal co-operation

A single person or an institution alone is not involved in curriculum development. On the other hand, it involves the co-operation of all sections of the society like teachers, students, parents, employers, experts, schools and institutions of higher learning.

(ii) Essentially a Social Process

The society is everchanging and the functions of the school in the society also change with time. As the society changes due to scientific growth and technological advancements, the school curriculum is also to be changed so as to respond to the demands of the society.

(iii) Political Influence

Political influence definitely affects the process of curriculum development. The ideologies and beliefs of the ruling party may sneak into the content and instructional design of the curriculum.

(iv) Collaborative in Character

Consultation and co-operation of the experts are essential in the process of curriculum development apart from the inv olvement of teachers, school and other agencies.

(iv) Incremental in nature

Curriculum planning is not a one time affair; however best the curriculum may be, it can not serve for all the time to come. According to the demands of the society, the needs of which goes on changing due to scientific and technological changes, curriculum should also be periodically modified to respond to such changes. That is to say curriculum development is a dynamic and continuous process.

Summing up the above, we can state that curriculum development process is marked by 4 P's. They are :

i) *Power* : (Influence of social and economic needs of the community)
ii) *People:* (Different categories of people like teachers, students, employers, etc. are involved.)
iii) *Participation* : (of experts in the different fields of education and industry) and
iv) *Procedures :* (It involves different activities like selection and organisation of content, implementation, evaluation and revision

APPROACHES TO CURRICULUM DEVELOPMENT

You will agree that the school activities should be planned and organised on the basis of some principles and norms set by society. There are some planned procedures for meeting the educational goals through teaching and learning activities. It is essential that these activities (i.e. learning experiences) be selected, planned and executed carefully so that these learning experiences contribute to the welfare of the people. Similarly we follow a systematic approach in curriculum development *The approach is known as the curriculum approach.*

We can *define the curriculum approach as a design or pattern* of organisation used in making decisions about the various aspects of curriculum development and transaction. The curriculum approach is thus a plan that the teachers follow in providing learning activities (or experiences) to the students in school. The pattern or design of the curriculum, to a large extent, determines the nature of the outcomes that will be achieved after transacting the curriculum.

Major Categories of Curriculum Approach

There are several approaches through which curriculum can be designed and organised. These approaches are generally grouped into the following four categories:

- *Subject-centred approach*
- *Broadfields approach*
- *Social problems approach*
- *Learner-centred approach*

The choice of a particular approach to the curriculum design indicates

- the bases of decisions about the types of experiences to be included in the educational programme.
- the role of teachers, students and other agencies in the process of curriculum planning.
- the choice of method for determining the selection and organisation of learning experiences provided by the schooL
- the factors influencing the selection of objectives.
- the use of subject matter or content.

SUBJECT-CENTRED APPROACH

The subject-centred approach is one of the most widely used methods for organising educational experiences. In this approach the subject matter becomes the basis around which learning experiences are organised and the mastery of subject matter becomes *the* basis for attainment of educational objectives.

In subject-centred curriculum, the chief responsibility of the curriculum planners is to determine the subjects to be offered by the school and the body of knowledge to be covered within each subject. For example, the subjects or the programme of studies may be divided into areas like English, Hindi, Science, Social Studies, Mathematics and so on.

Another concern of curriculum planners engaged in this activity is to devise ways of evaluating a student's mastery over the subject matter through formal tests, problem-solving situations, etc.

BROADFIELDS APPROACH

A modification of the traditional subject-design, the broadfield approach seeks to bring together into a broad organisation of the subject matter, the knowledge and understandings pertinent to a whole area of study. Under broadfields approach efforts are made to integrate the subject matter of closely related disciplines. For example, a course developed in Biology represents an effort to bring together into one instructional unit, the knowledge, concepts and principles from the disciplines of Zoology, Botany, Physiology, Anatomy, Bacteriology and similar closely related fields of study.

The broadfields approach, in the strict sense of the term, is a subject approach, but one in which the basis of selecting and organising subject matter is different from that in the traditional subjects. Attempts are made here to correlate and integrate various areas of knowledge.

SOCIAL PROBLEMS APPROACH

The advocates of this approach believe that the learning experiences should be organised in terms of the major activities of the human being as he/she lives in his/her culture. This inculcates in the pupil, an awareness of the current social issues and problems and enables him/her to effectively resolve social problems. Through social-problems approach, courses may be developed in areas such as environmental problems, racism, population. communications, technology and so on.

In this approach to curriculum planning/development, learning objectives are framed after the social problem or issue has been analysed; the subject matter is drawn from any source pertinent to the problem.

LEARNER CENTRED APPROACH

Learning is what we build into behaviour from experience. We learn best from those situations that help us solve our problem, satisfy our desire, fulfil our interest or meet our needs. This approach to curriculum development seeks to present through school experiences the methods which an effective citizen uses in solving problems, pursuing his interest or meeting his needs. The curriculum plan will thus focus on the emerging needs of the students in their present lives.

This approach prepares the student to face the present rather than the future. A student confronted with a problem utilises his intelligence and experiences based on his/her past knowledge to reach an intelligent decision. For this, the appropriate learning experiences need to be planned, which are psychologically most sound and purposeful to the student. The curriculum would consist of topics such as, an understanding of *changes* during puberty, peer-group interaction, developing personal values, etc. In other words, the issues should relate to the developmental stages of the student.

ISSUES RELATED TO CURRICULUM APPROACHES

We have looked into the four major approaches to curriculum with examples. Now we shall look into some of the issues related to these approaches. We shall categorise the issues into the following groups:

Curriculum approach and instructional methods

Curriculum planners deal with knowledge and content first and then with the teaching and learning experiences. Irrespective of their philosophical postures, they should not ignore these two elements of the curriculum. Many educators tend to strongly demarcate the traditional and progressive approaches. The traditionalists are in favour of the lecture method and advocate the subject approach. The progressives, who are the advocates of social problems or emerging-needs approach are proponents of methods like group discussions, etc. However, instead of adopting one stand rigidly, educators could choose an eclectic approach. For example, while lecturing on a short story, the teacher could at some stage initiate a group discussion on the characters of the story.

Curriculum approach and various instructional organisations

General education and the interdisciplinary approach are the two concepts gaining currency in the field of curriculum. The former is considered central to an educational programme and, therefore, is required to be opted by the students. The latter is formed by an integration of various subject areas like Maths, Science, Social Studies and so on. Unfortunately both groups have adhered strictly to their narrow definitions. The term general education should not prevent the teacher from developing skills related to social problems and needs. The interdisciplinary approach need not always fuse various subject-areas into a social problems approach.

Choice of curricular approach

Each of the four curricular approaches serves a different and important purpose in any educational programme. Educators will rate one curricular approach belies than the other. The real issue in considering curricular approaches is not which one is better but how it can be optimally used for designing a balanced curriculum.

MODELS OF CURRICULUM DEVELOPMENT

The need to plan effective curricula is obvious: the difficulty, however, is that there are various ways of defining curriculum. However, we cannot construct a curriculum without deciding its goals, content, learning experiences and evaluation. The point of emphasis here is that there is more than one model to be followed in curriculum development.

Most models can be classified as either technical/scientific or non-technical/non-scientific.

We should clarify at this juncture that classifying an approach as non-technical or non-scientific does not mean that it is in any way inferior or sub-standard. Rather it is a way of constrasting the two concepts. The educators who believe in subject matter design usually advocate for the technical/scientific approach to curriculum development. Those who favour a learner-centred design frequently advocate for the non-technical/non-scientific approach. Let us elaborate each type of these models in detail.

TECHNICAL/SCIENTIFIC MODELS

The technical/scientific model enables us to understand curriculum from a macro orbroad view and to see it as a complex unity of parts organised to serve a common function viz; the education of individuals. Technical/scientific models require the educators to use an intellectual and rational approach to accomplish their tasks. Advocates of technical/scientific models believe that it is possible to systematically outline the procedures that will facilitate the creation of curricula.

We have listed below a few models that follow the technical/scientific approach.

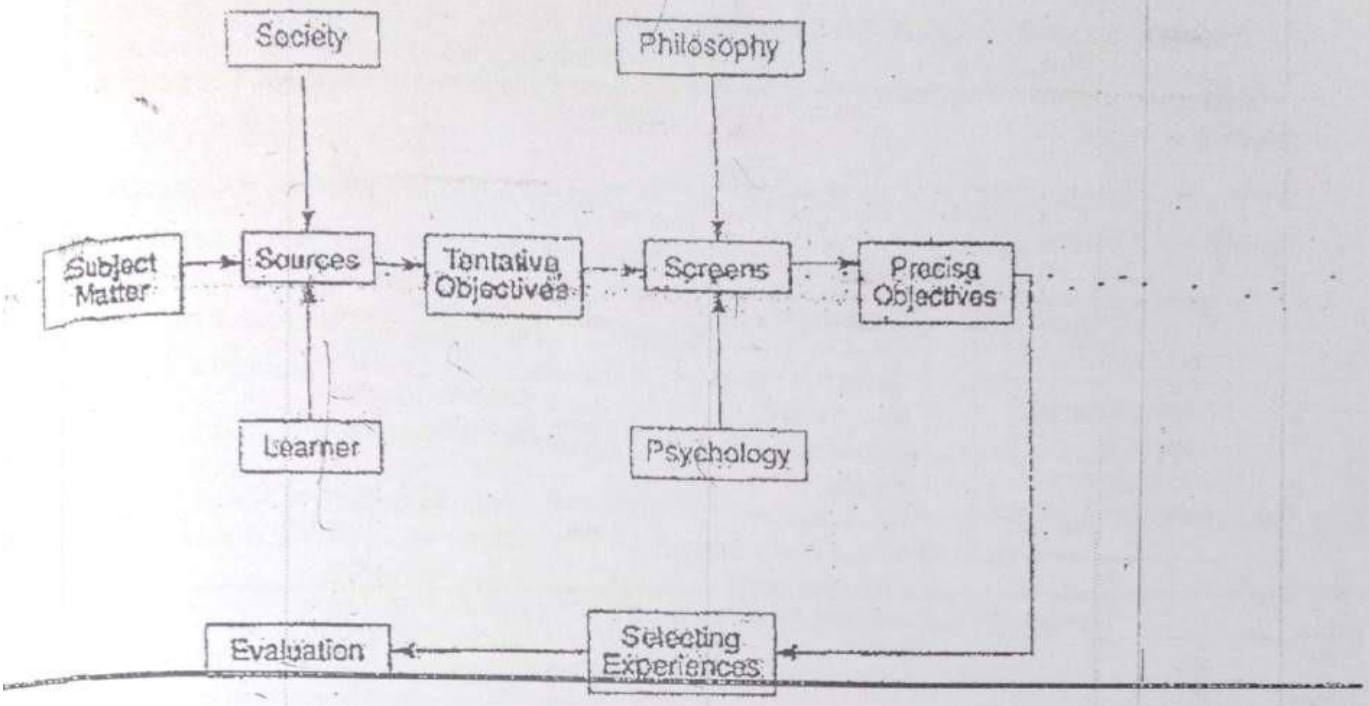
- The Tyler Model
- The Taba Model
- The Saylor and Alexander Model
- The Goodlad Model
- The Hunkins Model
- The Miller and Seller Model

> TYLER'S MODEL

You might be familiar with Tyler's four basic components of curriculum. A reference to these principles is made here. Tyler mentioned that those involved in curriculum inquiry mutt try to define the :

- ✓ purpose(s) of the school
- ✓ educ itional experiences related to these purposes
- ✓ organisation of these experiences
- ✓ evaluation in terms of attainment of these purposes

A look at Figure will give you an idea of the Tyler's curriculum development model.



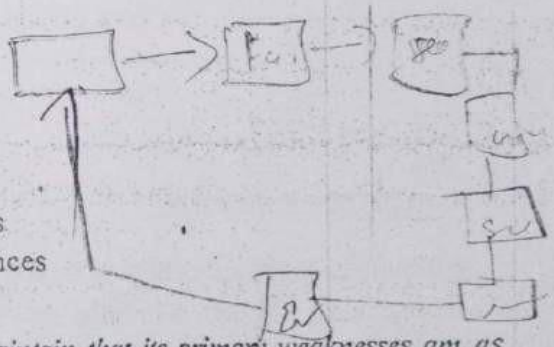
The components of die Tyler's model shown in Figure indicate that in order to identify the purposes we need to gather information from three sources, namely, society, students and subject matter. As the purposes derived from these sources will be general in nature, we need to translate them into precise instructional objectives. Once the objectives are identified and stated in precise terms, we take up the task of selecting appropriate learning experiences which suit the objectives. Tyler's last principle of evaluation gives us feedback about whether or not the intended goals have been achieved..

➢ TABA'S MODEL

Hilda Taba maintains that curriculum users should design the curriculum. According to her, the teachers should create teaching learning materials for their students, by adopting an inductive approach starting with specifics and building up general design, as opposed to the traditional deductive approach.

Tabs listed seven steps in her grassroots model of curriculum development in which teachers have to provide major inputs. The steps are:

- Diagnosis of needs
- Formulation of objectives
- Selection of content
- Organisation of content
- Selection of learning experiences
- Organisation of learning experiences
- Evaluation



Though Taba's model has many merits, some critics maintain that its primary weaknesses am as follows:

- it applies the concept of participatory democracy as a highly technical and specialised process, and
- it assumes that teachers have the expertise and time to engage in such curricular activities.

This model has made it clear that a broad-based involvement of the users of the curriculum is essential for effective decision making related to curriculum.

➢ SAYLOR AND ALEXANDER'S MODEL

Saylor and Alexander have presented a systematic approach to curriculum development. The model is illustrated in Figure.

The components of the model are suggestive of the stages involved in curriculum planning. The figure is self expalanatory.

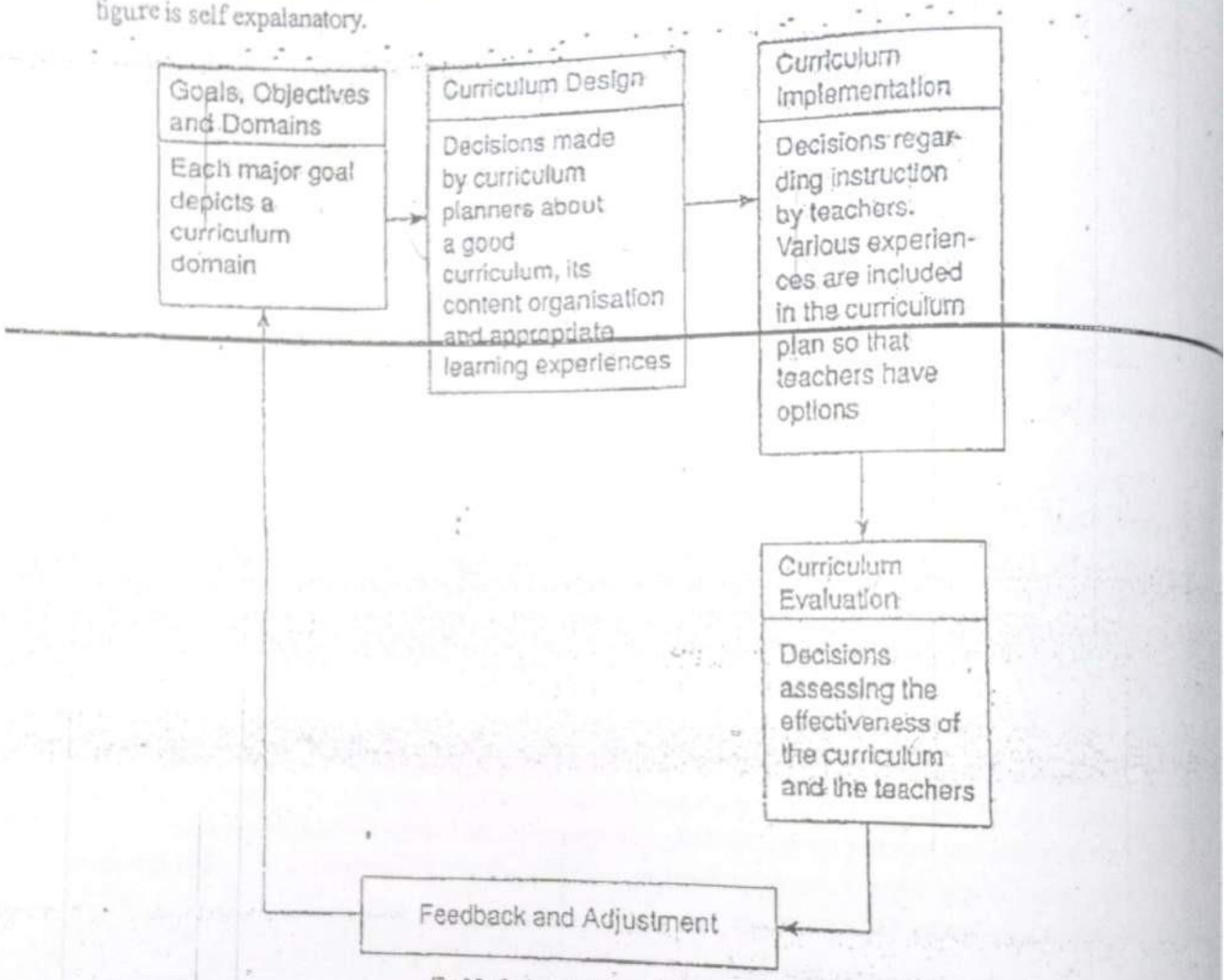


Fig. 3.2 : Saylor and Alexander Model

➢ GOODLAD'S MODEL

In this model the educational aims are drawn from the analysis of the values of the existing culture. The educational aims are then translated into educational objectives stated in behavioural terms. These objectives suggest the learning opportunities, which could involve study of particular courses or reading

From these general objectives and learning opportunities, educational planners deduce specific educational objectives, which in turn help in organising specific learning opportunities for identifiable students or for a student.

➢ HANKINS' MODEL

The Hunkins' model allows those working with the model to continually adjust their decision-making about curricular actions, depending on the situation. The model ensures that one's philosophical orientation should guide ones curriculum planning activities. The curriculum maintenance stage includes various means of managing curriculum systems that are necessary for the continuation of the programme.

➢ MILLER AND SELLER'S MODEL

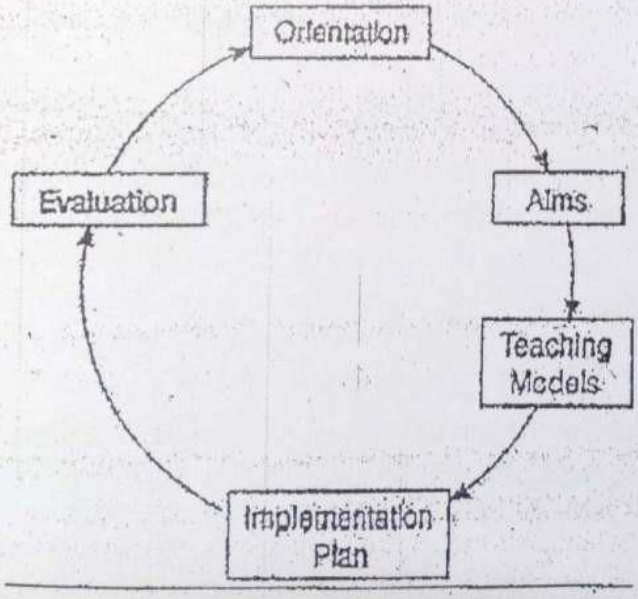
This model is a generalised one. It emphasizes that all the models of curriculum development exhibit atleast the following three orientations towards the purpose of curriculum:

Transmission position : Curriculum should transmit skills, facts and values to the students.

Transaction position : Transaction of curriculum can be viewed as a dialogic process (pedagogic interaction) between the students and the teacher.

Transformation position : Personal changes and social attitudes can be influenced through curriculum.

Diagrammatically the model can be represented as shown in Figure



NON-TECHNICAL/NON-SCIENTIFIC MODEL

The proponents of this model of curriculum development stress on the students' perceptions of their needs and preferences. This is in contrast to the technical approach which relies more heavily on the view of experts and demands of subject matter for determining student's needs.

➢ THE OPEN CLASSROOM MODEL

The open classroom model is based on the activity curriculum in which the activities are often treated as ends in themselves. This model suggests that the students learn by doing and by actively participating in learning activities and not by passively listening to the teachers. This model places great faith in students and encourages student autonomy. In this model, as you have seen, the students take up the major responsibility for their learning. The curriculum according to this model should be based on the students' interests, needs and aptitudes. The learning experiences should facilitate student autonomy and freedom.

➢ WIENSTIEN AND FANTINI'S MODEL

According to this model, the teachers can generate new content and techniques to assess the relevance of the existing curriculum, content and techniques. Thus the teachers can give new shape to the curriculum. The existing curriculum is reviewed to suit the requirements of the students. Thus the student is at the centre of the process of curriculum development.

The first step in the curriculum development activity is to identify the target group. The student concerns determine the contents, its organisation and teaching procedures to be employed.

Content could be gathered from various sources, such as

- Experiences of a growing person
- Student's feelings about his or *her* own experiences — one's feelings about one's friends, sports, etc
- Student's knowledge of his/her own social environment.

The content determines the skills to be instilled in the students. After the content has been selected, the teaching procedures are identified. The teaching procedures should essentially be related to the learning styles of the students.

➢ ROGERS' MODEL OF INTERPERSONAL RELATIONS

Though not a curriculum specialist, Carl Rogers has developed a model for changing human behaviour which can be used for curriculum development. Rogers emphasizes human experiences rather than content or learning activities.

Rogers' model is used for exploring group experiences, whereby people examine themselves and others in a group. The participants of the group communicate honestly with each other and explore each other's feelings. Hence this model is called the interpersonal relations model.

PROCESS OF CURRICULUM DEVELOPMENT

Curriculum development is a specialised task which requires systematic thinking about the objectives to be achieved, learning experiences to be provided, evaluation of changes brought out by the curricular activities and so on. We need to follow the order in which decisions related to curriculum development are made and we have to make sure that all the relevant considerations are taken into account before taking any decision. To arrive at a thoughtfully planned and dynamically concieved curriculum we should follow the steps as follows:

- Assessment of educational needs
- Formulation of objectives
- Selection and organisation of content
- Selection and organisation of learning experience
- Evaluation

Now we discuss each step in the following sub-sections.

❖ *Assessment of Educational Needs*

Curricula are framed to enable students to learn socially desired behaviours. Because the background of students differ, it is essential to diagnose the gaps, deficiencies and variations in these backgrounds. Need assessment is an important first step in determining what the curriculum should be for a given population during a particular period of time. We should, therefore, identify the target students and prepare their profile.

There are two means of needs assessment. First, we assess educational needs through specially mounted surveys. We go to the field (the target group) and study the areas where educational inputs are required. Besides educational needs, we also.collect background information about the target group. The needs assessed through field studies are known as felt needs. The second means of needs assessment is the analysis of existing data; such as education commissions' reports, government policies (e.g. National Policy on Education, 1986), etc. The policy documents can provide useful guidelines for framing curriculum. Similarly, every institution has its objectives to be achieved. The priority areas can be identified from the secondary sources. The needs messed through the secondary sources are known as observed needs. Considering the potential and limitations of the education system (i.e. what the education system can do to achieve/meet the needs of the target group), you can prepare a list of priority areas, known as real needs, after thorough analysis of the felt and observed needs.

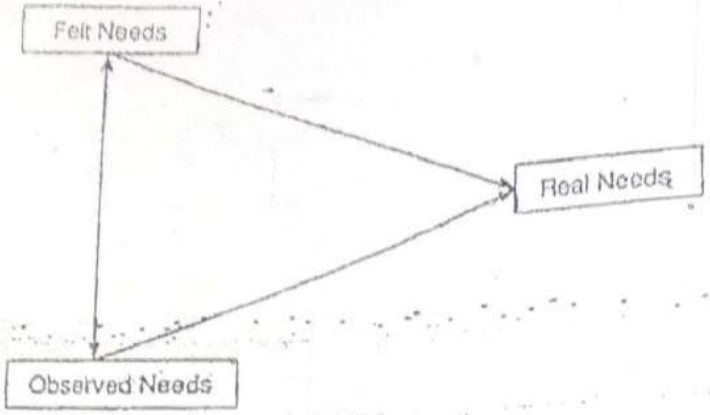


Fig. 3.4 : Needs Assessment

❖ *Formulating educational objectives*

The purpose of discussing objectives here is to highlight their role in curriculum development.

Since objectives specify expected outcomes, we need to give serious thought to the following points while formulating them:

Matching: The objectives should be related to the broad goals of education from which they are derived. For example, the objective of understanding of certain scientific facts, should enable the student to apply the knowledge gained in practical problems. The point of emphasis here is that the attainment of the objectives should lead the students to attain the overall goal of education.

Worth: Worth relates to whether attaining an objective has value in the life of the student in the present or future. Since our knowledge base is continually changing, the objective needs to be updated, modified or eliminated to improve the quality of education and of human life. The objectives should be useful, meaningful and relevant to the need of the students.

Wording: The statements of the objectives should be worded properly, so that students can easily understand the intended outcomes.

Appropriateness: All the objectives should be derived from and cater to the needs and interests of the students. Any ambiguity in the statement of an objective may create confusion in the mind of both the teacher and the students. In such a case the process of education will lose direction.

Logical grouping: Some times the objectives lack proper organisational coherence, especially when the learning experiences and their evaluation procedures am decided. The objectives should be grouped according to some common idea or in terms of domains —cognitive, affective and psychomotor. Proper grouping of the objectives will help plan and develop a more meaningful curriculum in terms of its content and evaluation.

Revision: The objectives require periodic revision because students' needs, realm of knowledge, instructional strategies, etc., change at a very fast pace these days. Revision of objectives will have a recurring impact on the curriculum and make it an on-going process. The curriculum should have the flexibility to accommodate changes in the society.

❖ Criteria for Content Selection

In the previous sub-section we discussed that content and objectives are interdependent and constitute a major dimension of curriculum development. Generally content refers to subject matter or the compendium of facts, concepts, generalisations, principles and theories. By content we imply learning experiences, besides subject matter. The curriculum content should enable students to gain and apply knowledge in day-to-day life. The content selected should contribute to the students' knowledge or understanding of the reality of human life. The following diagram make this discussion clear.

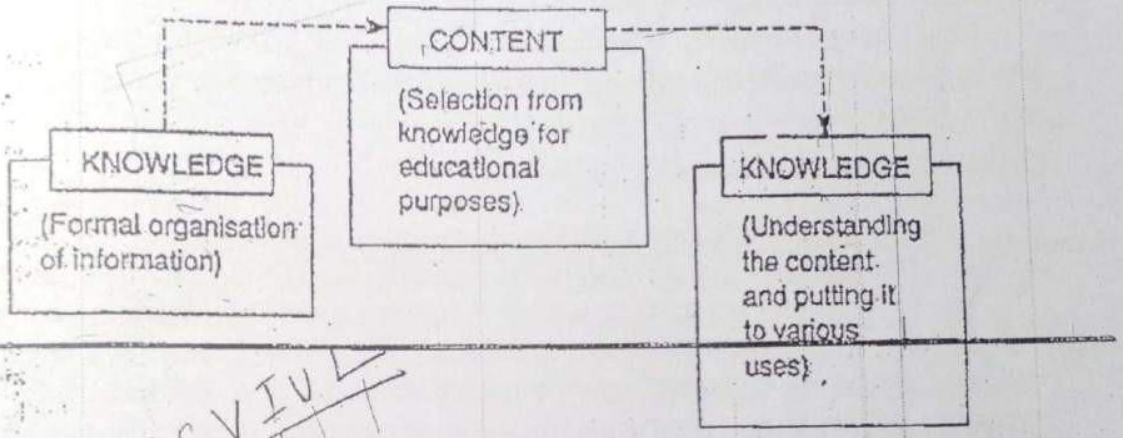


Fig. 3.5 : Content Selection

Some of the criteria for content selection are discussed as follows:

Self-sufficiency: This criteria helps the students to attain maximum self-sufficiency and that too in the most economical manner i.e., economy of teaching efforts, students' efforts and extent of generaliability of subject matter. In other words, we can say that the content should help the student become self-reliant and self-sufficient.

Significance: The content to be learned should be significant in terms of its contributions to the basic ideas, concepts, etc., in particular learning abilities.

Validity: Validity relates to the authenticity of the content selected. The content selected should be valid to the extent that it flows from and supports the goals and objectives of the curriculum. The content should be usable in day-to-day life.

Interest: Mother deciding factor for content selection is that the content should suit the personality (e.g. attitude, interest, etc.) and intellectual capabilities (e.g. mental level, aptitude, etc.) of the students. it is likely that the students, interest are transitory. The criterion should be weighed and adjusted to provide for student's maturity, prior knowledge, experience, etc.

Utility: The utility criterion is concerned with the usefulness of the content. The usefulness can be interpreted in different ways. For example, the content learned by the student should be useful in his/her job situations.

Learnability: This criterion relates the optimal placement and appropriate organisation and sequencing of content. The selected content should not be out of the range of student's experiences, intellectual abilities, etc. In other words, the content should be such that it can be percieved, understood and assimilated by the learners for whom it is intended.

Feasibility: Feasibility as a criterion of content selection compels curriculum planners to analyse and examine the content in the light of the time and resources available to the student, costs involved, contemporary socio-political climate, etc. Despite *the* fact that there are several options available, the students do have limitations as far as the pace of their learning is concerned.

❖ Organising the Content

Once the content is identified it needs to be appropriately organised. If the curriculum is a plan for learning as indeed it is, its content should be logically organised so that it facilitates *the:* attainment of educational objectives. One of the most potent factors that determines the Way learning takes place is the organisation of the curriculum. If a curriculum has not been systematically organised, it shall lack direction and it shall not help attain the objectives on Which it was supposedly based.

Curriculum organisation is both a difficult and a complex task. It demands a thorough understanding of the teaching-learning process. The main problems of curriculum are lack of sequence, continuity and integration of the content included in curriculum.

Let us examine each of these above mentioned aspects briefly.

Sequencing : Establishing a sequence in curriculum means putting the content and materials into some sort of order of succession. There are some general principles used in arranging the content in the most appropriate sequence. For this you have to follow certain teaching norms, such as moving from known to unknown, from simple to complex, from concrete to abstract, etc. The content can be arranged according to the period or historical development, such as the ancient period, the mediavel period, the modern period (that too pre-independence and post-independence), etc. Besides these norms or principles, it is the resourcefulness of the curriculum planners to arrange the content in such a way that it facilitates students' learning.

Continuity : The curriculum should provide for a progressively more demanding performance, more complex materials to deal with, a greater depth and breadth of ideas to ", understand, to relate, to apply and so on. Such cumulative learning can apply to thinking, attitudes and skills.

The students should be provided with experiences step by step, leading to the examination of more complex forms of criticism and analysis of ideas. For example, a student of grade II may learn the concept of interdependence among family members. He may encounter the same concept in a higher grade but with reference to interdependence of nations, political decisions, etc.

The content of curriculum should provide for continuity in learning *and* prevent loss through forgetting. You know that disjointed content does not lead the student to the destination i.e. the attainment of the objectives.

Integration : It is recognised that learning is more effective when facts and principles from one field *can* be related to another, especially when applying knowledge. Curriculum planners should attempt to integrate the curriculum by simultaneously establishing relationships between various subjects taught to the target learners. One method can combine related areas into one broad field; for example, combining geography and history into social studies. Correlating two subjects such as Maths and Science is another attempt to integrate content

It should be clear from the preceding discussion that curriculum organisation should protect and preserve both the logic of the subject matter and the psychological sequence of the learning experiences. In the logical organisation, the planners organise content according to certain rules, to make it more manageable.

In Economics, for example, the concepts of supply and demand are central to the content. Without these, the concepts of capital, labour and market cannot he grouped.

The psychological organisation of the content helps one understand how an individual might actually learn it (i.e. content). Content should be organised in such a way so that the concrete content is experienced before the abstract content.

❖ Selecting Learning Experiences

We shall begin this sub-section by clarifying the term **learning experiences**. However, this term has been used quite frequently in this and other units of this course. The term connotes learning activities which shape the learner's orientation to the content and ultimately their understanding of it. In essence, it refers to the teaching-learning process, the methods followed and the activities planned to facilitate the teaching-learning process. Various teaching methods are used by teachers such as, lecture, discussion, project, demonstration. etc. Similarly there are various learning activities, such as viewing films, conducting experiments, undertaking fieldtrips, taking notes, working on assignments, participating in discussions, etc. The teaching methods generate learning activities. Teaching methods and learning activities are two sides of the same coin. Some curriculum planners differentiate content from experience. They should remember that content and experiences do not exist independent of one another. On the contrary, both the content and learning experiences comprise the overall curriculum.

There are a few questions which should be addressed before we select learning experiences. They are listed below:

- Do the learning experiences function the way we wish them to in the light of the overall aims and the specific objectives of the curriculum?
- , Will the student be able to apply the knowledge gained to practical situations?
- 14 it feasible in terms of time, staff expertise, resources, etc., to learn the content of the curriculum in the specified time.
- Do the teaming experiences enable students to develop thinking skills and rational powers?
- Do the learning experiences stimulate in students a greater understanding of their own existence as individuals and as members of a group/society?
- Do the learning experiences foster in students an openness to new experiences and a tol erance for diversity?
- Do the learning experiences allow students to address their needs and interests?
- Do the learning experiences cater to total development of students in cognitive, affective and psychomotor domains?

These questions will help you select appropriate learning experiences for a given set of objectives.

The educational environment should address social needs as well as development of awareness, appreciation and empathy for others. It should stimulate purposeful student activity and allow for a range of activities that facilitate learning.

Let us now move on to another stage of curriculum development, i.e. evaluation.

❖ Evaluating the Curriculum

Evaluation is meant to gauge the extent to which the objectives of the curriculum are achieved through implementation of curriculum. We can see the relationship between evaluation an objectives in Figure

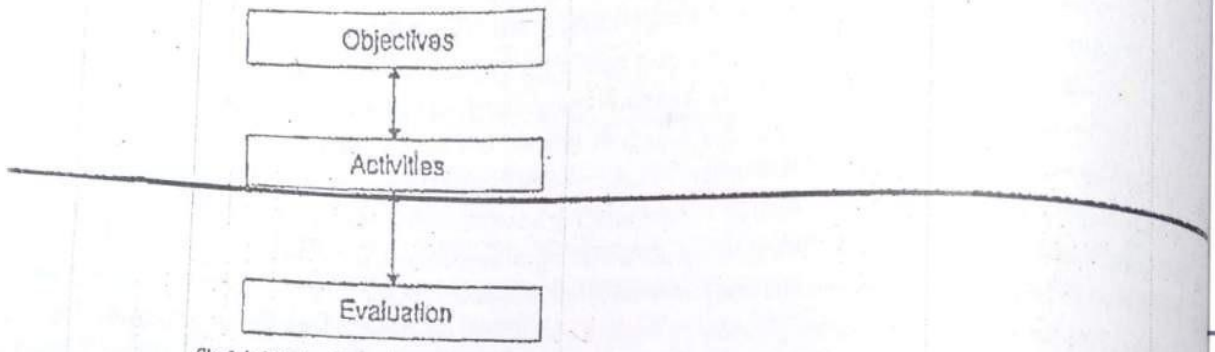


Fig. 3.6 : Relationship of Objectives with Evaluation

Fig. suggests that *as* soon as the objectives of a curriculum are stated, the ways of evaluating the attainment of the objectives should be decided. The content and learning experiences an them in order to achieve the objectives and also with reference to the possible means of evaluation.

The effectiveness of any educational programme is judged by its potential to realise its goals and objectives. The extent to which the objectives are achieved can be assessed through appropriate evaluation procedures. The evaluation of any purposeful activity should have certain characteristics.

The important characteristics am as follows:

- Consistency with the objectives of the curriculum
- Sufficient diagnostic value
- Comprehensiveness
- Validity
- Continuity

The aim of evaluation is to produce empirical evidence about the nature, direction and extent of behavioural changes which arise from educational endeavours. This evidence can then be used as a guide to modify any phase of the curriculum process. Evaluation is both qualitative and quantitative, i.e. it may be 'formative' (with the objective improving the process of development) and 'summative' (at the end of

the total programme or each *phase* thereof to judge the effectiveness of the instructional design). Educational evaluation *serves* the dual function of guidance and assessment.

We need to employ a variety of appropriate techniques and tools to collect all kinds of evidence required at different stages of curriculum development and implementation. The techniques and tools to be used should be selected in relation to the nature of the objectives or the learning outcomes and the kinds of performance to be assessed or evidence to be collected. The evidence to ascertain the success or the failure of an educational programme can be collected through systematic feedback from the makers and users of curriculum.

From the discussion presented in this sub-section, you can infer that there are two types of evaluation; viz;

- Student evaluation, and
- Curriculum evaluation

Student evaluation : Student evaluation aims at acsi-ssing the changes in the student's behaviour. These changes in behaviour can be assessed through:

- ~~oral, written or practical tests;~~
- responses during interactive teaching-learning sessions, discussions in different kinds of situations, etc.
- written products of different kinds, e.g. assignment responses, term papers, project report, etc.

Evaluation of the students requires sufficient *experience* and expertise to frame good questions for higher level objectives.

We can prepare observation schedules to validate student performance. These can be applicable to many tasks of the same kind or in the same area. Qualitative criteria can be assigned, so that judgements in the form of rating points (5,4,3,2,1 or corresponding A,B,C,D,E) can be made. The marks or grades awarded for total performance can be explained with a brief descriptive statement.

Curriculum evaluation: Student performance is a part of curriculum evaluation. This, however, does not imply that evaluation in education should cover only evaluation of learning, development or achievement of students. In fact evaluation comprises assessment of different aspects of the curriculum as planned, developed and implemented.

Curriculum evaluation refers to the evaluation of different components of curriculum: objectives, content, methods and evaluation procedures for student assessment to determine whether the curriculum caters to the needs and the educational purposes of the target group.

Curriculum components can not be scrutinised in isolation, since each component affects and influences the rest. Since these components are interdependent, *each* has to be evaluated in conjunction with the others. The overall curriculum evaluation is shown in figure.

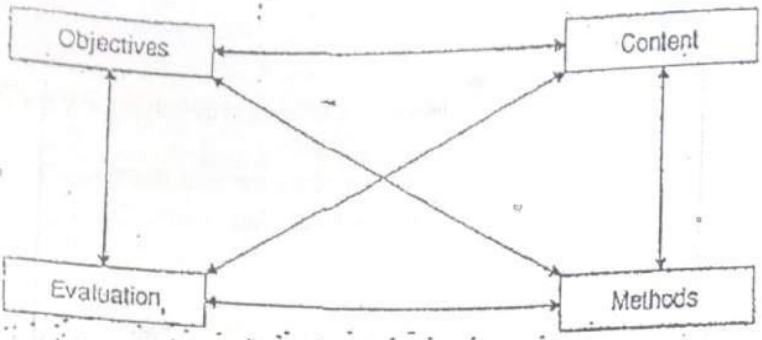


Fig. 3.7 : Interdependence of Curriculum Components

The purpose of curriculum evaluation is to collect and use feedback for improving the curriculum. None of us would dispute the importance of curriculum evaluation, yet we carry it out very rarely.

There are two major reasons for this indifference:

- Evaluation results are frequently ignored, and
- Resistance to accept a new pattern despite its potential continues to exist.

Since evaluation data are crucial for the improvement of curriculum, it is essential that we should come to grips with the issues underlying it.

❖ Development Try-out

We have mentioned in the preceding sub-section that evaluation can be carried out during the process of curriculum development. This kind of evaluation is called 'formative' evaluation. Curriculum evaluation can be done at the end of development and implementation; this is called 'summative' evaluation.

Development try-out is a formative evaluation which is carried out at every stage of curriculum development. It aims at improving *every* component of the curriculum during its planning and development. Emperical data are collected so that decisions can be made to revise the curriculum while it is being developed. During the developmental stages of the curriculum, evaluation effort provides frequent, specific and detailed information to guide the persons who are working at the curriculum to take decisions at every stage. It can take place at a number of specified points during the curriculum development process. For example, during a curriculum's creation, the curriculum planners can check whether a particular content is appropriate for the students to learn. Depending on the results, the content can either be modified, replaced or even dropped.

ROLE OF TEACHERS IN CURRICULUM DEVELOPMENT

The teacher is such a part of the curriculum that s/he cannot be denied participation in the process of changing or developing curriculum. A teacher should be directly involved with the curriculum planning and development because it is the teacher who implements it and translates instructional plans into action. Teaching is an act of implementing or transacting the curriculum. Teachers should be part of the overall development activity. This implies that

- teachers should ideally be involved at every stage of curriculum planning and development i.e. from the formation of aims to the evaluation and maintenance of the curriculum.
- their help should be sought for developing curriculum packages and conceptualizing resource designs.
- they can assist in designing supportive educational environment.
- they can communicate with *the* general public on new curricular projects and thereby make them more receptive to curriculum change.

SOME ISSUES IN CURRICULUM DEVELOPMENT

Various trends and events have influenced the task of curriculum planning in recent years and these are likely to continue their influence in the near future. There are some issues that often engage *the* attention of curriculum planners and teachers. In this section we shall briefly discuss two such issues. They are:

- Irrelevant curriculum
- Emerging curriculum

➢ Irrelevant Curriculum

Very often we hear people criticising the school and its curriculum. When people say that the curriculum is irrelevant, they generally mean that it does not meet the needs of the society and the student. As you have studied, curriculum planners should take the social and student-related factors into consideration while designing curriculum for a specific target group.

The educators consider the curriculum irrelevant if it is fixed or trivial. Let us examine what a fixed or trivial curriculum is.

Fixed curriculum: A relationship exists between changes in society and changes in curriculum. The scheme of a curriculum must take into account the intention of improving the life of the people so that the future could be *better* than the present and the past.

This idea suggests that cumulative knowledge and the total culture of society must be reflected in the curriculum. If schools are to maintain their health and vitality, the curriculum cannot remain fixed in a world full of change. The curriculum should have adequate flexibility to reflect and respond to social changes and developments.

Trivial curriculum: This implies that facts and figures in a curriculum are out-dated, meaningless and non-essential to students. Such a curriculum takes students no where as far as their growth and development is concerned. Implementation of a trivial curriculum will waste the academic time and energy of the students. For desired fruits the curriculum should include updated, relevant and meaningful facts and figures.

➢ Emerging Curriculum

An emerging curriculum is one that constitutes new curriculum content and areas of study. It includes those aspects which are relevant for the emerging society. These innovative areas of study emerged from traditional subject matter and reflect socio-political changes in the society. Such a curriculum is both learner-oriented as well as value-oriented.

Several curriculum trends are emerging today which could be incorporated to constitute a balanced curriculum for secondary school education. Some of the emerging areas that can be included in the emerging curriculum are:

- Special education
- Multicultural education
- Sex education
- Drug abuse
- Population education
- Intercultural relations
- Pollution
- Vocational education
- Community health education

These are some of the numerous emerging areas of study that demand attention today and will continue to do so in the future as well.

Unit – 3 CURRICULUM TRANSACTION

Low learning outcomes in Indian schools and the promotion of rote learning by their instructional systems have been documented time and again. Schools are therefore required to adopt India's National Curriculum Framework (NCF 2005) that includes guidelines for curriculum transaction. However, the learning outcomes and the kind of learning likely to be promoted by the instructional system of open schools in India, including the National Institute of Open Schooling (NIOS) remain excluded from these deliberations. So these two aspects of NIOS have been examined and it has been inferred that the learning outcomes are unsatisfactory; the instructional system is not designed for meaningful learning; and the self-learning material used for delivering instructions is a barrier to the adoption of the NCF guidelines.

National Curriculum Framework (NCF) Guidelines for Curriculum Transaction

The NCF (2005) aims to guide the development and transaction of curriculum in schools and to address the problems of transmission of information and rote learning. It includes guidelines for curriculum transaction to make learning active, social and meaningful. Schools are supposed to adopt these guidelines and the current five-year plan of the Indian government reiterates this.

The guidelines are as follows:

1. Connecting knowledge to life outside the school;
2. Ensuring that learning shifts away from rote methods
3. Enriching the curriculum so that it goes beyond textbooks;
4. Making examinations more flexible and integrating them with classroom life; and
5. Nurturing an overriding identity informed by caring concerns within the democratic polity of the country.

The first guideline aims to contextualize learning and ensure that the content gets a broader perspective as it is linked to the life of the learners during the instructional process.

The second guideline intends that learners are enabled to link new and old learning so that they develop conceptual clarity and are encouraged to think critically and apply learning.

The third guideline aims to address the problem of considering textbooks as the sole and final source of knowledge. It is in fact an extension of the first guideline and requires that learners be introduced to various sources of knowledge. This will introduce learners to various views, sometimes even contradictory ones and help them to build a perspective that may accommodate diverse opinions.

The fourth guideline seeks to make assessment a formative process so that teaching and assessment determine each other and the meaningfulness of learning can be ascertained on a continuous basis.

The language of the fifth guideline is complex and so is its intention. It underscores the n raise awareness, nurture a sense of identity and the ability for critical thinking on socio-poli realities. It also intends that learners are helped in internalizing India's constitutional values equality, justice, liberty and fraternity so that democracy does not remain only as a form of governance but becomes a way of life for them. Thus, while making learning an active process to be carried out through group activities, it seeks to impart training in citizenship for India, a democratic polity.

For implementing these guidelines the NCF suggests pedagogies involving activities of various kinds like reading, discussion, sharing experiences, creating things and so on, to be carried out collaboratively.

Course content selection and organization

You are working on a course design, and now it is time to decide on the content and how to organize it. As is often the case, we have far more to say about a topic than we can possibly cover in a term. One rule of thumb is to have students spending from 8-10 hours per week on your course, including in-class time. So how to decide? Following are some tips to help with these time-consuming yet crucial tasks.

Finding Content

- **Check in your department for past syllabi** if you are offering a pre-existing course. Also be sure to check your institution's course calendar and read the course description to ensure that your course meets that stated description.
- **Locate similar courses at other institutions** if your course is new (or you would like some new ideas). Talk to your colleagues in your discipline area or go to the Web to find courses.
- **Review textbooks in your discipline area.** This can be a very easy way to locate not only possible content to cover but also ready-made organizational structures. Publishers will send out texts for you to review. Keep your students in mind when choosing texts – not only their abilities and past experience with the topic areas but also their time limitations.
- **If texts are not available or not appropriate, you may need to create a reading package or course notes.** It will take more time to compile this type of resource, so set aside a few months for this activity. Also, be sure to factor in the time that may be needed to receive copyright clearance for copying and selling published materials. Your institution may have a copyright agreement which makes this less of an issue, but be sure to investigate what is possible in advance so you avoid basing part of your course on materials that you cannot easily secure for the students.

Selecting Content

Set some type of criteria to help select appropriate content for your course. Course design literature suggests the following criteria.

Course content should:

- Fit with your course learning goals
- Have importance in the discipline
- Be based on or related to research
- Appeal to student interests
- Not overlap excessively with student past experience or knowledge
- Be multi-functional (help teach more than one concept, skill, or problem)
- Stimulate search for meaning
- Encourage further investigation
- Show interrelationships amongst concepts

Organizing Content

Many variations on concept mapping techniques exist to help you decide on an organizational structure for your content. You can use a hierarchical approach or put the concept in the centre of the page and work out from there. For more linear thinkers, creating lists of headings and subheadings is equally effective.

Some suggestions for ordering the topics or concepts include:

- **Topic by topic** – There are no set relationships amongst the topics, so the ordering is not critical. This works well for courses that revolve around current issues, for example.
- **Chronological** – Moving from past to present is a very common and easy to implement organizational pattern.
- **Causal** – The course presents a number of events or issues that culminate in some final effect or solution.
- **Cumulative** – Each concept builds on the previous one(s).
- **Problem-centred** – Problems, questions, or cases represent the principal organizing features of the course.
- **Spiral** – Key topics or concepts are revisited throughout the course, with new information or insight developing each time.

Within each class, also consider how to organize your material so that students can both learn and retain it. Different philosophies of learning are represented. Some ideas to consider are:

- **Start with what students already know** and then move to the abstract model or theory.
- **Start with concrete examples,** such as cases, news items, or other real-world situations, then generate the abstract concepts.
- **Start with a solution, conclusion, or model** and work backwards to the question.

- **Give students time to reflect,** individually or through discussion, on what and how they are le
- **Build in practice time,** with feedback, either in class or on assignments so that students learn to with the concepts and can receive assistance with problem areas.

Individualized Instruction

What is individualized instruction strategy?

Individualized instruction is also known as differentiated instruction.

Individualized instruction strategy refers to those classroom practices of teaching which recognize the uniqueness of each student learner and thus provide for adequate tutorial guidance, and other support services suited to bring about a wholesome development in the person (mind, body, and spirit).

Individualized instruction is about using teaching strategies that connect with individual student's learning strategies. The ultimate goal is to provide a learning environment that will maximize the potential for student success.

Differentiated instruction is an instructional theory that allows teachers to face this challenge by taking diverse student factors into account when planning and delivering instruction. Based on this theory, teachers can structure learning environments that address the variety of learning styles, interests, and abilities found within a classroom.

In this strategy the teacher shouldn't always stick to the same pattern of teaching rather they should adapt new ways such as teaching through audio, video, field trip, etc. so that students have multiple options for taking in information and making sense of ideas.

To differentiate or to individualize instruction is to recognize students varying background knowledge, readiness, language, preferences in learning, interests, and to react responsively. The intent of individualizing instruction is to maximize each student's growth and individual success by meeting each student where he or she is, and assisting in the learning process. It provides the opportunity for students to learn at their own pace, in their own way, and be successful.

Purposes of individualized strategy

- **To enhance and develop listening habit**

Since most of the teaching is done through lecturing, the role of students are to listen and if felt necessary take note of them. The learning of the learners greatly dependent on their listening habit and sense of hearing, thus helping them in enhancing their listening habit.

- **Enables the teachers to explain a lesson or demonstrate a technique to small groups of students at a time.**

Here the smaller the number of students are the greater is the advantage of the teachers in teaching or explaining a lesson or to demonstrate a technique to their students. In short smaller the number of students, more efficient the teaching or demonstration will be.

- **Individualizing instruction allows each student to progress through the curriculum at his or her own pace.**

It aims at how much the learner learns and pace at which they learn. Less important is given to covering the topics in the curriculum. Vital importance is given to the progress the learner are making in the field of learner at his or her own pace (the rate and speed at which they learn).

- **Long term retention as they note down what they usually understand.**

While the teacher is teaching in the class, students are actively engage in taking note of what they really understand instead of what the teacher explain. They usually note down what they undarstand and are usually listed in their own words. So, this help them to retain the information for a longer period of time.

- **Importance is given to a child as a individual not as group, class and so on.**

The strategy is more concern about how much a single child is able to learn, retain and his or her progress not as a group, class and team. As the current phase of children education says 'no child is left behind'. So, the focus is on a child as an individual.

Principles of Individualized Instruction Strategy.

1. Make the students clear about the key points and generalization to make sure that all learners gain a powerful and strong understanding so that they can have a good foundation for their future learning. Teachers are encouraged to identify essential concepts and instructional focuses to ensure all learners understand.

2. Use assessment as a teaching tool to extend versus merely measure instruction. Assessment should occur before, during, and following the instructional episode. The assessment carried out before and during can be incorporated into classroom practice; it provides information needed to adjust teaching and learning while they are happening.

3. Emphasize and stress more on critical and creative thinking while designing a lesson. Whatever task and activities that we provide to the students should be up to the student's level and understanding, so that they can understand easily and will apply meaning. Instruction may require supports, additional motivation, varied tasks, materials, or equipment for different students in the classroom.

4. Engaging all learners is essential. We should engage and make the students participate in class activities. For that teachers should develop their lesson to engage and motivate the students.

5. Provide a balance between teacher-assigned and student-selected tasks. If there is a balance the task and activities that are assigned by the teachers and the tasks selected by the student learning will be most favorable and desirable.

Requirements of individualize Instructions.

1. **Each student learn differently**

   Some students are kinesthetic learners, requiring a hands-on approach to learning. Some students learn visually, excelling when they can read or see photographs of the material. Finally, some students learn best through listening, learning best when they can hear and talk through a problem.

2. **All students are talented in different ways.**

   While one student may be creative, another student may be analytical. While one student may be mechanical, another student may excel at writing. Teaching requires differentiated and individualized instruction in order to reach all students.

3. **Educating children with special needs.**

   Special Education is a specialized area of education which uses unique instructional methods, materials, learning aids, and equipment to meet the educational needs of children with learning disabilities.

   Remedial instruction aims to improve a skill or ability in each student. Using various techniques, such a more practice or explanation, repeating the information and devoting more time to working on the skills, the teachers guide each student through the educational process. A student that might, for example, have a low reading level might be given remediation.

4. **It is to meet the unique educational needs of the child.**

   The IEP is intended to help children reach educational goals more easily than they otherwise would and must especially help teachers and related service providers understand the student's disability and how the disability affects the learning process.

5. **Teaching requires differentiated and individualized instruction in order to reach all students.**

   Differentiating does *not* mean providing separate, unrelated activities for each student but does mean providing interrelated activities that are based on student needs for the purpose of ensuring that all students come to a similar grasp of a skill or idea.

6. **Careful and continuous assessment of individual progress can be carried out.**

Advantages:

1. Student-Centric
2. Raises the peace
3. Meeting the needs and interests of diverse learners.
4. Provides the opportunity for students to learn at their own pace, in their own way, and be successful.
5. Recognizes students' varying background knowledge, readiness, language, preferences in learning, interests, and to react responsively.
6. Maximizes each student's growth and individual success by meeting each student where he or she is, and assisting in the learning process.
7. Helps in providing for the uniqueness of each child in terms of his/her particular learning style, talents and potential, handicaps and deficiencies, etc.

Disadvantages:

1. Time constraints and chopped-up schedules are an obstacle.
2. Class size and teaching load are two of the biggest constraints.
3. Teacher Preparedness.

Distance Learning Mode

This mode allows the students to learn at their own pace & at their own place this mode is also useful for the students who do not have a personal computer. This is helpful for professionals, working executives to complete their studies and higher studies along with their current jobs.

Distance learning is gaining popularity among adults who are keen to upgrade themselves for better career opportunities. Distance learning provides an alternative for people to further their education without having to undergo the traditional classroom learning. Nowadays, more adults are becoming interested to pursue higher education in order to compete more effectively in the job market. In response to this growing interest in higher education, education providers are creating new courses using new technologies to meet the demand. Many distance learning online courses are developed to meet this increasing need.

Many people choose the distance learning mode of study because of the flexibility and freedom it provides. Some of them enroll in distance learning courses because they are working full-time and could not afford to lose their jobs. They need their income for their own as well as their families living expenses, and leaving their jobs would bring about financial problems. They have to find a way to fit learning into their schedule of family and job demands. Some people take up distance learning courses because they live far away from the school and attending classes is inconvenient. For some, this problem arises because the program they want to study is not offered by a nearby school and they have to choose a school far away from their residence. Traveling to a campus far away is inconvenient and time-consuming. Some people have family commitments which make attending class difficult. These people may have elderly or kids at home to look after and are not able to attend classes. Studying through distance learning can enable them to look after their family while they study. There are some

people who are keen to do a certain course but feel shy about joining a class. Hence, they choose distance learning courses because these courses do not require them to attend classes.

Distance learning has several benefits in which the classroom learning lack. One of the benefits is that a learner can learn at his or her own pace. In classroom learning, the faster learners need to wait for the slower learners to catch up with the lesson before the teacher can move on to the next topic. They have to slow down their pace for the sake of the slower learners. With distance learning, the faster learner can go on to the next topic any time he or she wants. Furthermore, in classroom learning, a learner has only one chance of listening to a class lesson. However, with distance learning, the learner can re-play a portion of the audio tape or video, or read again the notes for a particular module.

In classroom learning, each module of the course is given the relative amount of emphasis and time that the teacher deems necessary. In distance learning, students have the flexibility to spend the amount of time they choose for each module. They can spend less time on the modules that they are familiar with and spend more time and attention on modules which are new to them. The distance learning mode of study allows the students to use their time according to their needs.

One of the advantages of distance learning is that the student can have access to learning at any time and any place. There are no restrictions imposed on their study time and location. Students can easily fit learning into their family and work life. They do not need to adjust their family and work commitments in order to attend fixed class schedules. Besides, distance learning enables students to save on travel time and travel costs. They can spend more time and money on other areas.

Distance online learning creates interactions that stimulate understanding and exchange of ideas. Online programs require the student to actively participate in the learning process. Throughout the course, the student is presented with opportunities to interact with the course instructor as well as other students via website forums, chat rooms, Internet conferencing and emails. Online course developers try to get the student to participate and engage as much as possible.

Some research studies have shown that distance learning education can be as effective as campus-based education. These research studies reported that distance students can perform as well as or better than campus-based students. Many students who have succeeded in distance learning education have reported that they have a positive experience with distance learning courses.

We can see from the above that distance learning has many advantages. It provides a great opportunity for people to obtain higher education for their career advancement. If you are interested in taking up a course to upgrade yourself, you can consider a distance learning course.

Activity-based learning

Activity-based learning or ABL describes a range of pedagogical approaches to teaching. Its core premises include the requirement that learning should be based on doing some hands-on experiments and activities. The idea of activity-based learning is rooted in the common notion that children are active learners rather than passive recipients of information. If child is provided the opportunity to explore by their own and provided an optimum learning environment then the learning becomes joyful and long-lasting.

David Horsburgh: Pioneer of Activity-based learning

Activity-based learning started some time in 1944 around World War II when a British man David Horsburgh came to India and finally decided to settle down there. He was an innovative thinker and charismatic leader. He started teaching in Rishi Valley School. He joined the British Council and worked in Chennai and Bangalore for many years. After his voluntary retirement, he located a 7-acre (28,000 m^2) site in Kolar District and opened his school, Neel Bagh. Neel Bagh was based on an innovative idea of Horsburgh and known for its creative methods in teaching well-planned learning materials. With his wife Doreen and his son Nicholas, Horsburgh developed a diverse curriculum, which included music, carpentry, sewing, masonry, gardening, as well as the usual school subjects, English, mathematics, Sanskrit, and Telugu. These pedagogic materials were systematically planned, with sketches and drawings and an occasional touch of humour. Later Horsburgh created a magnificent library in Neel Baugh that was accessible to teachers and students. This initiative of Horsburgh was later proved to be one of the pioneer and milestones in ABL. In modern time ABL is the method of education followed in the Corporation schools of Chennai, from 2003, as an effort to provide special schools for children who had been freed from bonded labour.

States and Organizations initiative on activity-based learning.

The ABL in its contemporary form was first undertaken by the Chennai Corporation in 13 schools on a trial basis in 2003, has been adopted by all the 270 primary schools in the district. First designed and tested by the Rishi Valley School in Andhra Pradesh in the '90s, the Activity-Based Learning system has been successfully implemented in several Indian states and union territory, including Karnataka, Kerala, UttarPradesh,Gujarat,MadhyaPradesh,Haryana. Maharashtra, Chandigarh. In Tamil Nadu, UNICEF supported the Chennai Corporation to introduce the ABL methods in the Government schools. There are many organizations which cultivate and follow the principles of activity-based learning. Digantar Siksha evam Khelkud Samiti in Rajasthan, Sumavanam Village School in Andhra Pradesh, Walden's Path in Telangana and Vikasana School in Karnataka are the places which were established on the principles of activity-based learning.

Philosophy

The philosophy of ABL finds its antecedents in the common notion that learning can when it is initiated by the surrounding environment and motivated by providing opti opportunities to learn. A fearless and freedom to express environment always adds to best learni outcomes.

Impact on India

Under Activity Based learning education main focus is on child or we can say that it is one of child centered approach. It develops self-learning skill among the learners and allows a child to study according to his or her skill. Activities here can be in the form of songs, Drawings, Rhymes, Role play to teach a letter or a word, solve mathematical problems, form a sentence, and understand social science or even concept of science. The learner takes report Card only after completing all the steps in a subject. If a child is absent even a single day he starts from where he left unlike in the old system and the child had to do self learning of the missed portions.

The key feature of the Activity Based Learning (ABL) method is that it uses child-friendly educational aids to foster self-learning and allows a child to study according to his or her aptitude and skill. ABL serves as one model of child-centered, child-friendly education, which is the mandate of the Right of Children to Free and Compulsory Education Act (RTE) Act in India.

The Sarva Shiksha Abhiyan Scheme by Government has introduced many initiative and creative methods to bring about changes in teaching method for both- Teacher as well as learners. In state of Tamil Nadu, the elementary schools have taken initiative to use methodology called Activity Based Learning through Sarva Shiksha Abhiyan.

Characteristics of activity-based learning

The key feature of the ABL method is that it uses child-friendly educational aids to foster self-learning and allows a child to study according to his/her aptitude and skill. Under the system, the curriculum is divided into small units, each a group of Self Learning Materials (SLM) comprising attractively designed study cards for English, Tamil, maths, science and Social Science. When a child finishes a group of cards, he completes one "milestone". Activities in each milestone include games, rhymes, drawing, and songs to teach a letter or a word, form a sentence, do maths and science, or understand a concept. The child takes up an Exam Card only after completing all the milestones in a subject. If a child is absent one day, he/she continues from where he/she left unlike in the old system where the children had to learn on their own what they missed out on.

According to observers, the ABL method has created a visible improvement in children's learning and psychology. Children learn to make independent decisions at a young age, from choosing their activity card for the day, to marking their own attendance. Under the system, the curriculum is divided into small units, each a group of Self Learning Materials (SLM) comprising attractively

designed study cards for English, Tamil, Maths, Science and Social Science. When a child finishes a group of cards, he completes one 'milestone.

Activities in each milestone include games, rhymes, drawing, and songs to teach a letter or a word, form a sentence, do maths and science, or understand a concept. The child takes up an Exam Card only after completing all the milestones in a subject. If a child is absent one day, he continues from where he left unlike in the old system where the child had to learn on his own what he missed out on. Integrated in the curriculum are activities to create awareness about the environment, sanitation, health, and nutrition. These are brought across through innovative methods like Bommalattam (a puppetry show) in Tamil and through song and rhymes.

SUGGESTIONS FOR ENRICHMENT OF THE ABL METHOD

1) India is a country with tremendous diversity in every aspect. When one has a generalization about any fact in India, an exception to it will crop up immediately. In the school curriculum, the experiencing of the vastness of the cultural spectrum must find some place. The 'empty slots' must seek to bring originality and variety. Towards this end, the training of teachers should be strengthened.

2) Music, as it seems to be taught, is a collective effort by children to sing rhymes and songs at the top of their voices. In this activity, there is no sign that much has changed from an earlier era. This needs to be modified and moderated. Children can learn to sing softly, to sing in tune and to take turns to sing. One does not get the idea that they understand what they are singing. There is a sense of enjoyment, of course and that is good, but a feeling of competent singing will be a value addition.

3) Flexibility is allowed in pace of learning and this is a boon. A certain level of flexibility must be available for the occasional re-grouping of children. The practice of forcing children to compete and ranking them according to their performance is shunned by most enlightened educators. And the ABL is quite child-friendly in this respect. Here it is important to see that having children of the same age together in an activity does not necessarily entail competition. Also it is possible to introduce a small element of competition without hurting anyone, a strategy which has been tried with success. Children of the same age are divided into two or three groups. The quiz question or alternatively, the athletic task is given to the group. Every child must have one chance, but can get help from others in the group.

4) The shadow puppet stories are good. They are simple enough for all children to know the entire dialogue by heart, as we observe from watching a performance. There is scope for introducing other themes for shadow puppets and also other styles of puppetry and dramatization. Hand puppets, glove puppets, finger puppets and a host of other kinds of play materials will bring joy to the children. Drama enables them to cultivate the imagination and enhances their ability to speak clearly and articulately, to express feelings and to convey messages directly and indirectly. Expanding the scope and variety of theatre-based activity is strongly recommended.

5) Every school should have a Dictionary in Tamil and one in English. Children should be [illegible] "dictionary skills". Knowing the order of the alphabets is certainly the first step. Likewise, Encyclopaedia in one of the languages would be a tremendous asset for their learning. In the ABL, it not clear what a child, who has completed the ladders, can do with his time. In other words, there must be access to other kinds and higher levels of knowledge. The information ceiling must be raised to provide room at the top.

6) Story books for reading in class and out of class must be provided in large numbers. This should be treated as a priority.

7) The Rishi Valley rural schools, which provided the template for the ABL schools, had one very important part of education i.e. being sensitive to the environment and conserving water, growing plants and creating a green space around the school. That aspect has been totally neglected in the city schools which we visited. Just outside the school room, there was rubble and dying grass. No attention had been given by anyone in the system, to keeping it clean or attractive. Since manual labour of any kind is totally absent in the set of school activities, it might be a matter to take up after the first rains.

8) Many of the formal sports, which would be ideal for young children, require space and equipment. And lack of funds may be cited as the reason for their conspicuous absence. But athletics can be introduced at very little cost. A good sand pit and a few meters of rope can take care of High Jump and Long Jump. As for running, one needs only some safe space, preferably adjoining the school.

9) This system is better than any other which one would come upon in India, to handle the problem of understaffed schools. The inadequate 16 number of teachers in our rural schools is a constant problem. On one hand, there are thousands of trained teachers waiting to get employment and on the other, there are a number of Primary schools which are short of two or even three teachers. The ABL can be used with advantage, but its success in the long run, will be determined by the children's access to a teacher in the classroom.

10) The educational scene in Tamil Nadu has many positive ratings to its credit. ABL must build on the strengths. There are many achievements to be proud of, but one cannot afford to be complacent. There must be an annual review of the materials, the methods and the learning processes to ensure success and to reach even higher levels. This educational initiative could well be a forerunner for a positive change in educational standards across the country. We are now at the threshold of a silent revolution.

Merits of ABL Method

1. No Home work
2. Timetable is in units of half day
3. Scope for teacher creativity
4. Clarity of lessons
5. Greater degree of involvement.

THE SCOPE OF ALM

The aim of ALM is empowerment of the learner in such a way that he or she is confident and able to function in many contexts. In the middle school years - (classes 6-8) such learning can be blended into the curriculum of any school easily. It includes:

- learning to affirm oneself and one's learning style –The ALM classroom
- learning to be healthy and safe ---Biology curriculum enrichment
- learning to think skilfully, recognise and deal with one's feelings and be resourceful in a variety of situations - Learning for Life Units
- learning to live in social systems - living and working together with other people, good citizenship skills, being able to participate in the debate of our times--- (Civics curriculum enrichment)
- learning to live in and interact with a physical environment – finding environmentally viable responses in terms of lifestyle and choices (Environmental Education and Biology curriculum enrichment) Above all the Active Learning Skills will help students negotiate the world of knowledge with skill and enthusiasm, confident of their own abilities and opening widening newer avenues to learning.

UNIQUE ADVANTAGES OF THE ACTIVE LEARNING METHODOLOGIES

- Active engagement on the child's part; (Learn to play the cello by playing it John Holt)
- Provides a template for learning, and learning to learn
- The child is not subjected to endless passivity
- Applicable in large classrooms and schools with few teachers
- Requires no special aids or special equipment
- Children can be resources for each other through paired and group activity
- The teacher can devote some time to children who need special help
- Allow the child to check her/his work against the teacher's and thus save the teacher endless corrections while ensuring accuracy in child's learning
- Works at child friendly and realistic assessment formats
- The beauty of the process is its simplicity
- Allows room for all children's voices to be heard through discussions and presentations

ROLE OF A TEACHER

Are you creating that strange atmosphere where actual learning takes place? J.Krishnamurti, Letters to schools while it has been recognised that the best teacher is one who is willing to learn, there is not much evidence of this in the way schools run. The learning of the teacher is left to individual

motivation and chance. The individual teacher needs to be open to learning, not just to the s
also to alternate approaches to the class, the group, the individual. This is an uncomfortable
teachers. The times require a teacher to go to class and do things completely differently, from th
teaching happened till last year, last month. There is much anxiety and irritation as is inevitable.

School administration will have to offer support to teachers in these difficult and interesting times. It may be good to use the phrase "Educator Learner" and thus legitimize the learning component of the role. In keeping with the ideas mentioned in the previous sections of this manual the teacher is viewed as a facilitator in the learning context.

The teacher's role with students must cover the following:

- to set the context and the tone...
- to watch over the interactions and responses of the students
- to help students share and internalise the intentions of the academic\
- program in life term
- to respond to the information, difficulties and unusual events humanely and with fairness.
- to report unusual events and problems with a view to finding sensible and humane solutions.
- to ensure effective teaching - learning processes with assessment and support.
- Set the context
- Watch over interaction
- Help the students to internalize intentions of the academic programme.
- Ensure effective teaching - learning process
- Find solutions to unusual events ad problems.

There are many sources from where a teacher can learn. Books and magazines have been available in the past. The internet today offers a rich repository of experiences and perspectives.

THE ALM CLASSROOM

In the classroom where it is established that active learning will happen, the educator will be visible as a moving presence, much like the ABL classrooms, but less engaged with students, as the students will be more engaged in using their capacities and engaged in discussion among themselves. The teacher may join a small group occasionally, but this is not a necessary requirement. This does not mean the educator will not be heard at all. On the contrary, the educator will be heard at the end of the student endeavours. For the ALM classroom to happen purposefully, the students would need a clear introduction on what to expect and why this is thought to be a good move ahead. There is the view that students may not understand the full complexity of ALM. It is important nevertheless that they are oriented at the beginning.

The important variations are as follows:

• In the traditional classroom the teachers gives the instructions orally. The ALM classroom will begin with students reading the instructions. This is an important first step as it • builds on existing capacity to read • allows the pace of reading to suit the individual and not one pace for all • will require the teacher to withhold his / her training.

• In the traditional classroom the teacher introduces the topic. In the ALM classroom, occasionally the teacher introduces the topic, but mostly the student accesses the material through reading. Permits space for self pacing and use of existing capacity

• In the traditional classroom the teacher provides a view of the topic and more exploration happens through the questions of the teacher. In the ALM classroom the student raises questions first and then is exposed to several views through discussion.

• In the traditional classroom the student write answers to teachers questions. In the ALM classroom the student writes his own questions. • This offers space and opportunity for pondering and thinking and taking oneself seriously.

• In the traditional classroom the teacher introduces the topic and sums up (teacher may need to be speaking almost the whole time 25 to 40 mins). In the ALM classroom, occasionally the teacher introduces the topic, but almost always has a concluding session that address the questions the teacher has brought up and adds from the educator's experienced perspective. (The teacher is required to speak a maximum of 12 to 15 mins to the whole group.) • This makes for enhanced student receptivity and less need to order the full class • the teacher's voice is a valued contribution and looked forward to rather than the taken for granted voice in the classroom. •

The important processes in the traditional classroom are listening to the teacher and following oral instructions. In the ALM classroom the important processes are reading, writing, questioning, discussing with peers and listening to the teacher. •

The important assumptions in the traditional classroom are that listening to the teacher is most important and one must follow oral instructions. An important assumption the ALM classroom is that one begins with exercising one's capacities and to learn from the teacher one needs to have been active first with all the capacities and resources one has one's disposal. In our experience, students grasp the processes in a very short time and this enables them to take ownership of the process and participate in the running of the class. • One way for the methodologies to sink in is to offer students the opportunity of running a class after about 3 or 4 weeks. • The teacher will see at once how much of the process has sunk in. • The student's understanding, like the educator's, will grow and deepen with time and practice of the processes.

Overview of ALM

School is structured around transacting subjects, in the way knowledge has been organiz through history. The Industrial Revolution made many things possible. It also brought in mass schooling that was built around the dominant view of the time - that students were like empty vessels and knowledge had to be poured into them. Access to knowledge meant having a teacher 'tell' and 'explain'. This was thought the most 'efficient' way of 'transacting' the required knowledge. And schools trying to communicate the 3Rs, had to have order. The classrooms have been largely passive for the past 150 years except for the odd school that tried something different.

Premises of the OLD order: Children do not know how to lead their life properly and need to be taught. They can then go out into the adult world and apply their knowledge. This has meant acquainting them with historical knowledge and then assuming that this preparation will lead them to college and jobs, and hence security and happiness.

Premises of the NEW order: Children and adults are no different in the psychological realm. They can learn the art of learning, living intelligently by doing so, not by preparation. If one knows how to learn, how to be collaborative and how to handle knowledge, one can live intelligently in the now. The processes of education are not different from the processes of intelligent living.

Constructivism had been offered as a meaningful approach to education, but did not manage to dent the structure of schooling. The knowledge revolution, with knowledge doubling every 5 years, 4 years and now every 2.5 years, has brought forward a rearrangement of ideas and fresh thinking, and a push for greater efficiency.

Reading and writing are individual activities, unless one is reading aloud for others to hear. Reading involves comprehending words. Reading also demands listening to what the writer wishes to communicate. Understanding means gathering relevant details and getting a sense of what one has read. Alertness and attentiveness demand that one understands whatever one is listening to, or reading, is another's viewpoint.

ALM sequence

Class works in small and large groups for discussions

Teacher is a facilitator or learning then the conveyor of information

Teacher introduces the topic

Children read the lesson on their own with sufficient time provided

Discuss among themselves in groups and ask clarifications

Depict the concept in the form of mind map

Each child able to understand, query and explain a concept

Steps in lesson planning in ALM

Introducing the content

Understanding the content

Reading the content

Constructing mind map

Summarizing

Assessment

Revisiting the content

Curriculum Transaction approaches

- Group works
- Project works
- Seminar presentations
- Assignments
- Symposia
- Discussions
- Workshop practices
- Preparation of learning materials
- Self and peer evaluation
- Micro teaching sessions
- Club activities
- Citizenship training camp
- Study tour
- Buzz sessions
- Use of ICT
- Portfolios
- Quiz
- Debates
- Peer teaching
- Brainstorming
- PowerPoint presentations
- Book reviews
- Research Colloquium
- Note making
- Note taking
- News reading in the morning assembly.
- Verse Recitation
- Thought for the day presentation by the students.
- Gardening
- Extension activities
- Panel discussion
- Extempore Speeches
- Paired leaning
- Criticism and discussion classes
- Album preparation
- Role play and simulation
- Black board sketches
- Co-operative learning
- Study circle
- Tutor-ward system
- Remedial Teaching

Computers and the Internet

Many people use computers and the Internet as a way of communicating with the outside world. Others surf the Internet to buy things while some people create Web sites as part of their business.

Listen to the words below and consult a dictionary if you need a definition. Write a sam
for each word to learn how it is used in context. You can use the Internet to find sample sent
related information.

Role of Computers in Education

Computer technology has a deep impact on the education sector. Owing to memory capacities of computers, large chunks of data can be stored in them. They enable quick processing of data with very less or no chances of errors in processing. Networked computers aid quick communication and enable web access. Storing documents on computers in the form of soft copies instead of hard ones helps save paper.

The advantages of computers in education primarily include:

Storage of information

Quick data processing

Audio-visual aids in teaching

Better presentation of information

Access to the Internet

Quick communication between students, teachers and parents

Computer teaching and interactive learning play a key role in education. Computer technology is integrated into the modern education system.

Computers - A Brilliant Aid in Teaching

Students find it easier to refer to the Internet than searching for information in fat books. The process of learning has gone beyond learning from prescribed textbooks. Internet is a much larger and easier-to-access storehouse of information. When it comes to storing retrieved information, it is easier done on computers than maintaining hand-written notes.

Computers Gave Impetus to Distance Education

Online education has revolutionized the education industry. Computer technology has made the dream of distance learning a reality. Education is no longer limited to classrooms. It has reached far and wide, thanks to computers. Physically distant locations have come closer due to Internet accessibility. So, even if students and teachers are not in the same premises, they can very well communicate with one another. There are many online educational courses, whereby students are not required to attend classes or be physically present for lectures. They can learn from the comfort of their homes and adjust timings as per their convenience.

Computers Improve Presentation of Information

Computers facilitate effective presentation of information. Presentation software like PowerPoint and animation software like Flash among others can be of great help to teachers while delivering lectures. Computers facilitate audio-visual representation of information, thus making the process of learning interactive and interesting. Computer-aided teaching adds a fun element to

education. Teachers hardly use chalk and board today. They bring presentations on a flash drive, plug it in to a computer in the classroom, and the teaching begins. There's color, there's sound, there's movement - the same old information comes forth in a different way and learning becomes fun. The otherwise not-so-interesting lessons become interesting due to audio-visual effects. Due to the visual aid, difficult subjects can be explained in better ways. Things become easier to follow, thanks to the use of computers in education.

Computers Enable Internet Access

Internet has information on literally everything and computer technology enables easy access to it. Internet can play an important role in education. As it is an enormous information base, it can be harnessed for retrieval of information on a variety of subjects. The Internet can be used to refer to information on different subjects. Both teachers and students benefit from it. Teachers can refer to it for additional information and references on the topics to be taught. Students can refer to web sources for additional information on subjects of their interest. The Internet helps teachers set test papers, frame questions for home assignments and decide project topics. And not just academics, teachers can use web sources for ideas on sports competitions, extracurricular activities, picnics, parties and more.

Computers Allow Efficient Data Storage

Computer hard drives and storage devices are an excellent way to store data. Computers enable storage of data in the electronic format, thereby saving paper. Memory capacities of computer storage devices are in gigabytes. This enables them to store huge chunks of data. Moreover, these devices are compact. They occupy very less space, yet store large amounts of data. Both teachers and students benefit from the use of computer technology. Presentations, notes and test papers can be stored and transferred easily over computer storage devices. Similarly, students can submit homework and assignments as soft copies. The process becomes paperless, thus saving paper. Plus, the electronic format makes data storage more durable. Electronically erasable memory devices can be used repeatedly. They offer robust storage of data and reliable data retrieval.

This was about the role of computers in education. But we know, it's not just the education sector which computers have impacted. They are of great use in every field. Today, a life without computers is unimaginable. This underlines the importance of computer education. Knowledge of computers can propel one's career in the right direction. Computers are a part of almost every industry today. They are no longer limited any specific field. They are used in networking, for information access and data storage and also in the processing and presentation of information. Computers should be introduced early in education. It won't be an overstatement to say that computer education is as fundamental as learning English.

Computer Technology

For Children

For children, computer technology has provided an indescribably wealth of resources, information and knowledge; since the introduction of the internet, students are now able to access

information on whatever subject they want, wherever they want. Resources include journals, articles, e-books, practice tests and examinations, model answers and research findings. Research has also suggested that computer technology has helped students to improve their grades in other subjects, most notably science, practically, students can work much faster using a computer which enables them to do more study in the same period of time.

For Staff

Computer technology has enabled teachers to make their lessons more interactive and therefore more interesting and rewarding; this method has also been shown to improve pupil performance as lessons are more memorable and therefore students are able to retain information more effectively. Teachers, like students, can also find a whole host of resources on the internet which can provide inspiration and advice for classes; teachers are also able to recommend good resources to student to further encourage and stimulate their learning.

Practical improvements

Computer technology has enabled systems of obtaining and recording information much more efficient and effective; computer records are much harder to misplace than realms of paper records. Additional changes such as submission of work via email and responding to enquiries online save time and energy.

Media technology

In addition to computers, many schools and colleges are using new methods of technology to enhance the learning experience; these include digital television channels. DVDs, digital radio and television allow students to access a wealth of different channels which cover a vast range of different subjects including languages, science, history, and geography to name just a few. Children are used to new technology as they have grown up with it; it is therefore undoubtedly beneficial that they have the option to use it to increase their learning capacity and pursue their interests. Educational programmes and podcasts are now widely available to download to your computer or MP3 player; this makes education more, modern and multi-faced.

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Unit – 4 – Curriculum Evaluation

Evaluation

Evaluation is the process of determining the value of something or the extent to which goals are being achieved. It is a process of making a decision or reading a conclusion. It involves decision making about student performance based on information obtained from an assessment process. Assessment is the process of collecting information by reviewing the product of student work, interviewing, observing, and testing.

Evaluation is the process of using information that is collected through assessment. The ultimate purpose of any evaluation process that takes place in schools is to improve student's learning (Howell and Nolet, 2000). Evaluation entails a reasoning process that is based on influence. Inference is the process of arriving at a logical conclusion from a body of evidence. Inference usually refers to the process of developing a conclusion of the basis of some phenomenon that is not experienced or observed directly by the person drawing the inference. Evaluation is a thoughtful process. We use it to help us understand things. Evaluation has been defined in a variety of ways, all of which have at their core the idea of comparisons between things, note the differences, summarize our findings, and draw conclusion about result. (Deno, Winkin, Yavorsky, 1977). Evaluation is the judgment we make about the assessment of student learning based on established criteria. It involves a process of integrating assessment information to make inferences and judgment about how well students have achieve curriculum expectations. Evaluation involves placing a value on and determine the worth of student assessment. Evaluation is usually made so that process can be communicated to students and parents effectively. Evaluation provides the following information;

- Directly to the learner for guidance
- Directly to the teacher for orientation of the next instruction activity
- Directly to external agency for their assessment of schools functioning in the light of national purposes

Curriculum Evaluation

Curriculum Evaluation is the process of obtaining information for judging the worth of an educational program, product, procedure educational objectives or the potential utility of alternative approaches designed to attain specified objectives (Glass and Worthem, 1997). Curriculum evaluation focuses on determine whether the curriculum as recorded in the master plan has been carried out in the classroom in evaluation a curriculum, the following key question are usually asked in curriculum evaluation basically:

- Are the objectives being addressed?
- Are the contents presented in the recommended sequence?
- Are students being involved in the suggested instructional experience?
- Are students reacting to the contents?

According to Gatawa (1990: 50), the term curriculum evaluation has three major meanings:

- The process of describing and judging an educational programme or subject
- The process of comparing a student's performance with behaviourally stated objectives
- The process of defining, obtaining and using relevant information for decision-making purposes

Objectives of Curriculum Evaluation

Evaluation of curriculum is an integral and essential part the whole process of curriculum development. It is a continuous activity and not a 'tail-end experience'. Evaluation and planning are complementary process which occurs almost simultaneously and continuously. Planning is made on the basis of evaluation and vice-versa. However as a separate state evaluation has its own entity. The importance of curriculum evaluation is to determine the value of the curriculum itself is the appropriate for the particular group of students with whom it is being used. The objectives of curriculum evaluation are then stated as:

- To determine the outcomes of programme
- To help in deciding whether to accept or reject a programme
- To ascertain the need for revision of the course content
- To help in future development of the curriculum material for continuous improvement
- To improve methods of teaching and instructional techniques

Purposes of Evaluation

The purpose of an evaluation is to determine the value of something. Most evaluation experts contend that the main reason of evaluating a curriculum is to provide information for making decisions about either individuals or the curriculum.

i. Decision about Individuals: If the evaluation is about individuals or learners, the following are the purposes are to be considered:

a. Diagnostic: means that those who must make diagnostic decisions require information about strengths and weaknesses and determination of areas that need special instructional attention.

b. Instructional Feedback: means that the decision concern adjustments students might need to make in their approaches to studying a subject based on their knowledge of the progress they are making.

c. Placement: means that the information about the level of proficiency of the students in particular skills in order to place them in group that are relatively homogeneous.

d. Promotion: means that the decision about promotion is based on information about the proficiency and maturity of students in order to decide whether or not to promote to the next grade level

e. Credentialing: means that it has to do with certification, licensure and otherwise attesting to the competence of a programme graduate. This decision requires attaining a predetermined passing level on a test designed by the credentialing body, typically the state or professional organization.

f. Selection: means that it is made by college admission offices, typically use existing data about student achievement (Grades), but this may also depend on standardized test.

ii. Decision about the Curriculum

Curriculum evaluation decisions are the following types:

a. Formative Evaluation

Formative evaluation occurs during the course of curriculum development. Its purpose is to contribute to the improvement of the educational programme. The merits of the programmes are evaluated during the process of its development. The evaluation results provide information to the programme developers and enable them to correct flaws detected in the programmes.

b. Summative Evaluation

In summative evaluation, the final efforts of a curriculum are evaluated on the basis of its stated objectives. It takes place after the curriculum has been fully developed and put into operation. This type of Evaluation plays as summative role when it enables administrators to decide whether or not a curriculum is good enough to warrant institutional support. Decision on whether a school system should formally adopt a curriculum, or whether an external funding agency should continue to support a curriculum

c. Diagnostic evaluation

Diagnostic Evaluation is directed towards two purposes either for placement of students properly at the outset of an instructional level of to discover the underlying cause of deviancies in student learning in any field of study.

Approaches to Curriculum Evaluation

Curriculum Approach is the way of dealing with a curriculum, a way of doing/creating/designing/thinking about a curriculum. There are various curriculum approaches facilitate differentiation by widening the options available for students to learn and be assessed. With a variety of approaches, students react with creativity, enthusiasm, and greater knowledge retention. The following are some of the approaches of curriculum in planning, implementing and evaluating the curriculum.

i. Behavioral Approach

Behavioral approach to curriculum is usually based on a blueprint. In the blueprint, goals and objectives are specified, contents and activities are also arranged to match with the learning objectives. In education, behavioral approach begins with educational plans that start with the setting goals or objectives. The change in behavior indicates the measure of the accomplishments.

ii. Managerial Approach

In this approach, principal is the curriculum leader and at the same time instructional leader who is supposed to be the general manager. The general manager sets the policies and priorities, establishes the direction of change and innovation, planning and organizing curriculum and instruction. Curriculum managers look at curriculum changes and innovations as they administer the resources and restructure the schools. Some of the roles of the Curriculum Supervisors are:

- Help develop the school's education goals
- Plan curriculum with students, parents, teachers and other stakeholders
- Design programs of study by grade levels
- Plan classes or school calendar
- Prepare curriculum guides/ teacher guides by grade level or subject area
- Help in the evaluation and selection of textbooks
- Observe teachers' activities and their functioning
- Assist teachers in the implementation of the curriculum
- Encourage curriculum innovation and change
- Develop standards for curriculum and instructional evaluation

iii. System Approach

The organizational chart of the school represents a system approach. It shows the line staff relationships of personnel and how decisions are made. This systems approach gives equal importance to the following:

❖ Administration

- ❖ Counseling
- ❖ Curriculum
- ❖ Instruction And
- ❖ Evaluation

iv. Humanistic Approach

The humanistic approach considers the formal or planned curriculum and the informal or hidden curriculum. This approach is rooted in the progressive philosophy and child-centered movement. It considers the whole child and believes that in curriculum the total development of the individual is the prime consideration. The learner is at the center of the curriculum; anything in the schools can be evaluated in term of its contribution to the students overall learning and its cost. Evaluation helps to gather data to support a decision to accept, change, or eliminate something. It serves to identify strengths and weakness of curriculum before implementation and the effectiveness of its delivery after implementation. Each Approach expresses a perspective about Curriculum Development which Impacts on:

- ➢ The design of the curriculum
- ➢ The role of schools
- ➢ Administrators
- ➢ Teachers
- ➢ Learner
- ➢ Curriculum Specialist
- ➢ Requirements for Evaluation and implementation

CRITERIA FOR CURRICULUM EVALUATION

There are four major criteria for assessing the workability of the curriculum.

i. Subject: In the curriculum various subjects are included such as - Hindi, English, mathematics, Physical Sciences, Biological sciences, History, Home science, Psychology, Sociology, Physical Education, Art and Drawing etc. The structure of content of these subjects is determined for the curriculum development.

ii. Experiences: the curriculum provides the following type of experiences to the students, social, historical, geographical (time and place sense) physical, political, civic senses, religious, spiritual and reactive experiences, expression of ideas facts and events.

iii. Skills: Some curriculum provides the situations for developing skills or psychomotor activities- languages reading writing, speaking, observation, perception use of different type instrument in the workshops and field works communication skills, craft-work, verbal and non-verbal communication skills. It is related to psychomotor objectives.

iv. Attitude and Values: The types of curriculum for provide the experiences for developing affective domain of the learners. The feeling, belief attitudes and values are developed. It develops self-confidence, honesty, sensitivity, sincerity, morality, objectivity, character and adjustment.

CURRICULUM EVALUATION PLAN

The fundamental concerns of curriculum evaluation relate to:

- Effectiveness and efficiency of translating government education policy into educational practice;
- Status of curriculum contents and practices in the contexts of global, national and local concerns;
- The achievement of the goals and aims of educational programmes Curriculum evaluation aims to examine the impact of implemented curriculum on student (learning) achievement so that the official curriculum can be revised if necessary and to review teaching and learning processes in the classroom. Curriculum evaluation establishes:
- Specific strengths and weaknesses of a curriculum and its implementation
- Critical information for strategic changes and policy decisions
- Inputs needed for improved learning and teaching
- Indicators for monitoring

Curriculum evaluation may be an internal activity and process conducted by the various units within the education system for their own respective purposes. Curriculum

evaluation may also be external or commissioned review processes. These may be undertaken regularly by special committees or task forces on the curriculum, or they may be research-based studies on the state and effectiveness of various aspects of the curriculum and its implementation. These processes might examine the effectiveness of curriculum content, existing pedagogies and instructional approaches, teacher training and textbooks and instructional materials. The ultimate goal of curriculum evaluation is to ensure that the curriculum is effective in promoting improved quality of student learning. Fulfilling the diverse objectives of diagnosis, certification and accountability requires different kinds of assessment instruments and strategies selected to achieve specific purposes. If the curriculum for a particular grade is not revised for a long time, it would become obsolete, recent developments in the field will not find a place in it; it will not be effective and efficient. In order to develop an efficient and effective curriculum we should evaluate the existing curriculum and modify it to make it more relevant. Thus the need for evaluating a curriculum emerges from the field. In any content area there would be developments taking place periodically and if the current changes are not incorporated, the students would be unable to know the reality. In order to incorporate recent developments and to fit them into the structure of the course one requires analyzing curriculum systematically. There could be some concepts and practices in a curriculum, which become outdated over time and are no longer in practice in the field.

To improve the efficiency of curriculum one has to analyze the outputs and inputs of the educational system and make the necessary modifications as revealed by the analysis can be accomplished by carrying out a curriculum evaluation. There could be differences between intended curriculum and the operational curriculum. Intended curriculum refers to the prescriptions in the curriculum document including operational and evaluation procedures of a course. The operational curriculum refers to actual processes in a classroom though which the intended curriculum is transacted. There could be differences between what is intended and what is implemented.

Validity and Significance of Course Content

Validity and significance of course content means how logically the various subject curricula are made and their importance for daily life and for the world of work.

The NCF-2005 describes about the various subjects at school level, there role, importance, validity and significance. Below is the explanation of each subject matter according to NCF- 2005 which justifies the validity and significance of them.

Language

Language in this document subsumes bi-/ multilingualism. And when we talk of home language(s) or mother tongue(s), it subsumes the languages of home, larger kinship group, street and neighbourhood, i.e. languages(s) that a child acquires naturally from her/his home and societal environment. Children are born with an innate language faculty. We know from our everyday experiences that most children, even before they start their schooling, internalize an extremely complex and rule-governed system called language, and possess full linguistic capabilities. In many cases, children come to school with two or three languages already in place at the oral-aural level. They are able to use these languages not only accurately but also appropriately. Even differently talented children who do not use the spoken languages develop equally complex alternative sign and symbol systems for expression and communication.

Languages also provide a bank of memories and symbols inherited from one's fellow speakers and created in one's own lifetime. They are also the medium through which most knowledge is constructed, and hence they are closely tied to the thoughts and identity of the individual. Effective understanding and use of languages(s) enables the child to make connections between ideas, people and things, and to relate to the world around. If we wish to launch any sound programme for language teaching in schools, it is important to recognise the inbuilt linguistic potential of children as well as to remember that languages get socio-culturally constructed and change in our day-to-day interactions. Language(s) in education would ideally build on this resource, and would strive to enrich it through the development of literacy (scripts including Braille) for the acquisition of academic knowledge. Children with language-related impairments should be introduced

to standard sign languages, which can support their continued growth and development to the fullest.

Mathematics

As mathematics is a compulsory subject at the secondary stage, access to quality mathematics education is the right of every child. In the context of univeralisation of education, the first question to ask is, what mathematics can be offered in eight years of schooling that will stand every child in good stead rather than be a preparation for higher secondary education alone? Most of the skills taught in primary school Mathematics are useful.

However, a reorientation of the curriculum towards addressing the 'higher aims' mentioned above will make better use of the time that children spend in school in terms of the problem-solving and analytical skills that it builds, and in preparing children to better meet a wide variety of problems in life. Also, the tall shape of mathematics (where mastery of one topic is a prerequisite for the next) can be de-emphasised in favour of a broader-based curriculum with more topics that starts from the basics. This will serve the needs of different learners better. How should the Mathematics Curriculum be?

Science

Science is a dynamic, expanding body of knowledge, covering ever-new domains of experience. In a progressive forward-looking society, science can play a truly liberating role, helping people escape from the vicious cycle of poverty, ignorance and superstition. The advances in science and technology have transformed traditional fields of work such as agriculture and industry, and led to the emergence of wholly new fields of work. People today are faced with an increasingly fast-changing world where the most important skills are flexibility, innovation and creativity. These different imperatives have to be kept in mind in shaping science education. Good science education is true to the child, true to life and true to science.

This simple observation leads to the following basic criteria of validity of a science curriculum:

Cognitive validity requires that the content, process, language and pedagogical practices of the curriculum are age appropriate, and within the cognitive reach of the child.

Content validity requires that the curriculum must convey significant and correct scientific information. Simplification of content, which is necessary for adapting the curriculum to the cognitive level of the learner, must not be so trivialized as to convey something basically flawed and/or meaningless.

Process validity requires that the curriculum should engage the learner in acquiring the methods and processes that lead to the generation and validation of scientific knowledge and nurture the natural curiosity and creativity of the child in science. Process validity is an important criterion since it helps the student in 'learning to learn' science.

Historical validity requires that the science curriculum be informed by a historical perspective, enabling the learner to appreciate how the concepts of science evolve over time. It also helps the learner to view science as a social enterprise and to understand how social factors influence the development of science.

Environmental validity requires that science be placed in the wider context of the learner's environment, local and global, enabling him/her to appreciate the issues at the interface of science, technology and society, and equipping him/her with the requisite knowledge and skills to enter the world of work.

Ethical validity requires that the curriculum promote the values of honesty, objectivity, cooperation, and freedom from fear and prejudice, and inculcate in the learner a concern for life and preservation of the environment.

Social Sciences

The social sciences carry a normative responsibility of creating a strong sense of human values, namely, freedom, trust, mutual respect, and respect for diversity. Social science teaching should aim at generating in students a critical moral and mental energy, making them alert to the social forces that threaten these values.

CURRICULUM EVALUATION MODELS

1. Tyler's Evaluation Model

Tyler's goal attainment model or sometimes called the objectives-centered model is the basis for most common models in curriculum design, development and evaluation. The Tyler model is comprised of four major parts. These are:

- defining objectives of the learning experience
- identifying learning activities for meeting the defined objectives organizing the learning activities for attaining the defined objectives
- evaluating and assessing the learning experiences

The Tyler Model begins by defining the objectives of the learning experience. These objectives must have relevancy to the field of study and to the overall curriculum (Keating, 2006). Tyler's model obtains the curriculum objectives from three sources:

- ❖ the student
- ❖ the society
- ❖ the subject matter

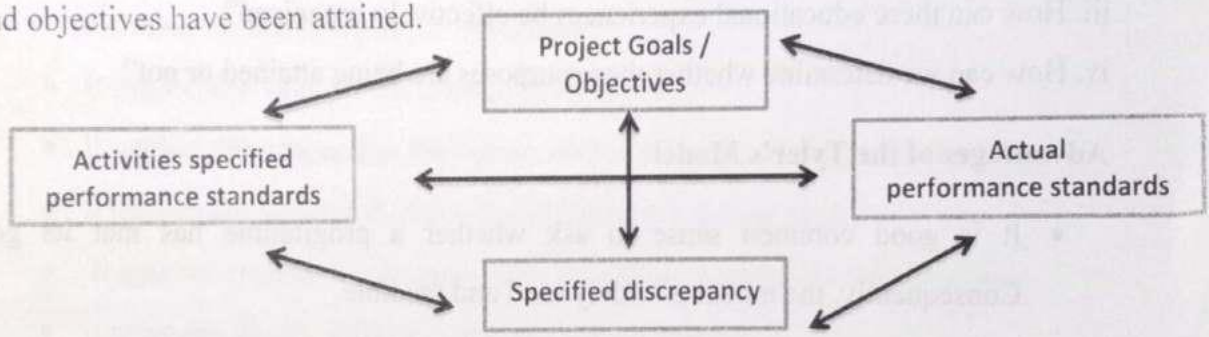
The objective oriented approach was developed in 1930s and was credited with the works of Ralph Tyler. Tyler regarded evaluation as the process of determining the extent to which the objectives of a project are actually attained. He proposed that for one to evaluate a project he/ she must:

- Establish broad goals or objectives of that project
- Classify the goals or the objectives
- Define those objectives in measurable terms
- Find situations in which achievement of objectives can be shown
- Develop or select measurement techniques
- Collect performance data
- Compare performance data with measurable terms stated

When defining the objectives of a learning experience Tyler gives emphasis on the input of students, the community and the subject content. Tyler believes that curriculum

objectives that do not address the needs and interests of students, the community and the subject matter will not be the best curriculum.

The second part of the Tyler's model involves the identification of learning activities that will allow students to meet the defined objectives. To emphasis the importance of identifying learning activities that meets defined objectives, Tyler states that "the important thing is for students to discover content that is useful and meaningful to them" . In a way Tyler is a strong supporter of the student-centered approach to learning. Overall, Tyler's model is designed to measure the degree to which pre-defined objectives and goals have been attained. In addition, the model focuses primarily on the product rather than the process for achieving the goals and objectives of the curriculum. Therefore, Tyler's model is product focused. It evaluates the degree to which the pre-defined goals and objectives have been attained.



Tyler's Model

From the Tyler's figure above, the beginning point of the curriculum development is educational objectives. Educational objectives are clear statements of what it is students know or be able to do as a result of a programme. Once the objectives are clearly delineated, the next angle of the triangle is concerned with designing and organizing the educational experiences that are likely to helps students master those objectives. The final stage of the triangle is concerned with the determining the whether the objectives are being attained, that is evaluating the programme in terms of the objectives. The objectives based evaluation focused inclusively on the degree of attainment of the pre-specified objectives of the specific statements of educational objectives in terms of student behavior and specific content. Once the objectives are explicitly delineated, the next step is to develop assessment techniques that permit students to demonstrate the

behavior in question. If the objective is clearly stated, the form the assessment can take is also clear.

Once measures of the objectives are developed, they are administered as pre- test to students before the prgoramme begins. The pre-test provides a baseline against which to compare performance at the end of the programme, when the students take the post-test. Changes from pre- test to post- test in the percentages of the students mastering each objective become the key criteria of the programme's success. Tyler's posited four fundamental questions or principles in examining any curriculum in schools.

These four fundamental principles are as follows:

i. What educational purposes should the school seek to attain?
ii. What educational experiences can be provided that is likely to attain these purposes?
iii. How can these educational experiences be effectively organized?
iv. How can we determine whether these purposes are being attained or not?

Advantages of the Tyler's Model

- It is good common sense to ask whether a programme has met its goals. Consequently, the model is widely used and credible.
- It forces programme personal to be clear about their indented outcomes and can be used to hold them accountable for attainment of outcomes.
- It minimizes disruption and instruction on the part of the evaluator, who only appear briefly to administer tests.
- The objectives are relatively inexpensive, particularly when standard machine scored tests are used.
- It provides easily quantifiable, "objectives" information about student performance
- It is easy to assess whether the project objectives are being achieved
- The model checks the degree of congruency between performance and objective
- The model focuses on clear definition of the objectives
- It is easy to understand in terms of implementation
- It produces relevant information to the project

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Limitation of the Tyler's Model

- The problem is that main goals cannot be specified in terms of easily measured behavior objectives, e.g. goals of preparing children to be good citizen.
- Most of the behavioral objectives are often a difficult process involving complex issues of feasibility, reliability, and validity.
- Programme often have unintended outcomes that may be more important than the goals of a programme either positively or negatively.
- Focusing on whether objectives have been attained does not address the worth of the objectives themselves It tends to focus on terminal rather than on-going programme performance
- It has a tendency to focus directly and narrowly on objectives with the little attention on the worth of the objectives
- It neglect the value of the objectives themselves
- It neglect the transaction the occurs within the project being evaluated
- It neglect the context in which the evaluation is taking place
- It ignores important outcomes other than those covered by the objectives
- It promotes linear, inflexible approach to evaluation
- There is a tendency to oversimplify project and tendency to focus on terminal rather than on –going and pre-project information
- It does not take unplanned outcomes into account. This is because it focuses on the stated objectives
- It does not pay enough attention to process evaluation. In other words it does not consider how the activities that lead to achievement of project objectives are carried

2. Stake's Model

Robert E Stake (1975) made a major contribution to curriculum evaluation in his development of the responsive model, because the responsive model is based explicitly on the assumption that the concerns of the stakeholders – those for whom the evaluation is done - should be paramount in determining the evaluation issues.

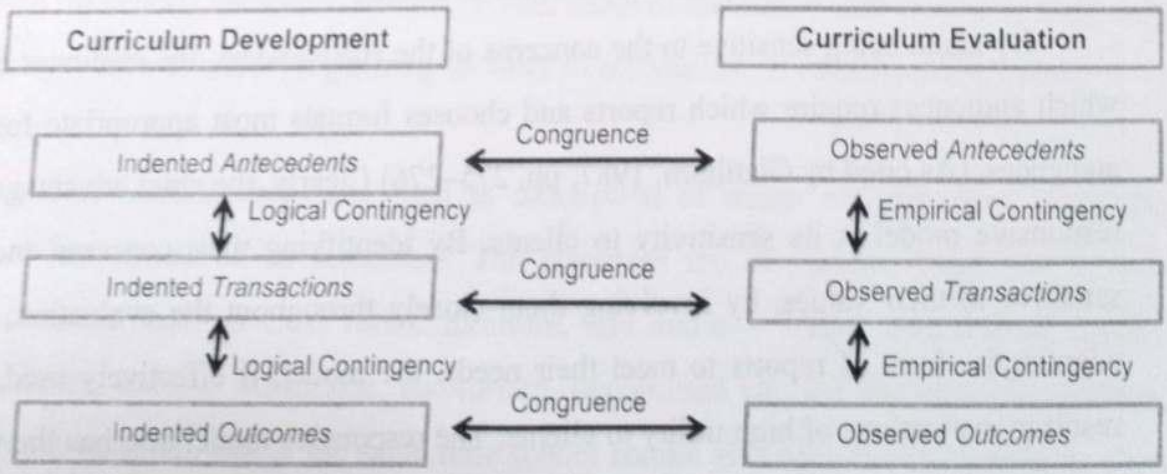
Stake recommends an interactive and recursive evaluation process that embodies these steps:

- The evaluator meets with clients, staff, and audiences to gain a sense of their perspectives on and intentions regarding the evaluation.
- The evaluator draws on such discussions and the analysis of any documents to determine the scope of the evaluation project.
- The evaluator observes the program closely to get a sense of its operation and to note any unintended deviations from announced intents.
- The evaluator discovers the stated and real purposes of the project and the concerns that various audiences have about it and the evaluation.
- The evaluator identifies the issues and problems with which the evaluation should be concerned. For each issue and problem, the evaluator develops an evaluation design, specifying the kinds of data needed.
- The evaluator selects the means needed to acquire the data desired. Most often, the means will be human observers or judges.
- The evaluator implements the data-collection procedures.
- The evaluator organizes the information into themes and prepares "portrayals" that communicate in natural ways the thematic reports.
- The portrayals may involve videotapes, artifacts, case studies, or other "faithful representations."

Stake proposed a model for curriculum evaluation Congruence – Contingency model (1969) is also known as Countenance model. The principal ways of processing the descriptive evaluate data: finding the contingencies among antecedents, transactions and outcomes and findings the congruence between events and observations.

- *Antecedents* are conations existing before the treatment beings i.e., student attitudes, achievement levels, attendance, etc. and teacher attitudes, years of experience, etc..
- *Transactions* are interactions among students, teachers, materials, and environment in the teaching learning process.
- *Outcomes* are the consequences of the programme – cognitive, affective, personal community- wide, immediate, and long-term.

Intent (intended students' outcome objective) and observations are congruence if what was intended actually happens, to be fully congruent the intended antecedents, transactions, outcomes must be identical with the observed antecedents, transactions, and outcomes. (This seldom happen and often should not). Greater congruence is between the intended and the observed outcomes, the better. Some evaluation studies concentrate only on the congruence between intended and observed outcomes. If our purpose is to continue a good curriculum or revise a poor one, we should know about congruence of antecedents and transactions as well. Contingencies are relationship among the variables. An evaluator's search for contingency is in effect the search for casual relationships. These are what Hasings (1966) called the "Ways of outcomes", Knowledge of what causes what obviously facilitates the improvement of instruction. One of the evaluator's tasks is identifying outcomes they are contingent upon particular antecedent conditions and particular instructional transactions.



Stake's Matrix for Processing Descriptive Data (adapted)

For as long as, there has been schooling, curriculum planning has rested upon faith certain contingencies. Today, every teacher arranges his presentation and the learning environment in a way that according to his logic – leads to the attainment of his instructional goals. On first step in evaluation is to record the potential contingency. A film of on floodwaters may be scheduled (intended transaction) to expose students to background for understanding conservation legislation (intended outcomes). Of those who know both subject matter and pedagogy, we ask, "is there a logical connection between this event and purpose?" if so, a logical contingency exists between these two intents. Whenever intents are evaluated, the contingency criterion is one of the logic. To test the logic of an educational contingency, evaluators' replies on previous experience, perhaps on research experience, with similar observable, on immediate observation of these variables, however, is necessary to test the strength of the contingencies among events.

Evaluation of observation contingencies depends on empirical evidence. To say, 'this arithmetic class progressed rapidly because the teacher was somewhat but not too sophisticated in mathematics' demands empirical data, either from, within the evaluation or from the research literature. The usual evaluation of a single programme will not alone provide the data necessary for contingency statements. Relationship requires variation in the independent variables. What happened with various teaching treatment? Here, too, as Ausubel has contended (1966), previous experience with this content and with these teaching methods is a basic qualification of the evaluator.

By again being sensitive to the concerns of the stakeholders, the evaluator decides which audiences require which reports and chooses formats most appropriate for given audiences. (As cited by Glatthorn, 1987, pp. 275–276) Clearly, the chief advantage of the responsive model is its sensitivity to clients. By identifying their concerns and being sensitive to their values, by involving them closely throughout the evaluation, and by adaptingthe form of reports to meet their needs, the model, if effectively used, should result in evaluations of high utility to clients. The responsive model also has the virtue of flexibility: The evaluator is able to choose from a variety of methodologies once client

concerns have been identified. Its chief weakness would seem to be its susceptibility to manipulation by clients, who in expressing their concerns might attempt to draw attention away from weaknesses they did not want exposed.

CIIP MODEL

CIPP approach to evaluation: CIPP model is Context, Input, Process, Product approach, developed by Stufflebeam (1983). It basically provides a very systematic way of looking at many different aspects of the curriculum development process. Although originally advocated for curriculum development process, it can be effectively used for school evaluation. For school education the kind of knowledge, skills, attitudes, habits that students acquire in their educative process is the actual product. There are various processes carried out in the school to get this product. Certain inputs are given to carry out these processes. All this i. e. input, process and product work under some context. When we talk about school education in rural area and in urban area, the context in which the two different schools work is different. We can apply this CIPP model to assess various aspects of school. This will enable us to evaluate schools in a very comprehensive manner. Basically this needs asking series of questions about four elements i. e. context, input, process and product of the model.

Context

This includes examining and describing the context of the school we are evaluating; determining the objectives, mission, and goals of school. The philosophy with which the school has started and the present status of the school with respect to their own ideology. How is school organizing its work to accomplish its objectives and goals?

Input

This includes activities such as description of inputs and resources. How the school has structured its resources? The resources are of various types. For school, infrastructure such as class room, furniture, and audio – Video aids, special rooms, laboratories, library, workshops, auditorium, playground etc. are the physical facilities which are essential. But at the same time school should also have human resources such

as teaching, nonteaching and administrative staff, counselors, special teachers etc. The school has to focus on various developmental aspects of the learner therefore inputs of different kinds like inputs for social development, emotional development; art, craft, physical development etc. also have to be procured by the school.

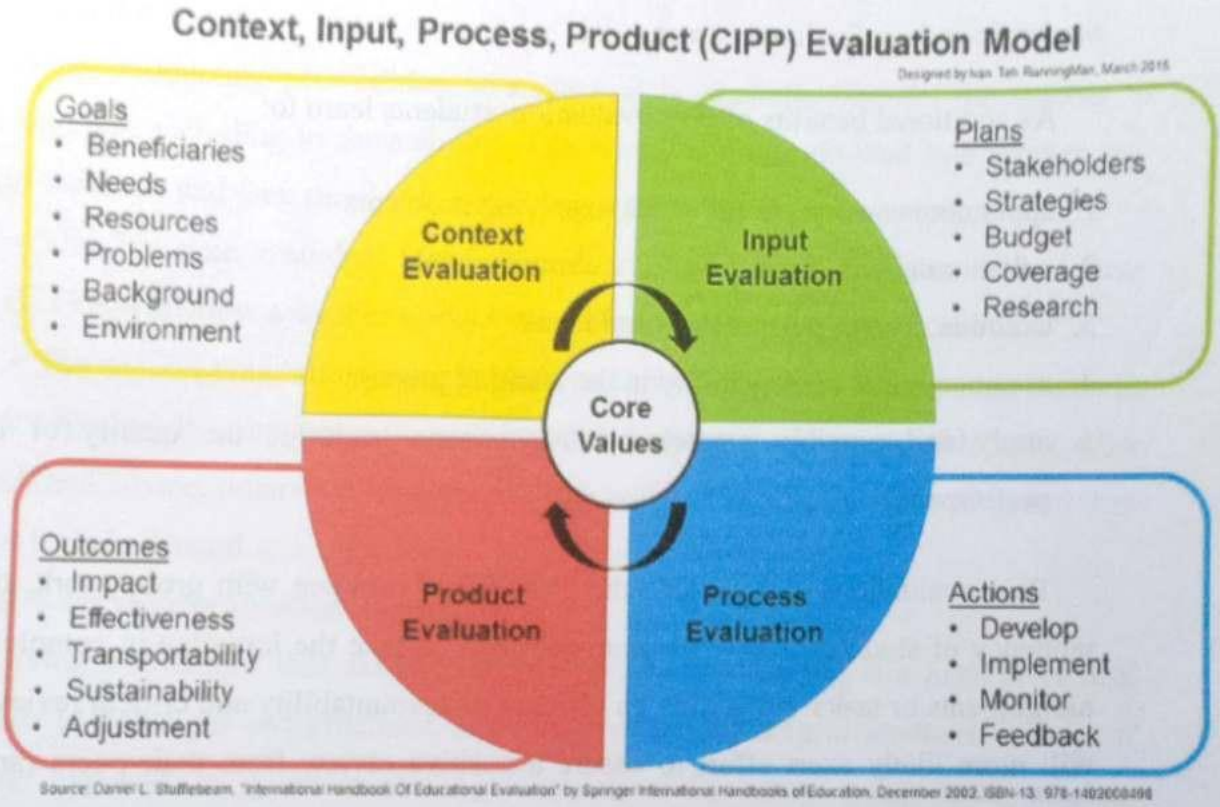
Process

Includes how the school is running the programmes. Implementation is a crucial phase in which the inputs are utilized in appropriate way to achieve the desired product. The evaluators when assess school processes, they will gain information about what is actually occurring in the school. It is in this phase that we can take implementation decisions. The schools have various programmes and practices. Each and every process in the school has to have a systematic approach. It may be teaching learning process, organizing events like workshops for students, parent teacher associations meetings, annual social program, sports meets, and celebration days, organizing students' co-curricular and extracurricular activities, preparing students for competitive and public examinations, for every process the school has to have a systematic approach.

Product

It includes determining and examining the practice and general outcome of the school. Very evident but the most important outcome of the school is the student of the school. The student in himself is not the product but the knowledge, skills, values, attitude etc that is gained by the student is the product. It is this which is going to be of use in his life as an individual or as apart of society. The child spends his formative age in the school and hence a child of age 16 who comes out of the school should be individually and socially productive. The schools usually decide to have 100 % results for boards' examinations but this alone should not be the indicator of the product of the school. The product of the school should not be measured only in terms of percentage of passing or number of meritorious students passing from school, but should focus on how the students of the school are succeeding in various walks of life in the society. How many students are working in different sectors of society and helping society to grow? How many students are holding important positions in various institutions and helping

the institutions to grow. These questions will give indications about the product quality of the school.



Source: Daniel L. Stufflebeam, "International Handbook Of Educational Evaluation" by Springer International Handbooks of Education, December 2002. ISBN-13: 978-1402008498

Peer evaluation

Peer evaluation is an effective collaborative learning strategy. Related to self-assessment, peer evaluation encourages students to critically examine a task and its performance, then communicate constructive suggestions for improvement. In the process of examining the work of peers, students reflect on the meaning of quality work in general, especially when consulting a detailed rubric or checklist as a guide.

The use of peer evaluation in group work can increase motivation, engagement and social presence in a course while maximizing instructional time. In effect, the students themselves provide feedback to one another, while the instructor focuses on more targeted guidance. The key for successful peer feedback is a constructive, honest environment in which students feel safe to share honest, yet helpful criticism.

Through monitoring one another, based on a rubric or checklist, students ultimately learn to better self-assess themselves, a skill which pay dividends throughout their academic and professional career.

As additional benefits of peer evaluation, students learn to:

1. apply course concepts and skills to solving problems
2. collaborate with others towards a common goal
3. examine diverse perspectives and ideas
4. assume greater responsibility in the learning process
5. apply (and possibly create) objective criteria to judge the quality of a task or performance

Peer evaluations also resolve the "free rider" problem with group work, that is, the tendency of students to rely on team members to take the initiative in completing group assignments or tasks. By adding an element of accountability and critical review, students will more likely exert effort to ensure a positive review from their peers (and create a good impression).

Important

One of the advantages of developing peer evaluation skills in pupils is that it can enable teachers to manage the learning of their pupils and organise their own resources more effectively. It allows teachers more time to observe how pupils are learning and to focus on the learning of particular groups of pupils who need additional input to clarify misunderstandings, or to extend learning. The main advantage to the pupils is that it provides students with the opportunity to develop their critical thinking skills by learning how to offer productive feedback, accept constructive criticism and master revision.

Charecteristics

Effective Peer evaluation should be:

- Considered and thoughtful

- Constructive
- Relevant
- Specific

When conducting peer editing in a class, it is generally best for the teacher to assign partners according to their ability. The class should be divided into weaker and stronger students, and they should plan on doing the peer review process twice:

- The first time, a student from group A should be matched with a student from group B. This will allow a weaker student to take help from a stronger student.
- The second time, allow weaker students to work together and stronger students to work together. It is important to give stronger students a chance to give each other feedback and advice, otherwise stronger students will not improve their writing and they may not feel challenged.

Strategies for peer evaluation

Giving evaluations that are both supportive and challenging is a high level skill that needs to be taught and practiced. If pupils are to offer helpful feedback it helps if they are exposed to good modelling. Fundamentally, they must have a clear understanding of what they are to look for in their peers' work.

The Class Teacher (CT) must explain expectations clearly to them before they begin.

- Provide practice sessions: provide a sample assignment usually written but it could be performed or spoken. As a group, pupils determine what should be assessed and how criteria for successful completion of the task should be defined. The CT gives pupils a sample completed assignment. Pupils assess this using the criteria they have developed, and determine how to convey feedback clearly to the fictitious pupil.
- Literacy circles using peer editing check lists can help focus pupil attention on key aspects of a specific task or aspect of the content or process of learning.
- Use of checklists: Pupils can also benefit from using rubrics or checklists to guide their evaluations. At first these can be provided by the CT; once pupils have more experience, they can develop criteria themselves. An example of a peer editing checklist

for a writing assignment might ask the peer evaluator to comment primarily on the content and organization of the essay. They can help the peer evaluator to focus on these areas by asking questions about specific points, for example, the presence of examples to support the ideas discussed.

• Pupil-teacher contracts: Contracts are written agreements between the pupil and CT, which commonly involve determining the number and type of assignments that are required for particular grades. For example, a pupil may agree to work toward the grade of "B" by completing a specific number of assignments at a level of quality described by the CT. Contracts can serve as a good model in goal setting and enable pupils to begin learning how to set learning goals for themselves.

• Good Self-evaluation and goals setting skills: a necessary part of effective study skills which enhance the functioning of study groups. Untrained pupils are likely to create lofty long-range goals ("to speak Russian)" that do not lend themselves to self assessment. To help pupils develop realistic, short-term, attainable goals, CT can use a framework like SMART targets.

• Compliments, suggestions and corrections strategy: explain that starting with something positive makes the other person feel encouraged, e.g. two stars and a wish

Advantages

Saves teachers' time

Faster feedback

Pedagogical

Metacognitive

Attitude

Goal-free evaluation

(GFE) is any evaluation in which the evaluator conducts the evaluation without particular knowledge of or reference to stated or predetermined goals and objectives. Goals are "broad statements of a program's purposes or expected outcomes, usually not specific enough to be measured and often concerning long-term rather than short-term

expectations", whereas objectives are "statements indicating the planned goals or outcomes of a program or intervention in specific and concrete terms".

The goal-free evaluator attempts to observe and measure all actual outcomes, effects, or impacts, intended or unintended, all without being cued to the program's intentions. As Popham (1974) analogizes, "As you can learn from any baseball pitcher who has set out in the first inning to pitch a shutout, the game's final score is the thing that counts, not good intentions". Historically, virtually all foundation-supported evaluations have been focused on goal attainment because it seems intuitive for a foundation to ask, What is the program (or project/ intervention) that we fund proposing to do and, consequently, how do we as funders determine whether the program is doing what it says it is going to do? Many scholars of philanthropy (e.g., McNelis & Bickel, 1996; Zerounian, Shing, & Hanni, 2011) assume that program goals are inherently relevant and therefore an examination of goals and objectives automatically should be included in program evaluation (Schmitz & Schillo, 2005).

At the very least, GFE can mediate by helping to avoid arguments over which goals to choose. Besides, as Coffman et al. (2013) state in reference to evaluating a foundation's strategy: One challenge is that strategy – with a clear goal and clear and sound theory of change – does not really exist at this level. It becomes too high-level or diffuse to fit together in a way that is more meaningful than just a broad categorization of activities and results.

Goal-free evaluation serves as a counter to evaluating solely according to goal achievement, yet before an evaluator can persuade funders and administrators to consider GFE, the evaluator must overcome two ubiquitous misconceptions: that GFE is simply a clever rhetorical tool and that it lacks a useable methodology. Both of these beliefs are contrary to the fact that the Consumers Union has been successfully conducting goal-free product evaluations for more than 75 years while Consumer Reports magazine editors rarely solicit the product manufacturers' goals during their evaluations. Hence, the purpose of this article is not to advocate for the use of GFE per se, but rather to introduce

GFE to the philanthropic community, present the facts of GFE use in program evaluation, describe aspects of GFE methodology, and highlight some of its potential benefits to foundations.

The Implementation of GFE Goal-free evaluation has been conducted in program evaluation both by design and by default in the more than 40 years since Scriven (1972) introduced it, yet several evaluators criticize GFE as pure rhetoric and imply that it lacks practical application (Irvine, 1979; Mathison, 2005). Although evaluators know of GFE in theory, they have little knowledge of it in practice. Without knowledge of GFE's use, evaluators are less likely to believe it can be used. Shadish, Cook, and Leviton (1991) describe how this leads to a perpetuation of goal-based evaluation (GBE): Goal-free evaluation may be one of the least intuitive concepts in any evaluation theory.

Evaluators have difficulty accepting the notion that they can, much less should, evaluate a program without knowing its goals. As a result, while most evaluators have heard of goal-free evaluation, they may not see it as central to their thinking about evaluation, and they still use goals as the most common source of dependent variables.

Goal-free evaluation is also used by default in situations where program goals have not been previously stated or the goals are not known. The case of the anonymous philanthropist who donates without direction or stipulation serves as an example of GFE by default. For instance, consider the university that receives money from an anonymous donor who gives to a university's endowment: The typical assumption is that the donor supports the existing goals of the university, but this is clearly an assumption. It is possible that the donor wants to improve the reputation of the school, increase aid and access to minority students, enhance the aesthetics of facilities, or to stroke his or her own ego. The point is that if the donor chooses not to elaborate on the intentions, no one can speak definitively on the "true" goals. A famous philanthropic endeavor illustrates this situation well. In 2005 in Kalamazoo, Mich., population 74,000, anonymous donors pledged a huge undisclosed sum that guaranteed up to 100 percent of tuition at any of the

state's colleges or universities for graduates of the city's two public high schools (Kalamazoo Gazette, 2012).

The only stipulations were that students must have lived within the school district, attended public high school there for four years, and graduated to earn the minimum 65 percent benefit, whereas a full scholarship would be provided to students who attended the district's schools since kindergarten. Of course most community members have labeled what came to be known as the Kalamazoo Promise as an education initiative; almost immediately after its onset, however, others debated whether the true motive was economic revitalization or called it a social experiment (Fishman, 2012; Miller-Adams, 2009). The larger point concerning GFE is that the donors refused to specify their goals or objectives and consequently any claims about their goals are pure speculation. The subsequent studies and evaluations of the Kalamazoo Promise, therefore, are by default goal-free.

OUTCOMES OF CURRICULUM EVALUATION

The following are the evaluation outcomes:

Evaluation is the process of determining the values of something or the extent to which goals are being achieved; the out of outcomes of evaluation,

- Provides process information that are collected through assessments;
- provides reasoning process based on influence;
- provides judgment we make about the assessment of students' learning
- provides information of teaching-learning procedures
- provides direction to the administrator and policy
- provides direction to the teaching executors for orientation of the next instruction activities
- provides guidance to the agency for their further assessment of schools' functioning in the light of national development

Outcome of evaluations measure programme results or outcomes. These can be both short and long-term outcomes. A short-term outcome may be the use of standardized protocols and procedures by practitioners in a health facility. A long-term outcome may be the sector and system-wide integration of those policies. Evaluation measures the difference between what happened with the programme and what would have happened without it. To measure evaluation, an evaluation is to be typically conducted at the start and again at the end of a programme with appropriate measuring strategies in terms of learner's achievement. Curriculum evaluation is an important issue in the curriculum reform. At present, curriculum evaluation in our country mainly includes the following aspects:

- the demand evaluation before curriculum reform;
- the pre-evaluation and revised evaluation on curriculum standards;
- the profound evaluation on teaching materials and the evaluation on curriculum implementation

Through examining and reflecting on the above evaluation work, we found that there exist some problems, such as the over general understanding of the concept of curriculum evaluation, lack of systematic curriculum evaluation organization, absence of the local-based and school-based evaluation and over stress on administrative evaluation. In order to solve these problems and improve the quality of evaluation, we should reinforce the theoretical research of curriculum evaluation, strengthen the local-based especially school-based evaluation, establish effective curriculum standards and rational curriculum evaluation system, and also reinforce the dialogue and negotiation in the process of evaluation.

CRITICAL ANALYSIS OF TEXT BOOKS

The purpose for writing a critique is to evaluate somebody's work (a book, an essay, a movie, a painting...) in order to increase the reader's understanding of it. A critical analysis is subjective writing because it expresses the writer's opinion or evaluation of a text.

Text Book Analysis

Textbook analysis is the systematic analysis of the text materials including the structure, the focus and special learning assists. Teachers may assume the text is sacred and follow it without through or write it off as useless. Either approach is a disservice to students. Many textbook publishers and writers have developed texts with useful elements, if we are willing to figure out what they are.

Important

Textbook analysis is the systematic analysis of the text materials including the structure, the focus, and special learning assists. ... With help from the teacher, the text materials can begin to make more sense. If structure is explained students can get a better idea of where they are going in the course.

Study the table of contents to see the content scope and sequence. Have students look at this organization with the idea of figuring out patterns. Comparative learning groups can be effective in comparing observations. Organizing may be simply chronology.

Steps

1. Read the work slowly and pay close attention to detail. ...
2. Take notes as you read. ...
3. Study the context in which the author wrote the book. ...
4. Establish the essential plot points of the story. ...
5. Determine the setting of the book and how it contributes to the story. ...
6. Examine the actions, motivations, and beliefs of the characters.

Children's literature

Giving children access to all varieties of literature is extremely important for their success. Educators, parents, and community members should help students develop a love and passion for reading. Not only is reading literature important in developing cognitive skills to be able to succeed in a school or work setting, but it is valuable for other reasons as well. Children's literature is important because it provides students with opportunities to respond to literature; it gives students appreciation about their own cultural heritage as well as those of others; it helps students develop emotional

intelligence and creativity; it nurtures growth and development of the student's personality and social skills; and it transmits important literature and themes from one generation to the next.

The first value, children's literature provides students with the opportunity to respond to literature and develop their own opinions about the topic. This strengthens the cognitive developmental domain as it encourages deeper thought about literature. Students can learn to evaluate and analyze literature, as well as summarize and hypothesize about the topic.

Second, children's literature provides an avenue for students to learn about their own cultural heritage and the cultures of other people. It is crucial for children to learn these values because, "developing positive attitudes toward our own culture and the cultures of others is necessary for both social and personal development

Third, children's literature helps students develop emotional intelligence. Stories have the power to promote emotional and moral development. Children's literature "contains numerous moments of crisis, when characters make moral decisions and contemplate the reasons for their decisions,". Children's literature also encourages creativity

Children's literature is of value because it fosters personality and social development. Children are very impressionable during the formative years, and children's literature can help them develop into caring, intelligent, and friendly people. Literature encourages students to be considerate and friendly people, and these traits may be consistent with developing students into quality citizens.

Children's literature is extremely valuable in both the school setting and at home. Teachers and parents should both be able to differentiate between quality and mediocre literature, in order to give students access to the best books to encourage these important values of literature and considering developmental domains. Children's literature is

valuable in providing an opportunity to respond to literature, as well as cultural knowledge, emotional intelligence and creativity, social and personality development, and literature history to students across generations. Exposing children to quality literature can contribute to the creation of responsible, successful, and caring individuals.

Teachers Handbooks

With the focus on making students future-ready, it has been felt that in addition to being aware of the expectations from the teachers by the Board, our teachers must also be equipped with the information required by them regarding their learners and related to their career improvement and advancement. We believe that a well-informed teacher can do wonders in a classroom.

The present Handbook for Teachers is a source of information to teachers for the procedures, policies, roles, responsibilities, awards and resources related to their professional life. Beginning from basic information about appointment and qualification, the Handbook also contains a range of information, such as, teacher self-evaluation framework, details about the board examinations, subjects offered, use of technology, disaster management procedures to be followed, awards that teacher may apply for, and several other important and much-needed information about CBSE policies in the matters involving teachers. It is expected that the handbook will answer most queries pertaining to the professional lives of teachers with regard to their association with the CBSE.

Unit – 5 . Issues in Curriculum Development

Introduction

Twenty-first century classrooms challenge traditional, teacher-centered curriculum to meet the increasingly diverse needs of students and make the required increases in achievement gains. School violence, diverse student needs and populations, educational renewal, and technological advances place demands on teachers in areas for which they were formally held accountable. With teacher educators, problems occur when teaching styles conflict with students' learning styles, often resulting in limited learning or no learning.

Altan and Trombly (2001) offer learner-centeredness as a model for countering classroom challenges because of its viability for meeting diverse needs. Learner-centered classrooms place students at the center of classroom organization and respect their learning needs, strategies, and styles. In learner-centered classrooms, students can be observed working individually or in pairs and small groups on distinct tasks and projects. The transition from teaching the entire group to meeting individual learner needs involves extensive planning and task-specific classroom management.

Teacher-centered vs. Learner-centered paradigms

Teacher Centered	Learner Centered Paradigm Learner
Knowledge is transmitted from professor to students	Students construct knowledge through gathering and synthesizing information and integrating it with the general skills of inquiry, communication, critical thinking, problem solving and so on
Students passively receive information	Students are actively involved
Emphasis is on acquisition of knowledge outside the context in which it will be used	Emphasis is on using and communicating knowledge effectively to address enduring and emerging issues and problems in real-life contexts
Professor's role is to be primary information giver and primary evaluator	Professor's role is to coach and facilitate Professor and students evaluate learning together
Teaching and assessing are separate	**Teaching and assessing are intertwined**
Assessment is used to monitor learning	**Assessment is used to promote and diagnose learning**
Emphasis is on right answers	Emphasis is on generating better questions and learning from errors
Desired learning is assessed indirectly through the use of objectively scored tests	**Desired learning is assessed directly through papers, projects, performances, portfolios, and the like**
Focus is on a single discipline	Approach is compatible with interdisciplinary investigation
Culture is competitive and individualistic	Culture is cooperative, collaborative, and supportive
Only students are viewed as learners	Professor and students learn together

TEACHING-CENTERED versus LEARNING-CENTERED instruction

Concept Teacher	Centered Learner	Centered
Teaching goals	Teaching goals	Students learn: o How to use the discipline o How to integrate disciplines to solve complex problems o An array of **core learning objectives**, such as communication and information literacy skills
Organization of the curriculum	Courses in catalog	Cohesive program with systematically created opportunities to synthesize, practice, and develop increasingly complex ideas, skills, and values
Course structure	• Faculty cover topics	**Students master learning objectives**
How students learn	Listening • Reading • Independent learning, often in competition for grades	Students construct knowledge by integrating new learning into what they already know • Learning is viewed as a cognitive and social act
Pedagogy	Based on delivery of information	Based on engagement of students
Course delivery	Lecture • Assignments and exams for summative purposes	Active learning • Assignments for formative purposes • Collaborative learning • Community service learning • Cooperative learning • Online, asynchronous, self-directed learning • Problem-based learning
Course grading	• Faculty as gatekeepers • Normal distribution expected	**Grades indicate mastery of learning objectives**
Faculty role	Sage on the stage	Designer of learning environments
Effective teaching	Teach (present information) well and those who can will learn	Engage students in their learning • Help all students master learning objectives • **Use classroom assessment to improve courses** • **Use program**

Student-centered learning

Student-centered learning, also known as learner-centered education, broadly encompasses methods of teaching that shift the focus of instruction from the teacher to the student. In original usage, student-centered learning aims to develop learner autonomy and independence by putting responsibility for the learning path in the hands of students. Student-centered instruction focuses on skills and practices that enable lifelong learning and independent problem-solving. Student-centered learning theory and practice are based on the constructivist learning theory that emphasizes the learner's critical role in constructing meaning from new information and prior experience.

Student-centered learning puts students' interests first, acknowledging student voice as central to the learning experience. In a student-centered learning space, students choose what they will learn, how they will learn, and how they will assess their own learning. This is in contrast to traditional education, also dubbed "teacher-centered learning", which situates the teacher as the primarily "active" role while students take a more "passive", receptive role. In a teacher-centered classroom, teachers choose what the students will learn, how the students will learn, and how the students will be assessed on their learning. In contrast, student-centered learning requires students to be active, responsible participants in their own learning and with their own pace of learning.

Usage of the term "student-centered learning" may also simply refer to educational mindsets or instructional methods that recognize individual differences in learners. In this sense, student-centered learning emphasizes each student's interests, abilities, and learning styles, placing the teacher as a facilitator of learning for individuals rather than for the class as a whole.

subject-centered

The subject-centered designer divides the curriculum into nice and neat subjects such as maths, science, history, literature, etc. This structuring of the disciplines is for practical reasons. It organizes the curriculum into basic concepts that are combined based on what they have in common. The essential knowledge of each area is gathered together to be taught to students.

Where the division of the curriculum stops depends on its purpose. Any expert in education knows that subjects overlap and the division is often arbitrary. In addition, every subject can be further divide into smaller parts. For example, English can be broken down into writing, reading, speech, grammar, and more.

A major criticism of this design is the lack of integration or horizontal articulation. The learning is compartmentalized and the students often never see the connections across subjects. In addition, the subject-centered design does not take into account the needs and interest of the students. The textbook is made by experts in the field who already know what knowledge and even experiences a child requires.

Despite this, the subject design is by far the most popular approach. It is easy to do and practical. It's appropriateness needs to be left to the educator who is trying to help their students.

The Subject-Centred Curriculum is the traditional model that was laid out by Ralph Tyler in 1949 in his seminal book, Basic Principles of Curriculum and Instruction. Also called the Knowledge-Centered Curriculum, it is the most widely-used method of instruction. The knowledge-centered curriculum is an academic curriculum where students are expected to acquire knowledge of their world as a foundation for

their adult life. This type of curriculum lays greater emphasis on the subjects themselves rather tha the children. Students are expected to gain mastery of subject matters from academic disciplines that hav been predetermined by a panel of experts. These are prescribed for the students without much regard to their actual interest or point of view.

The curriculum is organized around content units and the sequence of what is taught follows the logic of the subject matter. Knowledge and skills are taught sequentially over time and students have to remember these for the purpose of examination or an interview for a white-collar job. The teacher in a subject-based curriculum is seen as a scholar who will be using a variety of teaching strategies to share their knowledge. A report by the Partnership for 21st Century Skills emphasizes on the necessity of teacher-led instruction to help students gain knowledge and be able to build upon it in an organized manner. As regards the environment in which the subject-based curriculum takes place, it is the traditional school classroom where discipline is maintained and students are often expected to remain seated at their desks. There is a clear academic focus and stress is laid only on intellectual development.

This type of curriculum ignores altogether the personal and social development of the child Assessment within a subject-centred curriculum takes the form of formal examinations and standards-based assessment. With these, teachers and students are able to evaluate the progress made. In addition, program administrators can use the results of traditional tests to justify their programs' achievements. In a 2004 study on core knowledge curriculum and school performance, Wedman & Waigandt found a strong correlation between students enrolled in the Core Knowledge program and high test scores in all subjects regardless of ethnic or economic profiles. The longer the students were enrolled in the program the more they outperformed their peers enrolled in non- Core Knowledge schools.

In recent decades, student centered pedagogy has provided serious challenges to traditional —lecture -and-test□ modes of education in colleges anduniversities. Advocates of student-centered pedagogy generally proceed from theconstructivist position that maintains that learners construct theirunderstandings through their actions and experiences on the world. Student-centered thinking has spawned a burgeoning interest in the use of a variety of different active learning methods in and out of the classroom. These includecollaborative learning, experiential learning, problem-based learning, and a varietyof otherpedagogical methods.However, the theory and practice of student centered pedagogy is not without its problems.

Problems and issues in curriculum development

"Problem"

• The word "problem" is connected with theword "solution". A problem is somethingnegative that needs to be solved. Some badthings that happen cannot be called "problems"because they are unsolvable.

• . A problem is something that has a clearanswer.

"Issue"

• "Issue" is associated withdifficult decisions and disagreements. A issueis something that causes debate and dividespeople.

Curriculum development

• Problems of planning an effective andintegrated curriculum are not simple.

• A good curriculum involves out of harddedicated and intelligent work conducted oncontinuous bases.

• A curriculum development is continuous work. It musthave philosophical psychological, social and Economic basis

.• The curriculum planners have to investigate carefullyand thoroughly the nature and qualification of thosefor which curriculum is to be planned.

• Fundamental principle of curriculum planning is"student must either be selected to fit the planned curriculum or curriculum must be planned to fit thelevel of the students enrolled

• Developing or revising a curriculum one isfaced a number of problems and issues. Thecurriculum is planned set of activities.• The process of curriculum is a web of moraland intellectual purposes and beliefs whichultimately define the political economic andsocial arrangements of any society..

• If the society is relatively stable, the plannercan answer of many crucial questionsunderlying the curriculum

• Its simple to shape the personality andcharacter of an individual.

• In highly dynamic societies curriculumproblems are more complex.

• Decisions about aims, goals objectives,selection of major areas of curriculum.

• Choosing learning experiences and evaluationprocedures are reached after input of various groups.

• The people concerned in curriculum planninggathering without conflicting points onfoundations. They may be able to work faster

.• If personals involved have no agreement onthese. This would create confusions.• Societal and ideological problems facingcurriculum have broadened the cultural andphilosophical dilemma.• These may have indirect but powerful relevancewith curriculum.

Ideological problemsfaced in curriculum development

• Authority• Poverty• In-equality• Indoctrination• Ill health• Suppression of inquiry and expression• Regionalism• Provincialism• Nationalism

Societal and ideological problemsfaced in curriculum development

• Dissolution of family• Ecological imbalance• Prejudices• Alienation• Threat• Fear• Control• Coercio War and greed

Institutional and Instructionalproblem

s• Apathy• Discipline• Individual differences• Science and high technology• Basic standards• Jobs• Instructional packages• Teacher effectiveness• Life skills• Drug abuse Education

Societal problems

• Death Education• Family life• Sex Education• Consumers Education• Accountability• Global Education• Mind and body study• Feminist studies.

Economic Problems

• Change in curriculum, needs financial support

.• New teaching materials are required

.• Teachers are needed to be provided with in-services training and equipped with newteaching materials textbooks are to be revisedto fulfill the changing needs of the society.

• Supportive personal are required to assist theteachers for effective implementation of newcurriculum designs.

Political Interference

• It would be tempting, to argue that educationshould be taken out of politics. An educationalwill expect political parties to clarify theirgeneral educational aims and policies, whichconcern broad social issues.• Every person coming into power brings withhim his vested interests and few educationalplans for the nation, in such atmosphereeducationist is likely to suffer from frustration

Lack of Teaching Material

• Many of the educational programmers are fail due to lack of teaching materials. Thesemester system was introduced in theinstitution of higher education.• It faced many problems due to lack oftextbooks and other teaching material.Though teacher too, takes a little interest butmajor factor for its failure is shortage ofinstructional materials.

Lack of In-services Training•

When new curriculum was design are broughtinto practice the teacher are not properlyintroduced to new learning actives and teachingstrategies.

• If teacher are to be mobilized in support ofcurriculum change, both initial and in-serviceteacher education must convince them for theircrucial role in promoting innovation.

• It provide a place where teacher could findsolutions to practice they have encountered inthe classroom.**Teacher Reluctant to Accept Change**

• It is universal phenomena that teacher areconsidered to be conservative.

• Coercio

• They have reasons for beings unwilling to changetheir approaches, not least because they have aninvestment in knowledge and skills, which lend tobe devalued by the passage of time

• They face the natural human temptation to resistany change which may render their stock in tradeobstacle. Secondary always opposed newcurriculum as they are supposed to pay moreattention to new concepts and ideas

Make social sensitivity part of curriculum'

With more reports of crimes against women, a group of schools from across the country are preparing a draft proposal to include 'Education on Social Sensitivity' in the school curriculum from kindergarten to Class 12. The schools will submit the proposal to the human resources and development (HRD) ministry, various state governments and education boards across the country.

The new subject will teach students to be sensitive towards and respect women, senior citizens, weaker sections of society and the environment. The draft will contain the best practices to teach social sensitivity to students through various activities incorporated in the school curriculum, and will recommend making the subject mandatory for all students.

"Generally, such subjects are introduced only in secondary section, but a lot of students drop out after primary school, and so they never get the chance to learn about it,". "Toddlers can be taught compassion through activities that encourage them to look after a plant or a pet animal. Older students can be asked to adopt a neighborhood or a road, giving them the responsibility to keep it clean,

CENTRALIZED AND DECENTRALIZED CURRICULUM

There are some issues related to curriculum development, among of them are aboutthe centralized and decentralized curriculum. This issue is often out of the hands of individuals involved in course development but has impact on all aspects of curriculum development. In Centralization and Decentralization in Education: National Policies and Practices (UNESCO, 2005), it is explained that in theprinciple, centralization and decentralization apply to all essential educationsector functions including planning and plan implementation monitoring,budget and financial management, personnelmanagement, academicmanagement, and provision o f infrastructure including procurement.

Planning and Plan Implementation and monitoring in all countries, central government retains the Function of national policy setting and in most countries for national planning, including long-term andmedium-term planning. Annual action plans sometimes referred to as annualplanning and linked to annual budgeting which is unde rtaken at sub national level.

In some countries, strategic planning functions are also the responsibility of regional or provincial entities. F education levels considered strategic, such assecondary education in many countries, school mapping rema a centralizedfunction while responsibilities have been devolved to lower tiers of government for primary education.

As decentralization proceeds, increasinglyinformation come from certain monitoring and evaluation systems grow ineducation sectors all over the world sometimes reversing some of the potentialbenefits of decentralization through increased bureaucratization and control.

Nowadays, two types of organizational structure can be seen, which are centralized and decentralized.

Centralization of authority means the power of planning and decision making are exclusively in the hands of top management while in case of**Decentralization**, the powers for the same has been disseminated by the top management to middle or low level management. There is a never ending debate between these two terms to prove which one is better

BASIS FOR COMPARISON	CENTRALIZATION	DECENTRALIZATION
Meaning	The retention of powers and authority with respect to planning and decisions, with the top management, is known as Centralization.	The dissemination of authority, responsibility and accountability to the various management levels, is known as Decentralization.
Communication Flow	Vertical	Open and Free
Decision Making	Slow	Comparatively faster
Advantage	Proper coordination and Leadership	Sharing of burden and responsibility
Power of decision making	Lies with the top management.	Multiple persons have the power of decision making.
Reasons	Inadequate control over the	Considerable control over the

BASIS FOR COMPARISON	CENTRALIZATION	DECENTRALIZATION
	organization	organization
Best suited for	Small sized organization	Large sized organization

The following are the major differences between centralization and decentralization:

1	The unification of powers and authorities, in the hands of high level management is known as Centralizatio	Decentralization means dispersal of powers and authorities by the top level to the functional level management.
2	Centralization is best for a small sized organization,	but large sized organization should practice decentralization.
3	In centralization formal communication flow is here.	Conversely, in decentralization, communication stretches in all directions.
4	In centralization due to concentration of powers in the hands of a single person, the decision takes time.	On the other hand, decentralization proves better in terms of decision making as the decisions are taken much closer to the actions.
5	There is full leadership and coordination in Centralization	Decentralization, shares the burden of the top level managers.
6	The reason for centralization is inadequate control over the organization	but the reason for decentralization is good and effective control over the same.

Competency of teachers

Five Competencies for Culturally Competent Teaching and Learning

Today's classrooms require that instructors possess competencies for teaching all students. Robust instructional strategies and culturally sensitive curricula are critical, but more important is an instructor who is sensitive and responsive to the unique differences of each student. Recognizing the need to

strengthen specific competencies to reach and teach all students requires an understanding of new and a willingness to view instruction through varied cultural lenses.

1. Culturally competent teaching and learning facilitates critical reflection. A critical analysis of one's own cultural assumptions is foundational to culturally-responsive teaching and learning. Critical reflection on tightly held cultural assumptions is necessary to dislodge misconceptions and stereotypes. Culturally-responsive teaching engages students in self-awareness activities that lead to reflection on cultural assumptions. For example, in situations where beliefs about learning vary diametrically, there may be serious misunderstandings. When one student believes his learning is unrelated to timely arrival to class and another student views punctuality as a sign of respect, or when one student asks many questions and another quietly wrestles with issues in the content, each may struggle with respect or acceptance of the others. While all may be learning, each may view the others as lazy, disruptive, or disrespectful. Diverse instructional groupings allow students to learn about individual differences and to reflect on their own assumptions and beliefs.

2. Culturally competent teaching and learning demands respect for others. Every student possesses a unique cultural background. Experiences based on various traditions, norms, and values inform ways of knowing and learning. Learning communities with many ways of knowing and learning benefit everyone. When there is little diversity, the overwhelming presence of "whiteness" may be intimidating to students of color and English Language Learners (ELLS) and may serve to silence their voices. Culturally responsive methods such as inter-cultural communication stimulate respect for the needs of all learners and allow every voice to be heard.

3. Culturally competent teaching and learning involves accommodating individual learners. Respect for the learner is a critical component of effective teaching. In addition to pedagogical and subject matter knowledge, competent instructors relate well to their students and possess dispositions such as compassion, fairness, integrity and respect for diversity. Teaching that is respectful and learner focused will naturally involve individual accommodations. Good teachers not only learn from, but learn about their students. Learning about the cultures and languages of individual students provides a foundation for implementing effective accommodations that facilitate learning. Learning about students involves listening to them, interacting with them, and modeling for them. Effective accommodations for diverse students may include extra time on exams to accomm odate the additional load on mental processing, exams in another room where students are able to write, read aloud, then revise their answers to test questions, or time to verbally elaborate on their written responses with the instructor.

4. Culturally competent teaching and learning requires the use of intercultural communication skills.Culturally competent instructors are willing to learn from their students; they recognize the potential

of intercultural communication as a means for enhancing the learning of the entire learning community. Effective communication with others who are linguistically and culturally different includes the use of techniques like active listening, elaboration, paraphrasing, and restatement. Active listening is a process where both the sender and receiver are fully engaged, the listener is focused and attentive, and distractions are minimized. Active listening strategies are especially important when participants speak different languages. Intercultural communication strategies such as active listening inform learning and facilitate critical reflection.

5. Culturally competent teaching and learning requires focused activities and intentionally structured environments. Perspective-taking behavior requires an understanding of norms, values, and traditions that have informed the other's worldview and learning behaviors. Ranking the value of ideas such as tradition, religion, independence, education, work, health, respect, honesty, food, etc. and a review of personal rankings with other class members may lead to meaningful conversations. Such activities may encourage students to engage in critical reflection on deeply held assumptions related to values and beliefs. Intentional groupings of students with others from different racial groups have been shown to have a positive impact on students—especially white students

Diversity Competencies for Teacher Education Candidate: Teacher Education Candidates are required to demonstrate diversity competencies that demonstrate awareness, understanding, and appreciation for the differences among groups of people and individuals based on ethnicity, race, socioeconomic status, gender, exceptionalities, language, religion, sexual orientation and geographical area. These basic competencies must be successfully demonstrated within a series of required professional education, elementary and secondary courses previous to student teaching. In addition, candidates are also required to demonstrate pedagogical skills that support diverse student learners in P-12 schools. These skills are demonstrated on evaluations in field experience courses and ultimately during student teaching. Once awareness, understanding, knowledge and skills are demonstrated, the advisor or designee will verify that the competencies have been met. Circle all courses the student has taken.

The Problem of Curriculum Load

1. Preamble

A Committee was concerned with one major flaw of our system of education. This flaw can be identified briefly by saying that "a lot is taught, but little is learnt or understood". The problem manifests itself in a variety of ways. The most common and striking manifestation is the size of the school bag that children can be seen carrying from home to school and back to home everyday.

A survey conducted in Delhi revealed that the weight of school bag, on an average, in primary classes in public schools is more than 4 kg while it is around 1 kg in MCD schools. Nevertheless the load we want to discuss is not only the physical load but the load of learning which is there for all children irrespective of the category or type of schools where they study. The situation has become worse over these yeas, with even pre-school children carrying a bag of books and notebooks. And the sight is not confined to metropolitan cities alone it can be seen in small towns and the bigger villages too.

The weight of the school bag represents one dimension of the problem; another dimension can be seen in the child's daily routine. Right from early childhood, many children especially those belonging to middle classes, are made to slog through home work, tuitions and coaching classes of different kinds. Leisure has become a highly scarce commodity in the child's, especially the urban child's life. The child's innate nature and capacities have no opportunity to find expression in a daily routine which permits no time to play, to enjoy simple pleasures, and to explore the world.

2. Joyless Learning

It is hard to reconcile the rigorous 'academic' regime that is imposed on children from an early age with the widespread complaint made about the declining norms and performance of the formal system of education. Teachers routinely complain that they do not have enough time to explain anything in detail, or to organise activities in the classroom. 'Covering' the syllabus seems to have become an end in itself, unrelated to the philosophical and social aims of education. The manner in which the syllabus is 'covered' in the average classroom is by means of reading the prescribed textbook aloud, with occasional noting of salient points on the blackboard.

Opportunities for children to carry out experiments,excursions, or any kind of observations are scarce even in the best of schools. In the average schools especially the school located in a rural area, even routine teaching of the kind described above does not take place in many cases. In several states, school teachers encourage children to attend after-school tuition given for a fee while regular classroom teaching has become a tenuous ritual.

One message of this situation is that both the teacher and the child have lost the sense of joy in being involved in an educational process. Teaching and learning have both become a chore for a great number-of teachers and children. Barring those studying in reputed or exceptional institutions, the majority of our school-going children are made to view learning at school as a boring, even unpleasant and bitter experience. They are daily socialised to look upon education as mainly a process of preparing for examinations. No other motivation seems to have any legitimacy.

The contribution that teachers make towards this kind of socialisation is especially worrisome. Trained teachers are expected to be aware of the wider aims of education; indeed, aims like development of the "child's total personality" are the shibboleths of teacher training institutions everywhere in the country. It appears that teachers feel they can do little to pursue such lofty aims in any realistic sense under the harsh circumstances created by factors like excessively large classes, a heavy syllabus, difficult textbooks, and so on. Moreover, majority of them neither know nor have the necessary skills to realise the goals of education. The recommended pupil- teacher ratio of forty to one is now more an exception than a norm, and in many parts of the country it is customary to have sixty to eighty students in one class. The Committee learnt that in many states senior secondary classes often have one hundred or more students, many of them spilling into the corridor. In the national capital, many 'model' secondary schools, Central Schools, and several elite public' schools have classes, including primary classes, with more than sixty students.

This kind of class-size understandably generates a feeling of helplessness among teachers, but why must teachers feel helpless in the face of curriculum-related problems such as heavy syllabi, poorly produced textbooks, etc.? Why don't they act in more vocal ways and involve themselves in curriculum reform? Apart from the fact that there are very few forums encouraging curriculum inquiry and reform in any systematic manner, it seems to be an entrenched attitude among teachers to regard all decisions about curriculum and textbooks as the responsibility of 'authorities'. The fact is that while the teachers' involvement in the preparation of syllabi and textbooks is verbalised as a matter of principle, in practice it takes the shape of token involvement of a handful of teachers. Most teachers havereason.

Therefore, to think that they have little to say about the changes made from time to time in syllabi and textbooks. Even in such extreme cases where a textbook has a factual mistake, no complaints are made by teachers asking for correction of error. There is no established procedure or official forum to mobilise teacher vigilance and participation in curriculum improvement. On the contrary, there are cases where an individual teacher who complained about an error in a State-published textbook, was taken to task. Even if such cases can be described as rare or exceptionally unfortunate, they explain why the majority of teachers intuitively feel that it is not their business to critically examine the syllabus and texts they teach.

3. Examination System

Much has been written by various official committees on the ills of our examination system. The major, well-understood defect of the examination system is that it focuses on children's ability to

reproduce information to the exclusion of the ability to apply concepts and information on unfamiliar new problems, or simply to think.

The public examinations taken after Classes X and XII have assumed the importance of major events which have a set character or culture of their own. The awe they generate, the responses they trigger, and the kind of preparation they demand have all got so entrenched into the social lore that minor improvements in the style of question papers do not make difference to the dominant influence that the examination system has on the processes of learning and teaching. The influence is so strong that schools start holding a formal written examination several years prior to Class X indeed, in the primary classes in many parts of the country, And children receive the message almost as soon as they start attending school that the only thing which matters here is one's performance in the examination.

Both the teacher and the parents constantly reinforce the fear of examination and the need to prepare for it in the only manner that seems practical, namely, by memorising a whole lot of information from the textbooks and guidebooks. Educated parents, who have themselves gone through examinations, and the uneducated parents, whose knowledge of the examination system is based on social lore, share the belief that what really matters in education is the score one gets in the final examination. This belief is undoubtedly rooted in social or market reality. Percentage of marks obtained in the high school, higher secondary, or BA/B.Sc examinations is what ultimately matters in determining a student's chance of being called for an interview for admission to a university or for employment. Since the examination store is what a candidate carries with him or her as the key authoritative record of school or college performance, higher level institutions or employing agenciesunderstandable rely on it. It is a process in which no beginning or end can be meaningfully established. Changing the system of examination in a structural or even in a merely procedural sense does not require that a source outcome or cause-effect relationship be established; yet, the examination system goes on, apparently with the help of energies or rationales located in the system of education itself.

4. Textbook as the 'Truth'

The pervasive effects of the examination system can be seen in the style and content of textbooks and not just guidebooks which are specifically manufactured to help children pass an examination. If 'facts' or 'information' constitute the main burden of an examination, the same is true of textbooks. Barring exceptions, our textbooks appear to have been written primarily to convey information or 'facts', rather than to make children think and explore, Over the years some attempts have been made to incorporate a certain amount of reflective writing in textbooks. Such writing is so exceptional that its examples can be spotted and named without difficulty. 'How leaves are designed' in a Class VIII textbook is one such piece

of writing. It stands out from among the thousands of pages of textbooks in different subjects that our teachers and children have to go through painstakingly so that they can retain the information recorded in those pages in a highly compressed, usually abstruse manner. The more common style used in the textbooks is exemplified by passages of the following kind:

The term pH is defined as the negative logarithm to the base 10 of the hydrogen ion concentration expressed in gram ions per litre or moles per litre. (Class X)Fatty acids are slowly hydrolysed during digestion in the small intestine to form glycero and fatty acids through the enzyme action of lipase which is secreted by the pancreas, (Class X)

We find that while dividing a decimal by a multiple of 10,000 or 1,000, we first move the decimal point to the left as many places as there are zeros in the number and then divide the resulting decimal by the second factor of the divisor. (Class V)

The problem of readability in textbooks becomes grim in the context of a system which often leaves the child with no resource other than the prescribed textbook. The extent to which the child can rely on a teacher to elucidate tersely written text material is dependent on the quality of teachers, their training, and their accountability. From what impression the Committee could form about these aspects of the system, it seems valid to say that the child is very often helpless in the face of a style of teaching that is far from being interactive, let alone the absence or irregular presence of teachers. Under the circumstances that are widely prevalent in our country, a child is more likely than not to mug up the definition of 'pH'quoted above without grasping it. And mugging does get the child through the examination!

Textbooks and guidebooks form a tight nexus. In some parts of the country children are compelled to buy the guidebook (or 'key') along with the textbook. The economic and business aspects of this pairing apart, the academic function of the textbook has become quite dubious indeed. It is not perceived as one of the resources for learning about a subject, but as the only authoritative resource. This kind of sanctity distorts what useful purpose the textbook could serve Teachers see it as a body of 'truths' which children must learn by heart. This perception and urge to 'cover' the chapters of the prescribed textbook. turn all knowledge into a load to be borne by the child's memory.

The distance between the child's everyday life and the content of the textbook further accentuates the transformation of knowledge into a load. We are not talking here about advanced science or mathematics, but about elementary science, social studies, language and arithmetic. Textbooks treat these subjects in a manner that leads to alienation of knowledge from the child's world. This tragic phenomenon

takes different forms in different subjects in natural sciences, it takes the form of esotericisation of t subject, In the social sciences it becomes manifest in the coating of every inquiry in didacticism. suggestive of one preferred answer to every question. A common source of alienation of subject-matter from the children's perspective and life is the presentation of the life-style and world view of the urban well-off class. This life-style is characterized by access to concrete housing, modern kitchens, electrical gadgets, and so on. Of course there is nothing 'wrong' with this life-style; but the symbolisation of this life-style in every illustration and description that concerns a child's home life alienates millions of children who live in houses with traditional kitchens, or with no separate kitchens. Objects of daily use in common Indian homes, such as a broom or clay pitcher, are seldom seen in textbooks.

6. Observation Discouraged

A highly disturbing tendency we discovered in text writing, which exacerbates the problem we are discussing, is that of treating pictures as substitutes for experience. We found textbooks asking children to observe a picture of the object under study rather than asking children and the teacher to go out and observe the object itself in nature. For example, a Class V science text says : 'Look at the picture of a cactus plant. Observe the thick green structure..... Such an instruction preempts what motivation there may be in a teacher or child to bring an actual cactus plant to the class or to grow one.

The most painful example of this phenomenon brought to our attention was one in which a private publisher claimed that he had made the teacher's task 'easier' by turning an official 'Teacher's Guide', which suggests that the teacher should take children outside the school and identify some common birds, into a text where the pictures of all the common birds with with their names were provided for ready use. This case is especially painful as it shows how even a specific instruction given in a Teacher's Guide (Teacher's Guides are themselves rare; and in subjects in which they have been prepared in certain states, circulation has not been satisfactorily looked after) to encourage teachers to extend the lesson beyond the four walls of the classroom is co-opted within the dominant, traditional approach of teaching everything verbally from a textbook.

Over the recent years, some textbooks have adopted the vocabulary of observation and exploration or discovery as a necessary part of science teaching, but even here, virtually all commands for observation conclude with statements about what will be seen if an observation is actually made, thereby making it unnecessary for the teacher and children to find an object and actually observe it.

7. Structure of Syllabus

The absence of the child's viewpoint is also reflected in the organisation of syllabi in different subjects. We received a large number of complaints from parents as well as teachers that the content of syllabi lacks an overall organisation or coherence. Gaps in the syllabi between the lower and the Higher Secondary stages are as common as repetitions of the same content. These weaknesses of organisation apparently lead to memorisation and poor comprehension;both exacerbate the sense of curriculum load. Gaps between the secondary and the senior secondary stages seem to be glaring in the science syllabi. When students come to Class XI, they often find themselves without a clue even if theyhave done well in Class X. The level of abstraction attempted in the senior secondary stage science syllabi and textbooks, especially the physics textbooks, represents a jump in many topics. Apparently, those preparing the senior secondary syllabi and texts lacked adequate familiarity with the syllabi and text used in the earlier classes. In fact, they had no occasion to interact with the persons involved in the preparation of syllabi and textbooks for secondary classes (X and X).

Repetitions of concepts and information also leads to boredom and a sense of load. The need to repeat is rooted in the flawed structure of syllabi. In the primary classes, ideas and information are presented in a synoptic manner, making the text look deceptively simple. In the later classes, the same ideas are repeated, with some elaboration which does not prevent the child from viewing the ideas as trivialised by repetition. In the study of nutrition and health, for example, virtually the same ideas and information are given in the syllabi and texts of Classes III, IV, V, VII and X. Even the questions given at the end of the lessons in the texts are almost of the same kind. Apparently, the structure of syllabi is not carefully thought out. Indeed, our Committee was told by senior experts, who have been involved in syllabus and textbook preparation, that experts working on the syllabus of different levels (secondary and senior secondary) had no contact with each other. Reference to such procedural lapses, however, is not necessary to explain the tendency towards repetition that is embedded in the structure of the syllabus and has been reinforced by tradition.

8. Teaching Everything

The problem of densely packed syllabi like this one cuts across disciplines. In geography, it takes the form of all the continents being 'covered' under regional geography between Classes VI and VIII. In mathematics and the natural sciences, the packing of details makes any kind of learning with understanding, leave alone enjoyment, virtually impossible Numerous examples could be given from these disciplines to illustrate the problem. We are not citing this example as a specific case to be looked into, but as evidence of a deeply rooted tendency, rather all ideology, which impels syllabus and textbook planners to include 'everything' without ally regard for children's ability at different ages to learn and the time available in an average school for teaching a subject. Class XI and XII textbooks of science,

prepared recently with a view apparently to implement the National Education Policy, have been wi[illegible] criticized on these scores.

Children studying science subjects have been asked by their teachers to look for private tutors, the rationale being that there may not be enough time in the class to cover the syllabus, and some of the syllabus being beyond the capacities of the teacher. The terse content of these texts was apparently edited and reviewed in some haste; we were informed, due to constraints of time while sending the manuscripts for publication. Perhaps it can be argued that these textbooks are liked by the highly motivated and the brightest among the students and teachers. If this indeed in the case, it gives all the more reason to worry about the fate of the overwhelming majority of children studying in ordinary schools.

9. Starting Early

The general problems of curriculum conceptualisation that we have discussed in this part of our report can all be seen reflected in the emerging pre-school sector of the education system. Despite official stipulations that no textbooks be used at this stage, preschool teachers and parents in the urban centre are feeling 'compelled' to burden theyoung child with textbooks and the formal learning they represent. The sense of compulsion comes from a widespread feeling that unless academic training of a child starts early, he or she cannot cope with the fast-paced pedagogy and the competitive ethos of the later school years.

The pernicious grip of this false argument manifests itself in absurd, and of course deeply harmful, practices in pre-schools and primary schools, such as early emphasis on shapely drawing, writing, and memorising information. Intrinsic motivation and the child's natural abilities are being smothered at a scale so vast that it cannot be correctly estimated. Our national commitment to the development of human resource is daily challenged in our nurseries and primary schools.

10. Not Just an Urban Problem

The problem we have tried to identify in this part of the report is not confined to urban areas as some people think. It is deeply relevant to children's education in rural India although their, more basic problems - such as abysmally pure condition of schools, absenteeism among teachers etc. may cloud the problem curriculum load. In our view, the problem of high drop-out rate, which has rightly pre- occupied our policy-makers for a long time, has one of its origins in the curriculum scenario we have portrayed.

A curriculum policy that takes away the elements of joy and inquiry from learning obviously contributes to the rate at which children leave school in early years, undoubtedly under the force of economic and social circumstances. As we have indicated earlier, symbolic tilt towards an urban, middle

class way of life in text books can also be expected to make the rural Child's association with his or her experience at school thin and brittle. Quality of teachers and the equipment available to them also make an impact on the tenuous and fragile links that the first- generation learner in many parts of rural India tries to establish with the system of education.

Participants in Curriculum Planning

Teachers

Holistic planning requires substantive teacher involvement in curriculum development, at both the district-wide and building levels. For example, teachers in Shaker Heights analyze students' needs, conduct research, discuss parent input, write or revise courses of study, field test the curriculum, monitor student progress, and evaluate student outcomes.

Moreover, teacher representatives on the K-12 subject-area committees are responsible for informing their colleagues about the work of the committees on which they serve and for reporting their colleagues' reactions back to the committees. Staff development programs also help to keep faculty members apprised of curriculum activities and newly adopted resources.

Teachers who participate in planning are more likely to accept change and to put the new curriculum into practice. Also, as Haberman notes, more teacher participation in curriculum planning results in "improved teacher self-concept, their greater sense of responsibility and commitment to the school and the curriculum, and increased student motivation. By the very nature of their responsibilities, teachers must be an integral part of the planning process.

In fact, Tyler (1987) states that the teacher is the most significant factor in implementing school reform. Consequently, every effort must be made to ensure not only that teachers have a thorough understanding of curriculum theory and practice, but also that they possess the requisite skills for competently planning instruction and for making sound decisions about aligning the curriculum with students' wide ranging differences.

Unit teaching is an excellent way for the teacher to translate the curriculum into classroom practice and to accommodate students' individual differences. The teaching unit, with its broad array of objectives, content items, activities, materials, and evaluation devices organized around a topic, provides not only for student differences but for student-teacher planning and subject integration as well. A unit might include activities such as computer-based learning, cooperative learning, peer tutoring, and study projects.

McIntosh and Vaughn (1992) discuss how a unit resource notebook can serve as an organizational technique. The unit resource notebook, in the form of a large, three-ring binder, might hold such components as teaching ideas, visual aids, reading/study guides, and bulletin board sketches.

Community Members

Holistic planning is further characterized by the participation of lay citizens, who attend district-wide curriculum planning committee meetings and serve on school-based planning committees. Lay citizens are appropriately involved with school professionals in identifying, thinking about, and discussing curriculum program issues and problems. For instance, lay citizens could be involved in debating whether or not to implement a sex education program. If the program is ultimately adopted, the lay participants might then provide input concerning such matters as the sex education program's general purposes, priorities, and procedures. School professionals remain in charge of diagnosing students' learning difficulties and needs and making decisions about incorporating instructional objectives, content items, activities, materials, and evaluation devices into actual teaching-learning situations.

School Leaders

Holistic planning requires competent planning leadership along with full and meaningful teacher involvement. The school principal often has responsibility for both administrative and curriculum matters. Consequently, the principal's training must include not only courses and field work in administration but also a substantial concentration in curriculum theory and planning and a supervised curriculum field experience. Pajak and McAfee (1992) point out that principals, to be successful curriculum leaders, not only need to understand curriculum organization and the place of instructional activities, materials, and learning outcomes in the curriculum, but also must be able to formulate strategies, coordinate curriculum activities, and monitor the program.

The principal's curriculum concentration, by emphasizing the group process and providing knowledge of planning principles, strategies, materials, and assessment procedures, enhances his or her ability to effectively function as a planning leader. Ornstein and Hunkins (1988) suggest various guidelines regarding the principal's role in curriculum change, including the need for the principal to have good human relations skills as well as a thorough understanding of the staff, school system, and community.

ROLE OF TEACHERS' IN CURRICULUM DEVELOPMENT

Teacher Education provides a platform to student-teachers to acquire the required knowledge, skill and develop positive attitude, values and beliefs. This can be done with the help of the provided curriculum. And the quality of teacher produced in any institution invariably depends on the curriculum

offered to them during their training period. After reviewing various researches on the curriculum and significant role of teachers' in framing the curriculum the process of curriculum development was decentralized. The process of curriculum framing and preparation of textbooks be decentralized so as to increase teachers' involvement in these tasks. Decentralization should mean greater autonomy within the state/district.

As curriculum is the best mean of overall development of students. And teacher is mediator between curriculum and students. She/he knows various needs of students, educational institutions, industries, parents (stakeholders). The quality of teacher education is maintained by curriculum of Teacher Education. The curriculum development is dynamic process.

THE ROLE OF GOVERNMENT OF INDIA IN EDUCATION

The role of curriculum in national development

Education is a vital investment for human and economic development and is influenced by the environment within which it exists. Changes in technology, labour market patterns and general global environment, all require policy responses. Traditions, culture and faith all reflect upon the education system and at the same time are also affected by them. The element of continuity and change remains perpetual and it is up to the society to determine its pace and direction.

We are living in an inquiring and innovation-oriented society. The demand of twenty first century is novelty, creativity, and integration of knowledge at global level, research, critical and analytical thoughts. Rapidly social changes are creating uncertainty and complexity in the society. To prepare the children and youth to cope with the present situation needs to develop analytical and critical thinking, skill and attitude that would make them more flexible and innovative to deal with uncertainty and crises at national and global level.

The greatest need of the hour is to re design curriculum, textbooks, teaching methodology and children's literature, formal and non-formal educational systems. It has been demonstrated by researcher that active learning (questioning and investigate the nature of topic) develop creativity and stimulate for learning.

Teacher As Curriculum Maker

1. **The Teacher Framed by the Conduit Metaphor**

In an attempt to summarize and understand this metaphor I found some information on the Encyclopedia Britannica Online that supplemented that of the chapter. The Conduit Metaphor refers to the

idea that knowledge is a "commodity that is external to learner", meaning that it is provided for them rather than something that they construct themselves. In practice it refers to the idea that the student is empty vessel waiting for the teacher to fill them with their infinite knowledge.

Success can be measured by the student's ability to regurgitate that knowledge with a high percentage of accuracy. It is the job of the student to memorize the information provided for them without consideration for their own context or experience. The teacher is expected to provide a scripted wealth of information through prescribed methods. These methods and content were provided for them through the curriculum.

This is what I believed teaching to be when I began my career. As I began teaching, I quickly became bored and unsatisfied with this method and deviated from it. In doing so, I abandoned the curriculum except for obtaining the grade appropriate "topics" that I could address with my class in a way that I thought they would find the most engaging. The chapter refers to this abandonment when it refers to a study of the Toronto secondary school biology curriculum conducted in 1978 in which it was found that

"Roughly two-thirds of the curriculum taught was outside the bounds of policy specified in the provincial guidelines document and was therefore technically illegal."

While it was assumed that teachers were and should be using prescribed curriculum and were acting in accordance to the "conduit metaphor", it was not happening. Teachers were instead being "curriculum makers"

2. "Teacher-Proof" Curriculum Within The Conduit: From Teaching Machines to Distance Education

I think that you would agree with me when I say that I am very glad that those machines did not become common place as they are the epitome of the teacher as conduit model!

This section of the chapter also discusses another method of computer assisted learning that they refer to as Computer Assisted Learning environments. In this case, computers are used to facilitate student learning but that the role of the educator in this model is unclear. They go on to introduce the Computer Mediated Communication System. This is described as

"Helping distance educator develop their own kinds of interactive classrooms: small and large, local and regional group configurations of learners are created by a telephone, computer conferencing and face-to-face meetings and workshops."

The authors write that this type of computer assisted learning is one in which the teacher must take on the role as curriculum maker as they must work collaboratively with the learner to create this space and what they will be learning within it

3. The Humanities Curriculum Project

The chapter goes on to say that just like Structural Innovation, some school had success, some did not. One of the key aspects talked about earlier in the chapter was that change only works if the teachers are involved in the decisions. In the case of the Humanities Curriculum Project, it was intended for the teacher to be central to the reform in the classroom but how that would look was shaped by the researcher and not by the teacher. As mentioned previously in the chapter, that would not work.

I know that in our application to become a Structural Innovation school, all of the teachers had full input however, I did hear of other schools where all decisions and ideas came solely from the administration. I believe that we will have a similar results in our school system as the Humanities Curriculum Project because of this reason. So, yes, in some cases it will not work. That does not mean that we give up trying. There are some success with change. I can speak to this from my experience in my Professional Learning Community and how we have structured our senior classroom. For a peak at what we do, visit our Wiki.

4. Teacher as Curriculum Maker

The authors of this chapter call attention to the need for educational reform. Through examples, they show that the reform will only truly be successful and sustained when the teachers are directly involved in the decisions that are made for change. How do we engage teachers in these decisions? The authors state that teachers must become curriculum makers (and in this, they do not mean only what will be learned but that curriculum should be a "course of life" encompassing all things related to teaching and learning) and that in order for teachers to become curriculum makers, researchers must listen to their stories.

Through this listening, a usable, realistic, engaging format for educational reform can be formulated. I agree with this idea wholly as I have seen and heard the difference that it is making in the success of Structural Innovation in the schools in my system. And while I can not speak for other schools and other teachers, in my school, where the needs, wants, and success stories of the teachers were considered in making our plans for innovation, we have seen many successes.

21st centuary

The students today are experiencing a world which changes more quickly than ever before. They live a faster and more connected life which not only provides them with numerous opportunities to learn but also expects a better performance from them compared to conventional educational methodologies

- What most of the educators believe is that the educational reforms must be done from the earliest stage like curriculum design.

- Abdul Kalam, an eminent scientist and Missile Man of India once shared his conversation with a great lady who came from Finland to share the practices that helped their country to be placed at the top position in Innovation Index 2007.
- When she was asked the question "How do you make your country the No. 1 nation in Innovation Index?", her reply was as follows.
- "Education, Education, Right type of Education and Women Education".
- Here, the term "Right type of Education" refers to creative education. According to Abdul Kalam, the first thing a nation needs to become innovative is creative education.
- **"Imagination leads to creativity, Creativity blossoms thinking, Thinking provides knowledge, Knowledge results innovation and Innovation makes the nation great." – Abdul Kalam.**
- Creative education is the most advanced methodology in which classrooms, teachers and syllabus are imaginative. Creativity in an education system either in primary or in secondary education can surely be achieved by a creative curriculum. Especially, the 21st century education system requires a creative curriculum in order to make students more innovative as it's surrounded by enough tech resources. Let's learn about how most of the educators expect 21st century's curriculum to look like.
- **21st century curriculum:**
- 21st century educational system has many educational technologies that make students more creative than ever before.
- **For Primary Education:**
- "In today's education, the biggest reform needed is in primary education. At the age of 15, the children are very creative and to make them more creative, we need a classroom as well as the syllabus to be creative besides having a creative educator."
- **For Higher Education:**
- In India, especially higher education organizations such as IITs, NITs and State Universities must follow the following aspects in their curriculum:

- Research and Enquiry
- Creativity and Innovation
- Use of technology
- Entrepreneurial leadership
- Moral leadership
- Research oriented Curriculum:

Studies show that most of the students in India who are interested in research prefer to go abroad. Not only India, but also many other countries which can't provide a better research environment will undergo brain drain. What Abdul Kalam has suggested to all such organizations that offer under graduate courses is to make a part of their curriculum research oriented.

- **"The higher the research, the higher the teaching capacity moves."**
- The time has come for us to include research in our curriculum. Instead of fighting against a huge syllabus, we must give priority to the research environment.
- **"The reform has to come from the evolution of new type of curriculum, teaching and classrooms".**
- **Curriculum that involves multi-departmental work:**
- What most of the organizations focus on is that they have a syllabus to be completed within a particular time period so that their students get good marks. 21st century education system tries not only to improve grades of a student but also to make him an independent learner. It should also help students to become multi-talentedto withstand the current competitive world. So, the 21st century curriculum should include multi departmental work. For example, if we take a 4 year under graduate course, a part of the time period such as 8-9 months should be given a room for multi departmental work. When a student from Mechanical Engineering departmentworks with Electrical and Computer Science students, he learns some basics to innovate something like an "Intelligent Line Sensor Robot". This multi departmental knowledge helps the student give better performance in his field.

- **Views of Educators about Creative Curriculum:**
- **Basic Approach:**
- An approach from **Dr. Justin Tarte** & **Gerald Aungst** regarding the curriculum:
- An educator should consider the following questions in order to design an effective curriculum: what to keep, what to subtract, what to add, what to subtract (again).
- **Curricular Goals:**
- The following are the curricular goals of 21st century education system:
- **Imagination:**
- Curriculum must give preference to imagination as I've already included the quote, "Imagination leads to Creativity".
- **Problem solving nature:**
- Curriculum must improve students' problem solving nature as it is a necessary skill every student should have.
- **Critical thinking:**

- Critical thinking is a process that leads to skills that can be learned, mastered and used. It's a tool by which one can come about reasoned conclusions based on a reasoned process. If the curriculum includes more practical works and projects, students' critical thinking can easily be improved.
- **Physical Exercises or Sports:**
- Studies show that physical exercises not only keep a student healthy and fit but also play a great role in improving one's brain functionality. There is no doubt that if curriculum gives importance to Physical education and sports besides education, students will automatically develop both of their co-curricular as well as extra-curricular skills.
- In addition to the above mentioned goals, 21st century curriculum has many other goals that we want to hear from you. Please share your views on how you want 21st century curriculum to be. The comment box awaits you.

CURRICULA DESIGNED TO MEET 21ST-CENTURY EXPECTATIONS

Students' personal experience with technology is typically broad and in many cases very deep. Moreover, their extensive use of technology continues throughout their college experience—that is, except fully integrated into the curriculum.

Implications

- Faculty's understanding of the teaching and learning power of technology needs to be increased.
- Increasing the use of technology will increase demands for technological tools to be effectively integrated into the curriculum to enhance student learning.
- Tools need to be developed to help faculty integrate technology into the curriculum.

21st-Century Expectations

Changes in the larger society over the last 100 years—various social movements, the advent of telecommunications, the movement from industrial-based to knowledge-based work, struggles over political boundaries, modern technology and science breakthroughs employed in both the most positive and most negative of circumstances—have in some form or another impacted the ways colleges and universities "do" higher education. Colleges and universities in the 21st century educate a much larger, more diverse population of students, foster scholarship countless new areas of inquiry, and offer opportunities in many new settings and formats, including online.

Yet many facets of higher education have remained relatively untouched by time, at times to the detriment of our functioning in this new era. To better meet individual and societal needs of the 21st century, numerous leaders—inside and outside higher education—recognized at the end of the 20th century that college and university missions and practices needed to be reinvigorated. Within such a

process, perhaps consensus could be reached about the new expectations we needed for students, for curricula, and given its infusion into society, for technology.

For Students

Since 2000, the Association of American Colleges and Universities (AAC&U) has engaged colleges and universities across the nation in such a process, through a multiyear, multilayered initiative called Greater Expectations. For the first two years of the initiative, AAC&U senior staff convened a national panel of experts who were charged with identifying the hallmarks of a 21st-century college graduate. With input from a consortium of leadership campuses engaged in innovative practices to realize high achievement levels for their students, the national panel recommended new emphasis be placed on educating students to be purposeful and self-directed in multiple ways—on becoming intentional learners. The report issued from their work, *Greater Expectations: A New Vision for Learning as a Nation Goes to College*, states:

> Becoming such an intentional learner means developing self-awareness about the reason for study, the learning process itself, and how education is used. Intentional learners are integrative thinkers who can see connections in seemingly disparate information and draw on a wide range of knowledge to make decisions. They adapt the skills learned in one situation to new problems encountered in another—in a classroom, the workplace, their communities, and their personal lives. As a result, intentional learners succeed even when instability is the only constant.[1]

In short, students are expected to draw on various knowledge bases, integrate them, conduct increasingly more sophisticated analyses as they progress through college, and use their integrated knowledge to solve complex problems.

For the Curriculum

Low-level technologies such as overhead projectors, televisions, and videocassette recorders have been used for some time to focus college students on specific subject matter. The use of technologies typically included text, equations, graphics, and pictures to enhance learning through models and content-rich stories. Early work in learning technology focused on combining what we knew about visual learning and low-end technologies to create multimedia tools to enhance student learning.

Technology an end unto itself instead of the powerful teaching and learning tool that it can be.

Implications

- Much of the learning technology innovation in higher education has been focused on K–12 teacher preparation and development. More focus needs to be placed on preparing existing faculty for the future Net Generation students who will populate the 21st-century classroom.
- To the extent that colleges and universities involve interested faculty and students in working together to develop tools that truly engage them both, the more fruitful their efforts are likely to be for the larger higher education community.

For Technology

Over the past 20 years, most colleges and universities have moved technology from being a one-time budget expenditure to being a hard budget line to support the purchase, maintenance, and, in many cases, use of technology on campus. Less attention has been given to how to help students achieve the desired learning outcomes through technology. While significant financial resources have been devoted to building the technical infrastructure at colleges and universities, much less has been devoted to ensuring that this investment is used to its maximum.

College and university faculty must effectively tap students' existing familiarity with technology to engage them in constructing an integrated knowledge base and developing habits of the mind that will enable them to become lifelong learners. Technology can then become a tool used in the service of learning rather than an end itself.

Implications

- Institutions need to establish greater expectations for maximizing their investment in technology by exploring and assessing the best use of technology for learning.
- Greater investments may be needed in faculty professional development in the effective use of technology for learning.
- Faculty's effort to infuse technology into the curriculum requires support in developing strategies and in resolving technical difficulties. This means more than the technical help desk. What is needed is assistance for using technology to achieve the teaching and learning outcomes we desire.

Technology and the Curriculum

What is the current role of technology in the college curriculum? To develop intentional learners, the curriculum must go beyond helping students gain knowledge for knowledge's sake to engaging

students in the construction of knowledge for the sake of addressing the challenges faced by a complex, global society.

According to the Greater Expectations National Panel, the curriculum and the cocurriculum should provide numerous paths by which students can achieve broad liberal education outcomes alongside specialized knowledge of one or more disciplines.

If students have achieved these outcomes, they will excel at

- communicating well in diverse settings and groups, using written, oral, and visual means;
- employing both quantitative and qualitative analysis to describe and solve problems; and
- working well in teams, including those of diverse composition, and building consensus.[6]

These outcomes can be achieved through strategies such as writing assignments (expository, creative, and personal writing); required and critiqued oral presentations; and problem-based learning.

Students need mastery in areas that include knowledge of human imagination and expression, global and cross-cultural communities, and modeling the natural world. This mastery can be obtained thorough

- undergraduate research;
- inquiry-based science labs;
- planned and supervised experiences in teamwork, both in class and in off-campus settings;
- interdisciplinary and integrated courses on creativity through the ages;
- drawing on students' diverse experiences to enrich classroom discussion;
- integrating study abroad into courses back on the home campus;
- teaching courses worldwide through videoconferencing; and
- student team-designed lab experiments to answer questions.[7]

Students can be expected to be responsible for active participation as citizens of a diverse democracy, understanding themselves and their multiple identities by engaging in

- service learning;
- debate on proposed solutions to current social problems; and
- personal writing that requires self-reflection on a wide variety of subjects and that situates the self in relation to others.[8]

Use of Technology

In what ways might technology enhance each of these innovations and help students achieve desired learning outcomes? At the most basic level, effectively using computer technology is itself a skill

that we want students to develop. Using computer applications such as Access and Excel makes managing and manipulating data much more efficient.

While it's clear that such applications have great utility in business administration courses such as accounting, these programs are often used for other purposes and in other subjects. These applications can be designed to sort a variety of types of information, such as to sort information obtained from qualitative interviews or to sort by predetermined criteria a number of funding possibilities for a service-learning project.

The mere act of setting up small text databases and linking them to equations for analysis gives students practice in managing knowledge, as well as allowing them to easily transfer text to charts and displaying information in a variety of ways. Knowing how to use all the functions of these and other programs such as PowerPoint enables learners to efficiently edit text and include graphics in the final products they submit to demonstrate their learning. These uses of technology can be applied to undergraduate research and can contribute to students making reasoned linkages among seemingly discreet pieces of information, therefore integrating knowledge for deeper learning.

Multiple Media

By using multimedia, faculty and students can demonstrate an enriched teaching and learning enterprise that goes well beyond more traditional "cubicle-based" computer use.

The use of multimedia enables students to demonstrate learning beyond a specific topic under study. The example above specifically focuses on comparisons of voluntary and involuntary immigration; however, working in teams and using multiple technological forms facilitates the introduction of other topics such as social justice, ethics, and economic systems more easily. Group work where students can match their talents and interests to specific technological tasks enables each student to pursue an aspect of the assignment that appeals to the way she or he learns best.

Add Flexibility

Because we know that different students learn best when they are challenged to learn in different ways, technology allows teachers to add flexibility to how they present new information and provide feedback to students. For example, both skills and content will be enhanced when students are asked to demonstrate their learning through multimedia presentations to the rest of the class. Virtual discussions allow instructors to help the class develop their analytical judgment.

The course assignment cited above can also help students explore the circumstances surrounding each immigrant group's departure from its homeland, the route or routes taken to arrive in the United States, where they arrived, and why. The assignment could take on a deeper dimension by using videoconferencing and e-mail to link teams to students living in the countries of origin of the groups being studied. Integrating real-time global experiences into the classroom can provide a new, first-person information source and engender debate about the validity of various sources of information used in conducting research. These technologies make it easier for courses to depart from chronological, linear formats.

Conclusion

Future careers will require higher levels of education than in the past. That education must enable individuals to discover what they need to know rather than just having static knowledge. Society will need college graduates with mental agility and adaptability.

If this is the goal of education, colleges and universities must reexamine how that goal is achieved. The Net Generation and the current capabilities of information technology make it possible to support learning activities that will enable graduates to be mentally agile and adaptable. However, beyond technical infrastructure, the use of technology in the service of learning is limited.

The *Greater Expectations* report calls for a focus on developing intentional learners; it also calls for developing intentional institutions. Colleges and universities are connecting silos of administrative work with relational databases so that, for example, financial aid structures can interface with human resources and accounting, ensuring students can work for the institution and maintain simultaneous student and staff categorizations. Eight years ago this was not easy, but today no one thinks it should be any other way.

Clearly, technology can facilitate the achievement of the operational goals of the institution. But achieving one of its most important goals—improving the learning of all students—through technology will require conversations at all levels—department, college, institution, and state. With calls for greater accountability for increased spending and for assessment of student learning, we can ask for no less than the effective and coherent integration of technology into an enriched curriculum that meets both student and societal expectations.

• Education throughout life is based on four pillars: learning to know, learning to do, learning to live together and learning to be.

• **Learning to know,** by combining a sufficiently broad general knowledge with the opportunity to work in depth on a small number of subjects. This also means learning to learn, so as to benefit from the opportunities education provides throughout life.

• **Learning to do,** in order to acquire not only an occupational skill but also, more broadly, the competence to deal with many situations and work in teams. It also means learning to do in the context of young peoples' various social and work experiences which may be informal, as a result of the local or national context, or formal, involving courses, alternating study and work.

• **Learning to live together,** by developing an understanding of other people and an appreciation of interdependence - carrying out joint projects and learning to manage conflicts -in a spirit of respect for the values of pluralism, mutual understanding and peace.

• **Learning to be,** so as better to develop one's personality and be able to act with ever greater autonomy judgement and personal responsibility. In that connection, education must not disregard any aspect of a person's potential: memory, reasoning, aesthetic sense, physical capacities and communication skills.

• Formal education systems tend to emphasize the acquisition of knowledge to the detriment of other types of learning; but it is vital now to conceive education in a more encompassing fashion. Such a vision should inform and guide future educational reforms and policy, in relation both to contents and to methods.

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