



Indira Gandhi National Open University
School of Education

MES-104

Planning and Management of Higher Education



Planning and Management of Curriculum

4

“शिक्षा मानव को बन्धनों से मुक्त करती है और आज के युग में तो यह लोकतंत्र की भावना का आधार भी है। जन्म तथा अन्य कारणों से उत्पन्न जाति एवं वर्गगत विषमताओं को दूर करते हुए मनुष्य को इन सबसे ऊपर उठाती है।”

— इन्दिरा गांधी



“Education is a liberating force, and in our age it is also a democratising force, cutting across the barriers of caste and class, smoothing out inequalities imposed by birth and other circumstances.”

—Indira Gandhi

Block

4

PLANNING AND MANAGEMENT OF CURRICULUM

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December, 2003 (Revised Edition)

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ISBN: 81-266-0970-2

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Further information on the Indira Gandhi National Open University courses may be obtained from the University's office at Maidan Garhi, New Delhi-110 068.

Printed and published on behalf of the Indira Gandhi National Open University, New Delhi, by the Director, School of Education.

Laser typeset by Nath Graphics, 1/21, Sarvapriya Vihar, New Delhi-110 016.

Printed at Young Printing Press, 2626, Gali No.7, Bihari Colony, Shahdara, Delhi-32

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Block 4 Planning and Management of Curriculum

Introduction to the Block

Any inadequacy in the educational system is, quite often, linked with the inadequacy of the curricular inputs provided in educational institutions. As a result, changing the curriculum has, invariably, become the instrumentality for initiating any substantive reform in the higher education sphere also. Taking the argument a step further, the teacher who is responsible for transacting the curriculum is made to face the butt end of the criticism aimed at all the weaknesses of the system. Is this criticism justified? Will curriculum changes really improve the system? Or, putting it more specifically, is the place of curriculum and the role of teacher in transacting the curriculum so crucial that they determine, to a great extent, the quality of the whole system of higher education? These are very fundamental issues which need to be thoroughly understood by every teacher in order to properly perceive one's own place and role in determining the nature of the educational processes which that go on in higher education institutions.

Specifically, we have to find answers to such questions as :

- How the curricula in different areas of study at the university level can be planned and implemented.
- Who should perform these tasks.
- What the role of a teacher is in performing these tasks.
- What the steps involved are, in the development of curriculum.
- How the curricular inputs can be transacted in an effective manner.
- What is the relationship between curricular inputs and instructional strategies that are being adopted by the teachers.
- How one can ascertain whether the curricular inputs are relevant to the instructional goals and who should find this out, and so on.

All the four units in this block attempt to find answers to these fundamental questions which concern every teacher. The first unit, i.e., **Unit 13** is concerned with the questions related to various processes involved in curriculum planning. In a way, these deal with broader policy issues relating to curriculum at higher education. **Unit 14** includes a discussion on specific steps and mechanisms involved in developing curriculum in different areas of study at the university level. It also deals with such questions as curriculum validation and revision focussing on the role of individual institutions and teachers in these processes. In **Unit 15**, we discuss different aspects of the curriculum transaction process that are directly related to teaching and to the teacher. It includes discussion on content organisation and sequencing for teaching, time allocation for different topics, interfacing of the different components of the course such as theory, practicals, field work, etc. And lastly, we have highlighted on certain important roles of a teacher as curriculum practitioner, etc. The last unit, i.e., **Unit 16** examines the meaning of curriculum evaluation, the relationship between curricular inputs, instructional strategies and evaluation procedures, and the information necessary for ensuring the effective transaction of the curricular inputs.

Curriculum Planning

Introduction

Good curriculum planning is central to delivering effective teaching and learning.

The notion of curriculum planning has many interrelated perspectives, which include:

- Principles of curriculum design
- Writing learning outcomes
- Practice learning, and integrating practice, skills, values, knowledge and theory.
- Assessment / evaluation

Learning outcomes

After going through this unit, you will be able to

- identify the different components of curriculum planning;
- recognize and value the logic behind every different stage and step of curriculum planning;
- compare the ideal situation in curriculum planning at the University education level with what is actually happening in India;
- identify certain basic principles that may improve the process of curriculum planning in university education.

Meaning and scope of curriculum

A comprehensive definition of curriculum

We define curriculum as embracing all those planned and unplanned learning activities, which occur in an educational setting. The crucial point here is that curriculum is the umbrella under which all these aspects fit. You cannot separate “what” is being taught from the “where”, “when” and especially “how” it is being taught. For example, if the “what” we want to teach is co-operative learning skills and the “where” is a classroom with fixed desks in rows in which students cannot easily move about, the “what” is teaching perhaps individual silent conformity rather than co-operative learning. If we want to teach our students to write creatively but our “corrections” put a red pen through every second word, the “how” we have chosen may be teaching that we value other things more. For these reasons, the “what”, and the “when”, the “where”, and the “how” can all be considered content and thus are all aspects of curriculum.

In this view curriculum includes all the teaching programmes, whether they are created by the institution or mandated by an external body. We might distinguish here between **curriculum** and **syllabus**. Syllabus is the prescribed content, the units, the written programmes, the courses, which serve the wider curriculum. Curriculum then is really the framework into which the syllabus fits. It includes all the teaching learning processes, from the training and preparation of staff, through the varying methodologies, which teachers choose to deliver programmes and assess them, to the ways that teachers choose to speak to and relate with their students.

It also includes the learning environment, the kinds of classrooms, closed and open, the kinds of seating arrangements, the kinds of resources that are available to teachers and students.

It most importantly includes the vision, the set of educational goals and purposes which directed the choice of curriculum content in the first place, recruited and trained particular types of teachers and designed particular types of programmes to be delivered in particular types of classrooms in particular ways.

Students are also learning from the unplanned activities that take place in an institution - the **hidden curriculum**.

- If, for example, in a girls' college we say we want girls to have opportunities that would allow them to compete on an equal footing with boys at a later date, but we fail to make computer science part of our curriculum, we are sending the girls quite another message than the one we've said we believe in.
- If we tell our students that they must take care of the environment, but fail to provide dustbins around the institution so that rubbish accumulates in untidy heaps, our students are learning a) we don't mean what we say and b) the environment doesn't really matter.
- If we say that we want to encourage independent learning but are curt with students when they make a mistake in an assignment, again, the student is learning something quite different to our stated intention.

The "hidden" curriculum is enormously powerful and it operates at all levels of the teaching-learning process just as the planned activities do.

We also take a "big" view of curriculum. As the Australian educator, Garth Boomer, has said,

"... for most people outside education, curriculum is synonymous with "syllabus" or "course" and signifies work required in a particular subject rather than the total educational offerings of an institution..."

... when I use the term "curriculum" I mean everything from design of the system, plans and rules, and institutional plans and rules, to the realisation of extended teaching units in individual courses and classrooms, spanning evaluation/assessment... taken fundamentally as what students formally do and learn in institutions, curriculum is the be-all and end-all of education. It is all the other areas of education, buildings and facilities, resources and personnel, staff training and consultancy, support and service."

There is a distinction in usage of term "curriculum" at school and higher education levels. In schools it is formal and organized. There is comparative freedom of choice in learning activities in higher education. In the universities, curriculum is to some extent a self-selected learning experience. Exercise of choice at higher levels results in students fashioning a curriculum. Essential feature of curriculum in higher education stage is its scope of variability, especially in Arts, Sciences and Humanities and less in technical and other professional courses.

There are five **fundamental issues** to be carefully examined before developing any curriculum or plan of instruction:

- educational purpose;
- educational experiences that need to be provided to attain these purposes;
- effective organisation of these educational experiences;
- effective implementation; and
- evaluation.

The first three points fall within domain of curriculum planning while implementation and evaluation of curriculum belong to the domain of curriculum management.

Basic considerations in curriculum planning

Educational purpose

The educational purpose of curriculum is derived from the **vision** of an institution. Vision is a shared image of a 'hope for future' of any institution. It is a narrative description of hopes and aspirations of all who are impacted by the institution's processes, services and products. The vision shapes and energizes all the members of the institution in all of their efforts for all of the time. For instance, if the vision of an institution specifies that it will be a premier institution providing modern education for girls then the institution would have to offer degrees in computer application courses like e-commerce, website designing, business management, etc. The choice of courses will result in specific goals and objectives. The question would then be to define the educational purpose in the vision of an institution. What would be the considerations for such a definition? Some of the considerations for defining the educational purpose would be social relevance, student needs and interests and international norms.

Social relevance in the area of the kind of values that the institution wants to promote, the role it would like to play in the economic development and social transformation of the region in which it is situated, determines the **educational purpose** that the institution wants to fulfill. For instance if it wants to promote the value of religious tolerance, the curriculum would include religious thought for all religions. If the institution wants to become an instrument of economic development in the region it would offer courses in professional and vocational courses like secretarial practice, computer application courses, etc. If the institution believes it can achieve social transformation then it needs to include courses which will attract students from marginalized sectors, girls etc and offer courses in integrated subjects like development studies, etc.

Understanding **student needs** and **interests** are vital for curriculum planning. Curriculum needs to have a greater sensitivity to student aspirations and interests, which are the parameters of determining not only the goals of education but also the subject matter to be taught and the teaching-learning methodology. An assessment of student needs and interests needs to be carried out to find a balance between student needs and the existing curriculum. The curriculum planners can directly involve students in this aspect. Their opinion on the relevance of the course and whether they perceive the aims and goals of the course is rarely sought. This aspect acquires importance in the current scenario where students prefer taking parallel courses in academic subjects from day colleges and professional subjects from evening colleges. The students are thus giving the system of higher education a feedback as to the irrelevance of some of the courses that day colleges offer. Some factors that would help to understand varying student needs and interests are:

- different types of intelligences exist;
- different types of intelligences suggest that students access learning in different ways i.e. they manifest different learning styles;
- geographical, socio-cultural, and economic factors add to the existing genetic diversity of the student body.

International norms also inform the determination of the educational purpose of the curriculum. In the higher education stage or any other stage for that matter, curriculum cannot be planned only by local and national considerations. Leaps and bounds have been made in research and, therefore knowledge, in all subjects around the world in the recent past. The curriculum planners need to be aware of the current status of development of the discipline, trends of research being conducted around the world and maintaining compatibility in curricular inputs being provided around the world. Meeting these norms would be imperative if an institution wants to continue to exist in today's age of globalization. Students prefer institutions, which provide the quality that enables them to work/study anywhere else in the country or the world. This kind of transfer between institutions and workplaces is possible only when international norms for courses determine the kind of educational experiences that an institution provides to its students. For instance, students would seek admission in institutions who have gained a reputation of their alumni giving maximum number of successes in national and international entrance tests such as GRE, TOEFL, SAT, GMAT, XLRI, CAT, etc.

Goal setting and objective specification

Once the premises of curriculum planning are understood as described above, goals are set. Curriculum goals are long-term expectations of what the planners wish the students to acquire in terms of knowledge, skills and values as a result of exposure to the course/ programme. Goal specification gives direction to formulation of curricular objectives and specifies the parameters of knowledge, skills and values within which the curricular objectives are fitted. It also gives clarity and direction to teachers and students with regard to the effective transaction of content and facilitates learning outcomes. When curriculum is clearly formulated, it has several other advantages:

- possibility of effective communication between teacher and student;
- facilitating a framework for selection of course contents and structures;
- shows the direction to the most appropriate teaching-learning methods;
- reveals the best way to evaluate, monitor and assess the course;
- it helps teachers to think about the objectives and relate them to students' learning experiences and assessment tasks more efficiently.

On the issue of broader goals of higher learning institutions the UGC says: "*.... A university does not cease to promote and preserve these values even when utilitarian functions are required of it. Unless a university trains its students, irrespective of their courses of study to think rationally and fearlessly and to appreciate moral and cultural values, it cannot be said that it has succeeded in imparting to them anything which could be considered as a peculiar gift of its own...even in university institutions which primarily provide training in professional skills, the inculcation of liberal values has to be given due attention and an important place.*"

In order to understand the knowledge, skills and values that a course hopes to achieve let's take the example of Nursing Education. One of the knowledge goals would be: the conditions under which intravenous (IV) fluids have to be administered, a skill goal would be the technique of administering IV and some value goals would be being kind to patients, administering treatment to them with the least amount of pain, being cheerful with them and so on. The challenge for the curriculum planner is to translate the value

goals in the curriculum while transacting the content to achieve the knowledge and skill goals.

Self-assessment

1. So far we have discussed a few major basic considerations of curriculum planning.

Examine the curriculum that is being followed in one of the subjects/ programmes you are teaching or will be teaching. Keep in mind and answer the following areas, which decide the curriculum input and processes:

- What are the objectives of the course?

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- What is the social relevance of the course?

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- How are student needs identified in this course?

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- In what ways does the course meet international standards?

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Organisation of educational experiences

In this section we will discuss how the execution of the curriculum takes place.

Learning outcomes

The next stage in curriculum planning is the translation of curricular goals into what has to be actually executed in the institution on any given day. The question that will facilitate the transition is: 'What should our learners be able to do as a result of taking this course or programme?' The answer to this question can come from many sources, including discussions with students, alumni, faculty, employers, advisory groups, certifying bodies, expert committees, national policies an/or community representatives.

The answers lead to the formulation of **learning outcomes**. Intended learning outcomes answer the following questions:

- What will students know or understand once they have successfully completed this unit of study (programme, course)?
- What will they be able to do with their knowledge or understanding when they have successfully completed the unit of study?

Once the learning outcomes are in place, they will be assessed at the completion of the course or programme. The questions to be addressed are:

- What assessment task(s) will the student have to complete to assure that the outcomes have been met?
- In what ways do these assessment tasks reflect the contexts in which student will be expected to use the knowledge, skills and attitudes learned in this course/ programme?

Once the learning outcomes and the assessment processes have been delineated, in the third step it is possible to decide on the needed content and appropriate learning processes. At this stage the principles of curriculum planning provide the basis. The questions to be addressed are:

- What facts and information do the students need to have in order to meet the outcomes? What skills and abilities are essential to the outcomes?
- What themes, issues or concepts do students need to explore and understand?
- What experiences will best help the student gain the knowledge, skills, abilities and values needed to meet the outcomes?

Of course, this is seldom an uncomplicated linear progression. Designing curriculum is never predictable. Educators/designers must always be prepared to move back and forth between outcomes, assessment, content and learning processes; to continually learn from students; and to constantly question how to better prepare students for the world.

Scheme of studies

Broad goals and learning outcomes determine the subject of the scheme of studies that will form part of the curriculum. Usually, the courses or papers that will be offered in a particular discipline are first discussed in a Department, then in the Board of Studies of Schools/ Faculties and the Academic Council. Teachers play a two part role in curriculum planning – one, as members of these bodies and secondly in the preparation of the basic drafts of curricular contents in their specific subjects.

Schemes of studies are designed on a scientific basis.

Models of curriculum design

Five models of curriculum design are used in this decision which are as follows:

- Subject matter / disciplines
- Specific competencies / technology
- Human traits / processes
- Social functions; and
- Individual needs and interests

Subject matter / discipline based model

Each subject and discipline of studies has its own inherent and distinct designs, which make it easy for a curriculum planner to design the scheme of studies. For instance, the Sciences are characterized by knowledge, which proceeds from observable facts, generalizations, principles that are tested by experimentation, resulting in formulation of theories. The Arts are characterized by the study of social phenomena from which generalizations of behavior are derived and theories are formulated to explain the existence of various cultures. Once the identification of the design has been made based on the subject chosen, it is also possible to widen the scope of a course by creating an inter-disciplinary approach. For instance a course in Management Science would include subjects from both science and arts like organizational behavior and operations research. Restructuring of courses in higher education in India has to be made to evolve an amalgamation of knowledge, skills and value essential for economic, social and cultural needs of the individual and the nation.

Specific competency model

This is a curriculum designed to cater to specific competencies. It attempts to clearly identify the competencies to be acquired. Learning activity, its sequence and performance indicators of learners revolves around the competencies to be acquired. In this model, the design has behavioral and performance objectives or competencies. The learning activities are planned to achieve each objective and the learner's performance is evaluated before moving on to the next objective. In this model the expectation is that the learner himself, demonstrates by experiments, application and activity, his/her competency as an engineer, doctor, lawyer or agronomist.

The specific competency model is best suited to achieve mastery over knowledge and skills that require **application**. The competency model is best suited to help individuals **learn** behaviors. This model is used in vocational training/professional courses of all kinds.

Human traits/processes model

The selection of human traits model of curriculum presupposes:

- development of predetermined and specific traits as its central objectives, and
- selection of certain deliberate implementation processes to achieve the objective.

The components of human traits model are hard to demonstrate easily because it involves values and judgement, e.g., national and social values of Arts, Social Science graduates. The most important part of human traits /processes model is availability of appropriate experiences. Development of human traits is possible when opportunities to analyse and think about experiences in relationship to traits are increasingly given. Role models who have the desired qualities also enhance human traits development. The basic requirement to help verify the acquisition of human traits is the existence of rubrics of measurement that provide a two dimensional description of individuals who exhibit the existence of desired values/traits. On one dimension are the values/traits and on the other are the levels of their manifestation. For instance for a course in Social Work, some of the human traits that curriculum planners hope that students will manifest are: participation, empathy and leadership. If these values are placed on the horizontal axis of a rubric, then the vertical axis would categorize the levels of their presence in students starting from awareness, to receiving, responding, valuing, organisation, and characterization by value. (For the descriptions of these terms place refer to the taxonomy of the affective domain in Unit 15 of this block). The human traits model has played a crucial role in Indian curriculum development. The emphasis is on development of values and outlook, as a result of education, regardless of subject stream.

Social functions/ activities model

This model is based on the premise that higher education takes place in a social milieu and so is responsible to the community in which it functions. Curriculum based on social needs has three basic principles in its organizational structure

- should develop around real life situations that have been persisting in society;
- must take into account needs of community and not just of the individual;
- must promote social action or social reconstruction and improvement through direct involvement of students and instructions for improvement of society.

Such a curriculum would translate into activities that are socially relevant (in the context of local, regional and developmental needs) such as:

- social/ community service;

- structuring educational experiences in bringing about social change, reconstruction and transformation.

Individual needs and interests model

This model has a learner-centered approach. Popularly known as 'child centric' education in school, it has its application in the higher education stage as well.

From a traditional viewpoint, individual needs and interests model increases students' interest in the learning process by building around it the developmental needs of students. In the face of current research in multiple intelligences and varying learning styles, this model gains more relevance. Not only should the curriculum be relevant to life situations and employment in the present and future, it should also be accessible to all students.

Having understood the various models of curriculum design, let us try and understand them in the context of a degree that is being offered in a college. For instance, if a college offers the B.Sc degree, using the subject/discipline model, it will provide for all experiences that will train students in that discipline. Using the specific competency model the students would have to be given experiences which will make them proficient in applying scientific theories to problems, to analyse them, hypothesise, experiment and draw inferences from them. One of the traits that the Sciences hope to develop is one of 'objectivity' i.e. making data based inferences, hence the curriculum should provide necessary opportunities/experiences to develop this trait. The social functions/activities model would provide the basis for life relevant usage of 'scientific temper'. As such the curriculum could involve say, testing of water bodies in the locality and prepare a report on the quality of potable water. The student interests and needs model would aim at providing them access to the curriculum not only through lecture/passive mode of transacting the curriculum but also provide different kinds of experiences to construct knowledge like group discussions, research, experimentation to name a few. All of them interact with each other to give a wholesome experience to the pupil in the institution.

Foundational and applied courses

There has been a constant desire to evolve a curriculum that is a proper mix of all the above models. Out of this perspective has arisen the approach or idea of evolving a mix of foundational and applied courses in almost all disciplines in the higher education stage.

The foundation and core courses are aimed at giving the student a broad familiarity with the disciplines of their choice including study of some in depth. Often, national and social values are included in the foundation courses. Courses of an applied nature offer practical orientation along with the foundation/core course of his choice.

Examples

1. For a degree in education the core/foundation courses are: Educational Psychology, Philosophy of Education and History of Education in India. Some of the applied courses for this degree are educational methods in Math, Geography, Science, Physical Education, etc.
2. For a degree in Management Studies some of the core courses are: Quantitative Analysis I and II, Organizational Behavior, Principles of Business Management etc., some of the applied courses are: Materials Management, Management Accounting, Operations Research, etc.

Self-assessment

2. List out all the core and applied courses that are offered towards various degrees in your institution.

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Curricular experiences

Having understood the definition of curriculum, principles and models of curriculum design, the curriculum planner should also be aware of the factors that define the boundary of the curriculum plan. To make this possible, curricular inputs must relate to the content and the kinds of learning experiences as well as their relative emphasis in the learning process. Curricular inputs mean learning materials and learning experiences that inculcate knowledge, skills and values. Secondly, the curriculum also gives details of specific aspects or curricular inputs that need to be provided in the core and elective courses. The main considerations in deciding curricular inputs are of scope, balance, integration, sequence, continuity, articulation and transferability.

Scope refers to the breadth, variety and type of educational experiences that are to be provided to the learners as they progress through the programme. It also refers to the basic skills and concepts to be taught and values and attitudes to be inculcated in the students. Curriculum planners must meet varying disciplinary, individual and social considerations. In this area decisions have to be taken on how much of the subject should be specified for a course. Decisions of scope are particularly important because they have implication for instructional time. Time is a fixed sum commodity. When a decision is made to expand coverage in one area, time must be taken away from instruction in another. Scope decisions involve important value choices relating to the relative worth of alternative learning experiences.

Sequence refers to time dimension in the duration of the programme or a specific time period in the programme, like first/second/third semester. There are two other important aspects to sequencing: **Continuity** refers to the principle of planned repetition and reiteration of content, each time at an increased level of complexity. It is the spiraling of content upward. For instance in a Business Administration Masters degree a course in Mathematics would take the form of Quantitative Analysis, Mathematics in the first semester, Quantitative Analysis – Statistics in the second semester and Operations Research in the third semester. **Articulation** is the meshing or linking of learning experiences, throughout the programme, from the initial to the final stage. Example, for a bachelor's degree in elementary education, to give students an experience of children and their learning modes other than theoretical subjects, experiences are built into the curriculum, which grow progressively complex through the years. For instance, in the very first year of a four-year course, students are expected to teach elementary school children art and activity classes. In the second year they are expected to study children in different environments and so on. The exercise culminates in a practice teaching session in the last year.

Balance in curricular inputs refers to the structure and order, reflecting the scope as well as the sequence, leading to the achievement of curricular objectives.

The importance of balance in curricular inputs is for the following:

- structure and order of curricular objectives

- balance between such factors or approaches as - learner or subject centered approaches, needs of society and learners' interests, general and specialized education, breadth and depth of the curricular inputs, objectives such as knowledge, skill and values, innovation and tradition, mix of instructional techniques, gradation in the degree of proficiency/excellence to be achieved.

Transferability is the factor that ensures that curriculum planners should take application of learning to life into account.

Self-assessment

3. Take one of the subjects/courses you are teaching in the higher education stage. In your opinion, have the various criteria such as scope, balance, etc., been effectively followed in specifying curricular inputs? What are your suggestions to make the existing procedures of curriculum specifications more sensitive to these requirements?

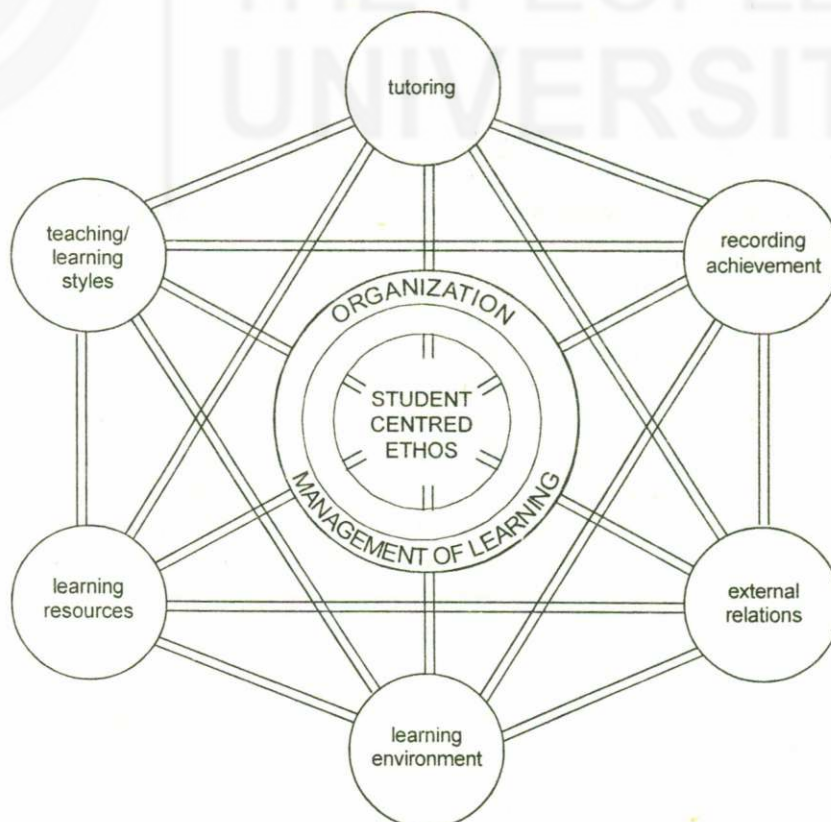
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Curriculum transaction

Curriculum transaction is at the heart of the learning process. It is the process of transaction that is the touchstone of success of the plan of providing meaningful learning experiences. It is possible that the best of curricular plans could fail to achieve the desired curriculum objectives because the process of transaction was faulty. This leads to the valuable conclusion that instructional design is the heart of the process of planning learning experiences in particular.



For transacting the same curricular input, there can be diverse approaches that are equally effective. There are two basic considerations to be borne in mind while planning the transaction processes. Firstly, the **physical and social characteristics** of the setting where the curriculum transaction will take place play an important role. Secondly, the **teachers** themselves who will actually transact the curriculum need to have the right capabilities and attitudinal dispositions. How well the teacher can adapt to the changing demands of physical and social settings as well as their own proficiency in various methods of transaction will determine the success and effectiveness of the programme. Lastly, the choice of methodology and learning aids, which will be used in curriculum transaction, play a crucial role in the effective achievement of curricular objectives.

Role of teachers in curriculum planning

Curriculum planning involves a series of steps, as we have already seen such as specification of goals, setting curriculum objectives, choosing the curriculum models based on relevant criteria and selection of curriculum inputs as well as determining suitable transaction modes. Each of these components is interlinked and the ultimate effectiveness of the programme is dependent on how well they are in tandem with each other. The questions are – Who takes the crucial decisions with regard to curriculum planning? What roles do the teachers, who actually transact the curriculum, play in determining the various steps involved? In the case of university education in India, there are various bodies who are finally responsible for curriculum related decisions.

Academic bodies – The Board of Studies of school/ faculties and the Academic Council, are responsible for curriculum planning. Usually, the courses or papers that will be offered in a particular discipline are first discussed in a Department, then in the Board of Studies of Schools/ Faculties and the Academic Council. Teachers play a two part role in curriculum planning – one, as members of these bodies and secondly in the preparation of the basic drafts of curricular contents in their specific subjects.

There are two other stages where teachers influence curriculum directly - curriculum implementation and evaluation. These issues will be developed in detail in the coming units.

Role of national and state level bodies

Decisions regarding curriculum and its planning, within the university are expected to be in consonance with the broad policy decisions taken by the **University Grants Commission** and the corresponding state bodies for higher education on the other.

National Council of Higher Education (NCHE)

The role of NCHE is to bridge the gap between separate agencies responsible for curriculum planning in various professional and non-professional fields. Their primary role is to ensure overall coordination in policy matters, reinforce inter-disciplinary approach, encourage research and play a role in restructuring courses. Curriculum development exercises initiated by UGC have to conform to NCHE policies and approaches. Thus, proposals made by NCHE have a significant impact on curriculum decisions at the higher education level.

State Council of Higher Education

Like NCHE, they have been formed with three primary objectives:

- to foresee future development in education through research, updating and restructuring courses;
- to control unplanned expansion; and

- to channelise it in desirable directions on the basis of socio-economic needs and academic requirements.

The State Councils are also responsible for maintenance and coordination of standards and work in close links with the UGC in this regard.

National level statutory bodies

Bodies such as AICTE, ICAR, ICMR, Indian Medical Council (IMC) and National Council for Teacher Education (NCTE) carry out maintenance of standards of curriculum related to different professional areas.

Professionalisation of curriculum planning process

Firstly, there is a need to institutionalize the process of curriculum planning. Curriculum changes at the higher education stage are adhoc, and agencies remain as mere legitimizing agencies instead of bodies adapting to changing requirements of curriculum.

Secondly, there is an imperative need for making curriculum responsive to changing requirements. The task force dedicated to curriculum planning and change must be much more broad based, from diverse boundaries of disciplines/subjects, social and national requirements and sustain student interests to come up with a curriculum to meet all these demands.

Thirdly, the success of a curriculum has to be validated against parameters of relevance, student interest, teacher involvement and commitment. There is no system in place as yet. There has to be a system of ensuring validation against these parameters by trying out the curricular inputs in a classroom before prescribing them on a larger scale or to the wider system.

Summary

Curriculum occupies the central place in the educational process. Planning and management of curriculum essentially involves four major steps:

- determining the meaning and scope of curriculum and goals and objectives;
- identifying the curricular content, guided by considerations of relevance in a broad sense;
- determining curricular inputs, including the basis of selection and its arrangement in a specific order reflecting emphasis of the gradation of learning outcomes desired. Also, making concrete plans on the transaction process, and
- planning the process of curriculum and the roles of the various agencies who are a part of it, including the teachers.

Suggested readings

Carr, W. (1995) *For Education: Towards Critical Educational Enquiry*, Buckingham and Philadelphia: Open University Press.

Cornbleth, C. (1990) *Curriculum in Context*, London: Falmer.

Curriculum Development

Introduction

Ralph Tyler wrote a book that describes what is known as the rational curriculum development process, or the means-end model. Essentially, Tyler's book says that to develop a curriculum you begin by examining three sources for ideas about the possible objectives you should include in a curriculum: the students, society, and the subjects. You then "screen" the needs of each of these forces by checking ideas against a philosophy of education and understanding of the psychology of learning. This allows you to specify precise instructional objectives, which lead to the final steps of curriculum development: **selection** of learning experiences to accomplish the objectives, **organization** of the experiences into a logical sequence, and **evaluation** of the experiences to see if the objectives were accomplished.

In other words, there are four parts to the rational, means-end curriculum development process. Tyler framed these as four questions:

1. What are worthwhile educational objectives?
2. What activities will allow us to accomplish these objectives?
3. How should we organize the activities?
4. How will we know if we've accomplished the objectives?

Let us discuss the process of curriculum development further.

Learning outcomes

After going through this unit, you will be able to

- specify the steps of curriculum development;
- critically examine the processes presently adopted in curriculum development in Indian Universities;
- understand the role of the different academic bodies and individuals in the process of curriculum development;
- appreciate the need for, and the implications of, giving greater autonomy to teachers in the curriculum development/ making process;
- specify course objectives to make them effective;
- analyse course outlines keeping objectives in mind;
- understand the process of empirically validating curricular material; and
- appreciate the need for continuous appraisal and renewal of curricular material.

Steps in curriculum development

Curriculum development requires a systematic approach to make it relevant to all programmes and courses. Curriculum development is an evolutionary process. Before the curriculum is finalized, it has to be put through a series of developmental stages. The figure below indicates the process that consists of five stages or steps to arrive at the final curriculum.

Stage	Development activity
● Goal Specification	Identification and specification of instructional objectives
● Planning	Writing outlines Specification of scope Content sequence Selection of teaching-learning strategies Identification of reading and reference material
● Validation	Evaluation by expert bodies
● Field testing	Determine optimal conditions of programme use Study links with other classrooms Institutional operations
● Quality control	Refine curriculum for larger adoption

Figure 1 Stages of curriculum development

The curriculum development process normally begins with the task of identifying the **specific objectives** of teaching a particular course of the programme. The importance of setting specific objectives is that they act as broad parameters for making all further decisions regarding content selection, time allocation, assignment of credits, etc. Each course or programme can have very different purposes. For example, a course in Physics at the under-graduate level, may aim only at developing the basic knowledge and understanding of related concepts and ideas. At the post-graduate level, the purpose of the course will be to develop the capabilities of application and analysis. At the advanced level, the learner is expected to synthesise the knowledge obtained from diverse sources and perhaps even generate new ideas. It is the instructional objective, which guides us in the scope of a particular course of study, its breadth and depth, and the expected learning outcomes on the part of the students when they complete the course of study successfully.

Practices followed in Indian universities indicate that formulation of instructional objectives is left to individual teachers and examiners to examine the underlying objectives and orient their teaching activities accordingly. This is a great opportunity for exercising autonomy and deciding the scope of a particular field of study and on the quality of teaching skills and evaluation of students with ingenuity.

The route to using this opportunity is to identify the instructional goals clearly at the onset in departmental settings to avoid leaving it to individual interpretation; especially at the undergraduate level where external examination is involved.

The core activity in curriculum development process is working out the content that will help achieve specific objectives for each course. This involves a series of **sequential** actions as follows:

Step 1: Specification of the scope and contents of instruction.

Step 2: Writing content outlines.

Step 3: Specification of the relative weightages for the different content items within a course, in times of instructional time allocation.

Step 4: Selection of the teaching-learning strategies such as classroom teaching, practicals, demonstrations, field work, self study, library work, tutorials, seminars, group discussions and so on.

Step 5: Development of instructional material /identification of reading and reference material.

Step 6: Specification of evaluation procedures.

Self-assessment

1. *Examine the framework of any course you are teaching and see if it broadly adheres to the above six dimensions of effective curriculum development. Write your observations.*

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Mechanics of curriculum development

Decision-making process with regard to curriculum must be a cooperative and not an individual concern. The courses to be taught and their contents are of equal importance to teachers, students, administrators, subject experts and members of the community. Several questions remain unanswered today, two of the main being:

- How are the Indian universities operationalising the collective process of decision-making with respect to curriculum development?
- What are the specific roles played by each of the stakeholders in this process?

Universities adopt varying patterns and no single description can capture the process of curriculum development. As this directly affects the work of the teacher, it necessitates a closer study.

The broad outlines of the curriculum framework adopted by any university are relatively stable. For example, issues such as whether the undergraduate course must consist of one major course and two minor ones, do not require periodic deliberation. But the crux of curriculum planning and development is individual course outlines because the frontiers of knowledge are constantly changing. This has a direct impact on the teaching-learning process as well as the quality of students graduating from the particular university.

The **Board of Studies** is the formal body where collective thinking on curriculum issues is generated. Teachers and subject experts examine the proposals made for revision of existing curriculum, inclusion of new courses, appointments of examiners and so on. The proposals approved by the Board of Studies are then placed before the Faculty.

The **Faculty** is comprised of teachers from a multi-disciplinary background and varying specializations and together represents the various teaching departments of any university. Members of the community are also a part of the Faculty, such as educationists, social workers, industrialists and others. The Faculty examines the suitability of the proposals made by the Board of Studies and makes recommendations.

In some universities, the proposals approved by the Faculty are placed for further examination and formal approval to the **Academic Council** or **Post Graduate Council**.

Curriculum development activity	Responsibility
● Course formulation – form and substance of the course	Subject teachers/expert
● Examining the form and substance of the course from the disciplinary angle	Board of Studies
● Examining the relevance and placement of the Course in an interdisciplinary perspective	Faculty
● Examining the broad policy implications	Academic Council/Council of Post Graduate Studies

Figure 2 Summary of activities/ responsibilities of the curriculum development team in the universities.

Description in the above figure is broad and generalized. The constitution of the bodies and the procedures for processing the proposals will differ from one university to the other. By and large, curriculum related issues in most universities involve a cross-section of people. This is particularly necessary in the Indian context of higher education where affiliation to a central institution necessitates a common course of studies and an external examination to be followed by all institutions seeking the affiliation. While this reasoning seems sound, it still leaves some questions unresolved:

- Are these formal bodies able to understand and accommodate the ideas and aspirations of the students?
- Do these bodies have adequate representation of practicing teachers or do Heads of Departments, Deans and Principals who really belong to the administrative section overburden them?
- Are these formal bodies efficient enough to elicit and incorporate the perceptions of the community?
- These bodies are primarily focused on examining the proposals in form, but who ensures the quality of the substance of the curricular input is up to the mark?

To conclude, we can say that curriculum development is not a mechanical process. It requires collective thinking and decision making along with individual enthusiasm, dedication and experimentation. The challenge for curriculum developers in any university is balancing the diverse interests of many members. It is the teacher who ultimately transacts the course inputs and should play a major role in this process. As yet, this is to happen.

Freedom and autonomy for course specification

Quality of curriculum is hugely dependent on scientific and systematic preparatory exercises carried out by Board of Studies and Faculty before they carve out their final proposals. Many questions remain – who are the people who carry out these exercises? Are scientific explorations initiated before the formulation of curriculum?

The profession of teaching demands a wider participation from the teacher –serious thought must be given to these limitations to ensure the teachers' active participation in the curriculum building process. While the formal bodies may not offer them adequate scope of participation, the informal processes that are directly to do with the curriculum, provide plenty of opportunities for teachers to take initiative in the area of their specializations.

Autonomy for individual institutions and teachers

There are arguments for and against centralized decision making with regard to the curriculum. It is argued that when decisions are made at the university level, freedom of an individual institution and a teacher's skill and innovative spirit is taken away. Thus, many are in the favour of decisions being taken at the level of individual colleges. However, there remain many unanswered questions such as implications in terms of teaching and evaluation for any policy change to take place. These need examination.

Implications for teaching and evaluation

Autonomy to the teachers in the development of curriculum will offer tremendous opportunities to a teacher to experiment, innovate and explore new areas of teaching. Recently, UGC has made efforts to promote **Autonomous Colleges** in various parts of the country. Under this system, universities of long standing repute and consistent performance have been given the freedom to formulate their own courses and conduct their own examinations. However, the Universities continue to award the degrees and diplomas to students graduating from these colleges. Nevertheless, the teacher does not have complete freedom to formulate the curriculum as autonomous colleges have a similar structure for curriculum formulation, as do the universities. There are about 85 of more than 5000 colleges in India that have been given autonomy.

Autonomy to individual colleges gives them great freedom and encourages enthusiasm and commitment but it also puts a great deal of responsibility on them. It is important for teachers to remain dynamic and alert, aware of the research being done in their relative subjects and the aspirations of the students, which demands a high degree of professionalism.

Institutions have to set up their own mechanism of internal process of monitoring so that the freedom and autonomy are put to best use. Studies conducted on Autonomous Colleges reveal that the reactions of teachers and students on the success of this arrangement is mixed. Some consider it a positive step towards higher education, while others do not agree. It is too early to judge the merit and worth of this scheme. Perhaps, the provision of autonomy may have a direct impact on increased accountability of institutions and professions.

Development of specific objectives and course outline

What is then the objective of this unit? If the curriculum is already handed down to the teacher by the powers that be, then why is the teacher expected to repeat the process of formulating specific objectives. The answer is simple. The experiences for an individual student in the classroom and the collective of students in the college cannot take place in a directionless manner. The curriculum should give a clear indication to the teacher of what has to be taught and how it should be taught. In the higher education stage, a lot depends on self-study by the students with their teachers' guidance and supervision. The curriculum must therefore become a guide and also outline the outcomes expected of the students and the level of performance that will be considered adequate. This will also help provide the examiners a concrete basis to set the question papers and evaluate student performance. What remains to be assessed is whether the provision of a copy of the syllabus to the teacher and examiner is enough to achieve these objectives?

Objectives for each course must be clearly defined and expectations from students must be laid out clearly. These specifications should be made to facilitate measurement of course objectives in an objective manner. The course content must clearly indicate **learning outcomes** to be attained. This becomes particularly important when the evaluation involves external examiners.

Implications of having course specifications:

- requires teachers to make a detailed analysis of the expectations from the students enrolled in the course;
- requires authorities to ensure that necessary facilities are provided in the instructional settings where the curriculum is conducted;
- provides the practicing teacher with a solid reference point for evaluating the effectiveness or otherwise, of one's own teaching and guidance to the students;
- provides framework for self-study by students;
- helps eliminate the many different interpretations by the examiners and the expectations of the knowledge the students are supposed to make.

Specifications in terms of learning outcomes are not new to teachers. It is fairly common for a teacher to lay down the level of expectations in the performance of learners. However, these specifications remain only as a subjective understanding on the scope of treatment to be given to a particular content point, as well as the expectations of its impact on student learning. Even if the prescribed syllabus does not specify the objectives and detailed course contents explicitly, it is desirable that teachers explicate their understanding in this regard and make it known to their students.

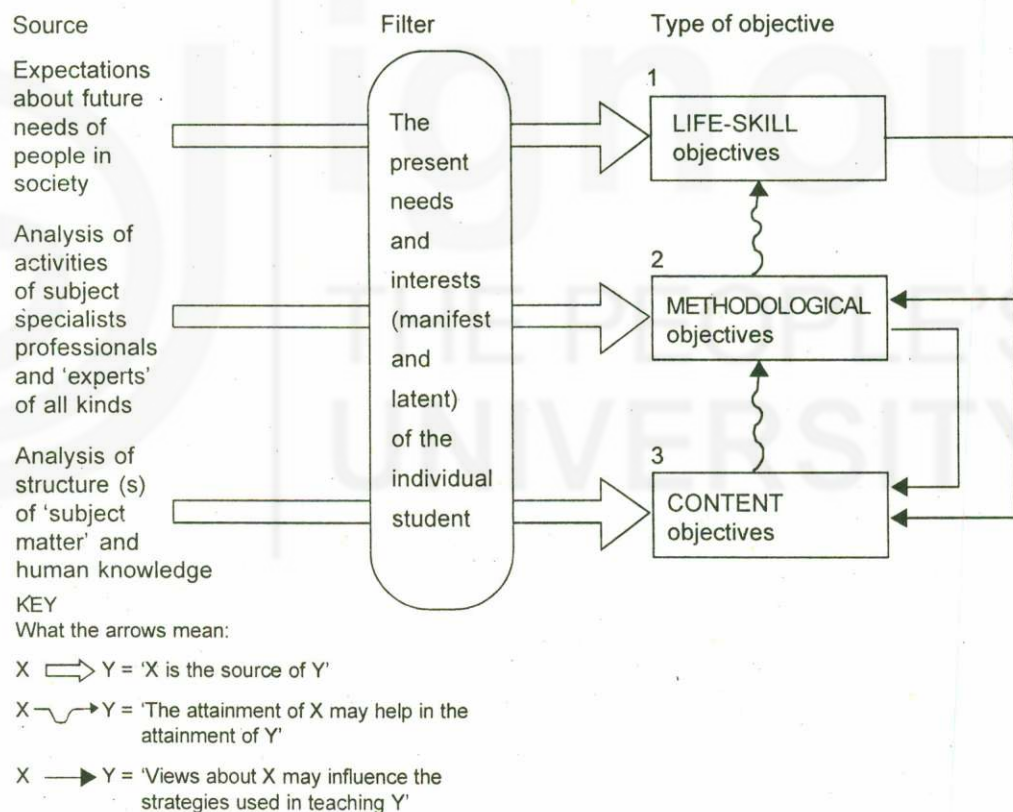


Figure 3 Source of objectives

Specification of weightage

The extent and nature of emphasis to be laid on various aspects of the courses in the programme, specification of objectives and course contents helps remove bias in the interpretation of subject content. The next most important point is to decide which aspects of the content in the course will be given relative emphasis. Criteria for relative emphasis are mainly three – **specification of time**, **specification of activities** to be undertaken and **specification of credits** given for different courses and contents.

Specification of time

The teacher will have to bear in mind that the total time available for transacting various courses is limited. Time is allocated in the syllabus according to the relative weightage to be given to different courses and content points in quantitative terms. The teacher will need to consider:

- specific objectives of various courses;
- previous level of learning of students with regard to the particular content units to be transacted;
- the difficulty level of the particular content units under consideration; and
- the particular stage at which the contents will be transacted, such as undergraduate level, post graduate level, etc.

Nature of activities

The achievement of different objectives involves adoption of variations in the transactional modes to be adopted. For example, some objectives may mean that the transaction of the course be done entirely through fieldwork. Yet other objectives may mean that the teacher uses a combination of modes of transaction depending on the demands of time and the resources available. A teacher will have to be conscious of the limitations of resources, time and the demands of specific objectives to be met to arrive at a combination of different kinds of activities to make the transaction effective for students.

Specification of credits

While deciding on the relative importance and weightage to be given to various courses and course contents, a teacher will also have to be conscious about the need for evaluation in addition to the effectiveness of student performance in the teaching-learning processes. To be specific, relative weightage to be given to different programme courses/ content units for the evaluation of students needs to be considered. This will obviously influence decision on the time allocated for teaching and also help a teacher to decide on the depth and breadth of treatment to be given to a particular topic being taught. Relative credits allocated to different courses coupled with the nature of evaluation procedures to be adopted will also determine the types of activities that the students will be put through. For example, if evaluation is to be oriented towards assessing the knowledge component, it may be appropriate to keep the practical work component in teaching to the minimum. But, if the treatment of the course demands extensive fieldwork, a teacher will have to provide for the same.



I've been boiling these eggs for half an hour but they are still hard!

Competence assessments may involve more than just a demonstration of skill: an assessment of knowledge and understanding will take place although this will often form part of the same assessment by questioning. In some cases a written test may be required.

Source: John Burke

The teacher must balance the demands of time, nature of activities and the evaluation requirements in a meaningful way. The need of the hour is to view the process of curriculum development in a comprehensive manner, giving adequate consideration to objective specification, the specification of teaching-learning methodology, time requirement and the evaluation processes to be adopted. It is essential that the teaching-learning process and the evaluation process are closely linked activities. Detailed guidelines of the evaluation process have been dealt with in Unit 16 of the same Block.

Self-assessment

2. Write the outline of the syllabus in any one of the courses that you teach in the following table. Determine the weightage of each unit/sub-unit in the syllabus.

Syllabus Unit/Sub-unit	Time in hours allocated to it. (a)	Average marks allocated to it in the examination* (b)	Weightage = (a) + (b)
.....			
.....			

* Add up all the different marks that the concerned unit/sub-unit has been allocated in different examinations and divide it by the number of times that it has appeared in an examination.

Depending on the weightage, credits and the kind of objectives to be achieved the teacher would decide on the curriculum. This would mean that the teacher decides the combination of methodology/process and the assessment method to achieve the objectives. Given below is a table of suggested methodology and methods of assessment to aid teachers in making the choices vis-à-vis objectives.

Objective	Methodology of transaction	Methodology of assessment
<i>Cognitive:</i>		
1. Knowledge and Comprehension	● Lecture method ● Library Research	● Paper – pencil test (written examination/testing)
2. Application	● Problem solving techniques (inductive/deductive methods) ● Project method	● Assess the product of the process used for accuracy, and speed.
3. Analysis	● Group Discussion ● Project work	● Assess product of group work ● Paper and Pencil test
4. Synthesis	● Project method ● Assignment	● Assess product of project for understanding of concept and its use to produce something innovative ● Assess assignment for innovative combination of different aspects ● Paper-Pencil test
5. Evaluation	● Group discussion ● Debating ● Writing and presenting position papers	● Assessing the evidential strength of position propogated.

Figure 4 Options for processes and assessment vis-à-vis objectives

Student evaluation

An important aspect of curriculum development is student evaluation. This is specified at the same time as the objectives are specified and the methodology of curriculum transaction is decided. This is so because the curriculum plan is complete only when the evaluation criteria are in place to provide evidence of the achievement of objectives. The normal practice is to conduct tests/exams to assess the extent of achievement of these objectives. The tools thus used have an inherent disadvantage in the sense that they are an end of term phenomenon and so do not provide the teacher any indication of student progress during the process of curriculum transaction. However for the end of term examinations to yield results, which show the success of the content and methodology of transaction, the teacher should have mechanisms of assessment, which will help him/her make mid-course corrections.

Continuous comprehensive evaluation

This system of evaluation is considered most suited to the students and teachers based on research findings. This will be discussed in detail based on empirical evidence of four schools.

The biggest change foreseen in assessment practices represents a fundamental power-shift. Assessment and evaluation is gradually becoming a shared activity. Students and parents are becoming part of the process and expect to understand and participate in the decision-making that results. Teachers who want to serve their students well are beginning to seek out ways to share the evaluation process.

Constructivist pedagogy suggests that student evaluation should help students to develop the plan for their own learning. It should provide positive feedback and encourage students to participate actively in their own learning especially so in higher education settings.

From the information collected through assessment activities, teachers evaluate student performance. They use their insight, knowledge about learning, and experience with students, along with the specific criteria they establish, to make judgments about student performance in relation to expected learning outcomes.

An assessment system based on the principles of continuous comprehensive evaluation is a sound example of such a system. Continuous, comprehensive evaluation provides opportunities for teachers to make suitable changes in their efforts. Continuous feedback also provides direction to students and parents in their understanding about the progress of the child.

Continuous and comprehensive evaluation is intended to provide a **holistic** profile of the learner through assessment of both **scholastic** and **non-scholastic** aspects of education spread over the total span of instructional time in colleges. Through continuous evaluation, it is possible to regularly obtain valuable data about the strengths and weaknesses of the students. This is helpful in providing remedial and enriched instruction with a view to realising the learning outcomes and correlating through this monitoring with the aims of education.

Salient features of continuous comprehensive evaluation

Regular: Assessment is a means to an end and not an end in itself. Evaluation of student performance and achievement is not a one-time event but an on going process. With the aim of discovering the pace of **progress** and strengths and weaknesses of students, Continuous comprehensive evaluation (CCE) is held at regular intervals. This reduces unnecessary burden on the student and makes space for better concept clarity and application of learning.

Focus on holistic development: Continuous comprehensive evaluation covers all aspects of the student's scholastic and non-scholastic development. In addition to focusing on evaluating knowledge, CCE also emphasises on the development of health, interests and character, development of ability to problem solve, make choices for decision making, communicate and relate with people.

Uses a variety of tools and techniques: CCE aims to make an unbiased and accurate judgment of a student's progress for which teachers need to collect evidence from various sources. The selection of activities and procedures for assessment are employed with the central objective of the harmonious growth of the student.

Involvement of all stakeholders: Considering that there is tremendous a value and need for support to student learning outside the classrooms; peers, teachers, parents and other staff are involved and communication and orientation is provided for them.

Continuous process of evaluation: Diagnoses of learning gaps, feedback, use of corrective measures, re-testing of student learning some aspects which are continuous.

Comprehensive learning: Record of the personality and attitude of the student is also maintained in order to help the him/her to develop positive attitudes and values. Participation in co-curricular activities and games is also a component of the evaluation process. The focus of CCE is *thus more on improvement of student's achievement rather than passing judgments.*

Key concepts in continuous comprehensive evaluation

Integration

Consider evaluation as an integral part of the teaching learning process and not merely at the end of the course activity.

Continuity

Undertake as frequently as possible, assessment of students' learning to remain in constant touch with development and growth of students.

Comprehensiveness

Include both scholastic areas for assessment of total development of the students, using testing and non-testing techniques of evaluation.

Co-operation

Involves other teachers, students, peers, observers and even community members in assessment and judgement making for more dependable evidence.

Criterion referenced

Seek evidence in terms of predetermined objectives or criterion for learning.

Diagnosis

Analyse all evidence gathered about students to identify inadequacies in student learning, to provide basis for remedial measures.

Feedback

Use test results and other evidence for reinforcement and improvement of student learning as well as instructional strategies.

Reading and reference material

Education at university level demands a considerable amount of self-study. Curriculum must specify a list of books and publications, which the students can refer to. Content of reference material must have direct relation to the course content being transacted. These must be in consonance with scope of treatment provided in curriculum and should be easily accessible to teachers and students.

Normally, the two categories of materials listed are books that function as textual reading material and reference materials consisting of original writings. In the Indian context, there is absence of standard textbooks for a course and students are often forced to depend on classroom lectures. This problem is acute in the case of material in Indian languages.

The second category of material is the reference material that can include original writings on the subject by outstanding authors and researched work that may not be available in textbooks. This encourages students to think beyond minimum levels of learning that they are expected to achieve in a particular course.

Developmental tryout of curricular material

The best test for identifying suitability of curriculum is to try it out in the classroom and collect feedback from the field. This will validate the operational suitability of the curriculum.

Developmental tryout of curricular material helps to determine operational viability of the curriculum in terms of:

suitability of curricular expectations with respect to needs, abilities and aspirations of the learners;

operational feasibility – resources available to the institution to transact the inputs of the curriculum;

qualifications, background, professional interests and capabilities of **teachers** who will teach the curriculum; and

weightage given to various parts of the curriculum in terms of time, credits, nature of activities, etc.

The curriculum rarely goes through the above evaluation process. The commonly adopted rigid framework for teaching and evaluation provides little freedom for such developmental tryouts of the curriculum. This is perhaps the main reason for the frequent complaints made by the teachers and students of the inappropriateness of the curricular inputs.

Institutionalisation of the curriculum renewal process

Dynamism in curriculum development process is essential if students and teachers are to forge ahead together during the course of their teaching-learning endeavours. Curriculum must respond to the rapid strides made in the frontiers of knowledge in any subject, the ever-changing needs and aspirations of the learners and the changing socio-economic characteristics of society. A curriculum that effectively responds to all of these is a dynamic one.

There has to be a constant renewal and updation of curricular inputs because research and new findings are constantly taking place across the world in every subject. It is important for curriculum revision to take place regularly and not on an ad-hoc or contingency basis.

Acquiring feedback from students and other sources is vital if an institution of higher learning must know where it stands with regard to the existing curriculum. Is there a mechanism to collect these information and use it systematically to bring about an improvement required in the existing curriculum?

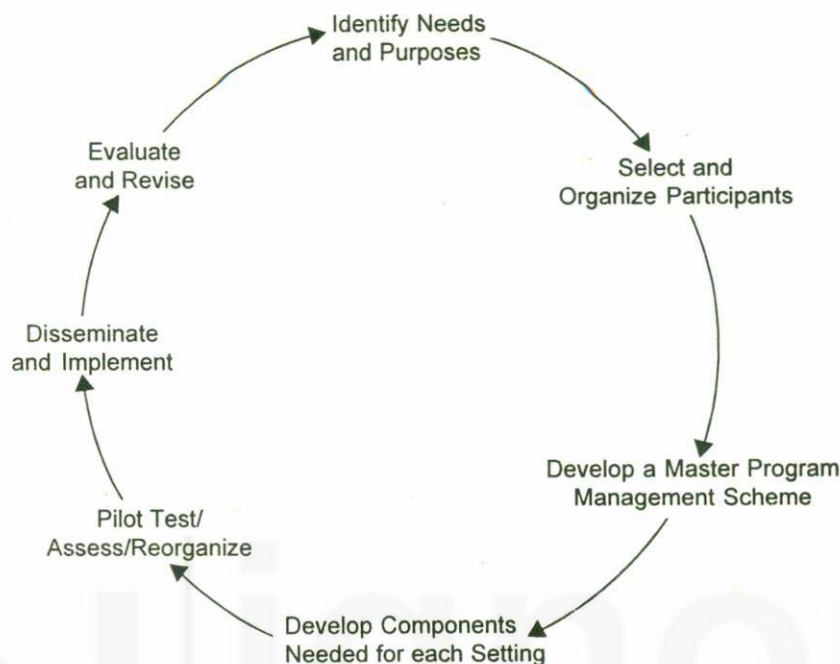


Figure 5 A Curriculum-development Model

Curriculum development is seen as a cyclical activity where each step is influenced by the one that follows, and in the process, redefines itself. Evaluative information on the curriculum gets generated in the field in a formal or informal manner. It is therefore possible to acquire this feedback and use it to renew the curriculum process as a continuous process.

Self-assessment

3. Analyse the objectives and content units of a particular course that you are teaching; also analyse the examination procedures/ question papers used for evaluating the course in the previous year.
4. In the context of the above discuss whether the weightage given in terms of time allocation to different topics, the teaching-learning procedures adopted, and the credits/marks allocated in the examination, are appropriate or not.

Summary

In this unit, we discussed certain steps involved in the curriculum development process, like setting the scope and contents of instruction, writing the content outline, assigning relative weightage to the content keeping time allocation in view, the selection of teaching-learning strategies, development of instructional inputs and specifying evaluation procedures. Focus has been on the various mechanics involved in curriculum development in different areas of study at the university level. Techniques on how to develop specific objectives for each course outline have been highlighted, keeping the learning outcome in mind, and also specifying the weightage to be given to time, nature of activities and student evaluation in terms of credits. Lastly, we have discussed the importance of constant curriculum renewal and the operational validity of curricular material through tryouts in the real classroom.

Unit-end activity

1. Collect systematic information from students on their perceptions of the suitability of the curricular inputs being provided in one of the subjects you are teaching, through an appropriate questionnaire. Write a brief note on the extent to which the curriculum matches the needs, aspirations and abilities of the learners. Also, list the problems that you face as a result of lack of time and resources in effectively transacting the prescribed curricular inputs.

Suggested readings

NCERT 2000 "Continuous Comprehensive Evaluation at Secondary Level" in *Inservice Teacher Education Package*.

Introduction

In the earlier two units, the processes of curriculum planning and curriculum development were covered in depth. Transaction of the curricular content, after its development, is the most crucial issue in the entire process of curriculum management. Contemporary view of curriculum transaction process is that it is a systematic process in which every component, i.e., teacher, students, material and the learning environment is crucial in bringing about the desired goal. The implementation or the action plan is the next focus.

An action plan addresses the following:

- What are we as teachers going to teach?
- How much matter should we include in a particular course?
- How are the topics and sub-topics going to be arranged?
- Are we going to follow a definite rule, procedure while transacting these topics?
- Have we allotted sufficient and definite time for each of these topics and sub topics?
- What methodology and media are we going to use?
- What will be the impact?
- How will the progress be monitored periodically?
- What evaluation procedure will we evolve to assess the success of this programme?
- Are there any alternative strategies for presenting these topics?

In this unit, we will focus on the process of curriculum transaction.

Learning outcomes

After going through this unit, you will be able to

- analyse curricular contents prescribed to you as the teacher at the higher education level;
- design lesson plans / units for teaching in a real classroom situation;
- use various modes of presentation to transact assigned curricular contents;
- evolve the appropriate instructional strategy;

- understand the interaction between inputs, instructional strategies (processes) and the evaluation procedures (outputs), and
- get a feel of your role as a classroom practitioner in the overall curriculum transaction process.

Organising curricular contents

Course organisation: In Indian universities, teachers are usually given different courses to teach and this leads to a situation where integration of the courses is not ensured. When more than one teacher takes up the responsibility and a single course is distributed amongst them, it requires efforts towards integration of the topics dealt by different teachers.

Establishing the objectives of the course guides this process. The first step in analyzing content is to establish the objectives that you want to achieve through the course. For example, 'instructional objectives' for the course 'educational technology' is that students will become skillful in using appropriate technology (like OHP, radio, TV, Computers in their teaching-learning activities, or administration activities in the field of education.

Self-assessment

1. Establish the course objectives of one of the courses that you teach presently.

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Organising a course also requires identification of the main concepts in the course and arrangement in a suitable sequence. In a well-structured and sequenced course, the learner is in a better position to recognize the order behind the plan, determine how the various parts fit into a whole; and how each part is related to the other parts. In course contents, there are three meaningful and logical parts – **facts, concepts** and **generalizations**.

Facts

Paul de Eggen, a specialist in information processing models of instruction defines **facts** as types of content that are singular in occurrence, have occurred in the past or exist in the present, have no predictive value and gathered through the process of observation.

Concepts

Concepts are abstract ideas formed after observing; for e.g., a child forms the concept of a dog first as a moving thing on four legs. As she is introduced to more facts about a dog vis-à-vis a 'cat' or a 'cow' or a 'donkey', she refines her concept of a dog. Hence, to form concepts, learners pay attention to likenesses, ignore differences, and place similar objects in the same category.

A concept has some essential attributes. For instance, 'a dog' is a four – legged animal, which is usually kept as a pet and it barks at strangers. 'A cat' is also a four-legged pet animal but it 'meows'. So 'a cat' is not 'a dog' even though it is also a pet because it does not bark at strangers.

The **highest-level concept** is a mental construct that is **timeless, universal** and **abstract**. Though the examples of a concept may vary in content, the general descriptors of the concept will be the same. Symmetry, as a concept, has many different examples that vary in content, but the descriptors of symmetry can be found across disciplines, as in art, nature or music (Erickson, 1995:66)).

Generalisations

Statements, that generally link two or more concepts, are known as **generalizations**. Generalisations are formed when a certain fact is observed as taking place in a certain manner. For example, 'a spherical object rolls when pushed', this generalization is formed when the fact is observed many times that a ball-shaped object, no matter what its size is, rolls when pushed. So, a generalization has predictive power and can be proved by making factual observations.

To organize content of instruction in the most effective manner, the teacher must ask himself/herself the following questions:

- What are the objectives of this course?
- Which of the assimilated facts seem the most relevant and accurate?
- Which of these concepts are the students familiar with and which of them need to be explained to help the students understand the concept?
- How do students learn to infer and predict through generalisations?
- How do they learn to test the reliability of the data they acquire?

Once the analysis of content is over, a teacher takes a decision on the presentation of content. David Ausubel, a learning psychologist proposed a good and useful system of presenting content. He points out, firstly, that new learning is built on prior learning, and secondly, that any stage of learning and understanding is built on previous, more general levels. Therefore, presentation always moves from 'known to unknown' and every concept should be presented with its sub-concepts, which are inter – related. He also spoke about presenting the students a framework of the lesson before it begins called the 'advance-organiser' so that students can peg their ideas on it as the lesson proceeds.

Self-assessment

2. From any course you teach identify a fact.

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3. From any course you teach, identify a concept and write down its essential attributes.

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.....
.....

4. From any course you teach, identify a concept of generalization.

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.....

Aspects of designing units

In a particular course, we often find that the whole course has been organized into meaningful and manageable parts that span an instructional period of several weeks. These parts are called **units of study**. Again, each unit is further divided into certain topics and this is generally centred round a broad concept, or a cluster of related concepts, facts and generalizations. There are three aspects to design a unit for presentation – **scope, focus and sequence**.

Briefly, scope is the breadth and range of contents

Since all the conceivable content and information related to a course cannot be covered within the specified units or time available, choices must be made as to the actual breadth and depth of each unit to be covered in a specified course.

The choice has to be made on two considerations. Firstly, the relative importance of facts, concepts and generalizations that should be taught in terms of the continuum of the overall curriculum. Secondly, the relative importance of the content that must be taught in respect of the needs of society, age, interests, abilities of learners. Hence one should always teach content that is needed to make more complex concepts meaningful and relevant to other courses in the overall curriculum.

Self-assessment

5. In one of the courses that you teach, select a unit of study and write its scope based on two dimensions discussed in the section.

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Focus

Focus determines what will be emphasized in the content. The focus should be decided right at the curriculum planning stage itself.

For example, a Statistics teacher who teaches at the postgraduate level gives the title "Diagrammatic Representation" to a course. After that, he/she lists out the major concepts that might go into this course such as Bar Diagrams, Two Dimensional Diagrams, Pictures, Statistical Maps, Cartograms, etc. Each of these major concepts could potentially form the basis of, or serve as a major part of, the unit of study within the course. Thus, the teacher who, decides to explain how the statistical data can be interpreted through various diagrams, can put the components of the unit into a framework that will accommodate general and the specific contents.

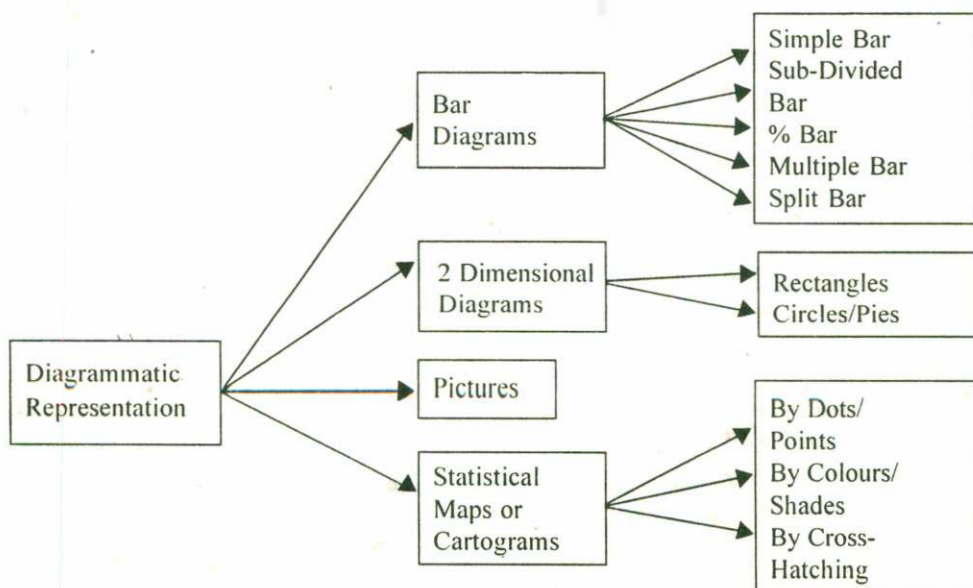


Figure 1 Organizing of the course 'Diagrammatic Representation' (Statistics)

The above scheme can be used to plan what each unit can serve and also as an excellent organizer for students. Hence, this scheme should be put up on the board at the commencement of the unit of study, as this will help the teacher and the students track the progress through concepts and activities on which the unit is built. Thus, 'Focus' is an essential part of the unit design.

Self-assessment

6. Make a diagrammatic representation of the 'Focus' of one of the subjects you are or will be teaching.

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Sequence

Sequence generally specifies the order in which the contents will be arranged. There needs to be logic concerning the order. Subjects can be arranged thematically or chronologically.

The fundamentals in sequencing content are:

- Learning takes place serially, i.e., from **simple to complex**.
- New learning should be **based on previous learning**. Start with the familiar first. Even while doing this, it is important to provide the connections between what the student already knows and the new parts to be learned. The logical order between the two should be clearly established.
- The teacher must explore the potential of introducing an interdisciplinary approach – **integration of subject matter** to different fields of studies. Expert studies have revealed that an interdisciplinary approach has more educative value and the student learns that the same facts and principles from many fields hold good. For example, the theme 'political beliefs' of a society determine its 'sociological profile' and this can be explored while sequencing units in both Political Science and Sociology courses.

In correlating subject matter, the curriculum planner has to identify the related subject matters of two different disciplines and fuse them into a harmonious theme.

Self-assessment

7. Examine any of the courses that you teach to identify a theme that could link it with other courses that students study.

Concept-based instructional design

Another method of organizing content is a concept-based instructional design. Learning is the making of meaning, meaning is making connections and the connections are the concepts. As we move into a knowledge economy, the information base for any curriculum will continually and rapidly change. How will teachers and trainers manage and organize this information so it makes sense to learners, and ensure that they are not overwhelmed by a plethora of unconnected and fragmented facts? We have been investigating a **concept-based approach** as the organizer for curriculum design and delivery.

In the following figure, Erickson, (1995:73), compares the value of concepts and topics as curricular organizers.

Topical organizers	Conceptual organiser
● Frame a set of isolated facts ● Maintain lower level of thinking ● Hold learning to the fact or activity level ● Have short-term use to cover an event, or set of facts ● Increase the overload curriculum	● Provide a mental schema for categorizing common examples ● Lead to higher levels of thinking ● Aid in the development of higher order generalizations ● Reduce the overload curriculum by framing the most salient, or critical example of the concepts

Figure 2 Concepts and topics as curricular organisers

The following examples of a concept-based approach come from a project which investigated the teaching and learning of key competencies in vocational education and training. A key purpose for this approach was to facilitate the transfer of learning by creating conceptual organizers that act as a cognitive bridge from one context to another. The purpose was to foster both elevated (high road) and direct (low road) transfer.

Example 1

The first diagram is a graphical representation of a selection of concepts from the *Orientation to Learning* curriculum in **Women's Education**. Women's Education is within the Vocational Preparation Program.

It shows that the main concept is *Lifelong Learning* and the two sub-concepts are *Flexibility* and *Construction*. Topics in the curriculum were arranged under these sub-concepts. Lesson plans for the topics were then organized with the concepts as the central theme.

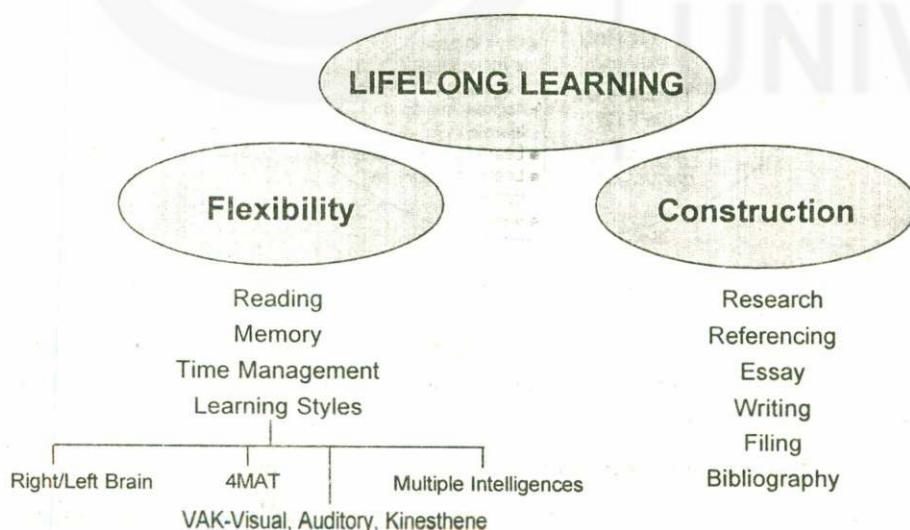


Figure 2 Concept-based Curriculum Design: Women's Education

The starting point

The curriculum content was not altered, but rearranged by identifying the main concepts. Content was then organized to connect with the most appropriate concept.

The teachers who designed this course, explain the difference between concepts and topics. Concepts are like the edge pieces of a jigsaw puzzle. Without them the puzzle doesn't hold together. Topics connected to a concept are like individual puzzle pieces and unless they fit into the bigger framework, they can seem like meaningless segments.

Detailed teaching plans developed around the main concepts

When concepts are used as part of design, we are creating a framework into which the puzzle pieces fit, making common sense to the learner. This promotes connections between the personal experience of learners and the new information being introduced – learning happens at deeper levels, connections are made with real life and transfer is more likely to happen.

Example 2

This is another diagrammatic representation of a concept-based design, this time for a Management Development module in Community Services and Health. The diagram below is an example of a session plan design around the sub-concept of *learning as a management competency*.

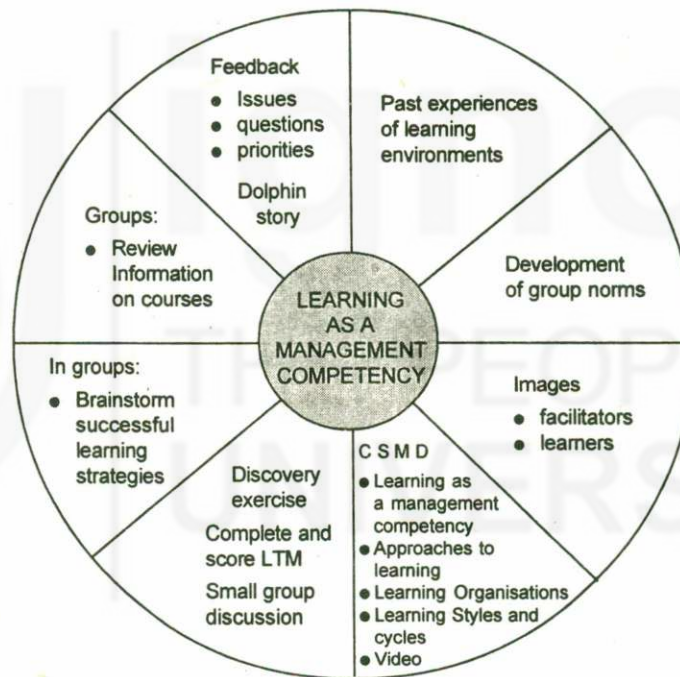


Figure 3

This session plan is structured using concept-based model. The session begins with personal experience, moves to information dissemination, then to practical application and finally to feedback and integration.

Concepts as the core – the design process

Step 1: We take the existing curriculum document and without altering the content, extract from the document what we believe are the main concepts – the big ideas / main themes.

Step 2: The content topics in the curriculum are then organized to connect with the most appropriate concept.

Step 3: Detailed teaching plans are then developed around the main concepts.

A concept-based framework provides a consistent and systematic linkage between the curriculum document, the instructional design process and the delivery.(Erickson, 1995).

Orientation to learning

This case study describes an application of the concept-based model. The lecturers who designed it negotiated with a lecturer in Women's Education to redesign a subject called 'Orientation to learning'. The most fulfilling aspect of applying the model – say the lecturers, are the student responses. One student response follows.

Hello everyone. I'm going to share with you my experience of learning using the concept-based instructional design. In my school years I was taught in an environment where I was sat at the same desk for the entire year. My teachers sat at their desk in front of the class seemingly watching my every move. I was told what to do and exactly how to do it – the teacher's way. If I couldn't do it the teacher's way – it was wrong. Discovering this method of learning has made me aware of the lack of recognition of each individual's approach to learning – the fact that everyone has different needs when it comes to learning and problem solving. Essay writing was forever a mystery to me. At school I was told – an essay has a beginning, middle and an end. To me the beginning was the first word – the middle was the rest of the words – and the end was the full stop. One day the lecturers broke the class into small groups, gave each group a packet of plastic drinking straws and told us to build a tower as high as we could. We were given an amount of time to plan this amazing feat. Now in just one lesson – I learnt that in essay writing – the heart of the essay – and the end is – tying it all together. I also learnt that if you don't plan your tower well it would never get off the ground. I have discovered that my learning strengths are seeing how some things work – hands on experience. I have difficulty with learning through discussion and lecture – so these are areas that I can work on and develop. If at school I could have learnt in a way that best suited me – I would not have rebelled because I was always wrong – I would not have become bored and disrupted the class – I would not have hated school – and skipped more days that I attended. I really wanted to learn – but I couldn't learn – the teachers' way - the only way.

To summarize, analysis, organization, design and presentation of content based on the objective of the course determines the component of the **Input** in the instruction system. The other components of this system are **Process** and **Output**.

Input

For a teaching-learning situation to be **effective**, it must be focused on a particular topic, theme, issue or problem. The central idea of these needs must be clarified and arrived at to build the components of curriculum around them. For example, if the central theme is "Preservation of Environment", questions such as what knowledge, skills, attitudes or behaviour do students need to acquire to preserve the environment will be key and tactical considerations. Then it will be what facts, principles, ideas and understandings are related to the theme. Finally, it will be a focus on the activities that will promote the acquisition of knowledge and skills related to preservation of environment and the availability of information resources for the students.

Answers or considerations to all these questions are primarily linked to **instructional objectives**. Specific and immediate outcome of a teaching-learning situation is linked to instructional objectives. Therefore, planning of inputs for a course or programme is completely based on the requirements and understanding of the instructional objectives and subject matter. Instructional objectives have three major purposes. Firstly, they clarify to teacher and student, what is to be accomplished. Secondly, they serve as the guide for design of suitable and relevant contents, activities and resources. Thirdly, they also provide guidance in student evaluation.

Identification of curricular input involves several issues, such as

- Determine the objective of the course.
- Make sure that the content is relevant to learning objective and the knowledge is relevant and complete.
- Inclusion of those contents that are considered necessary to accomplish objectives.
- Checking contents to make sure they are up to date and commensurate with the latest accepted thinking in the subject or field concerned.
- Content must relate to the lives, environment, mental development and experiences of the learners.

It is essential to present the structure of the content in an organised, balanced and sequential manner. Taking into account difficulty levels is the best way to ensure this.

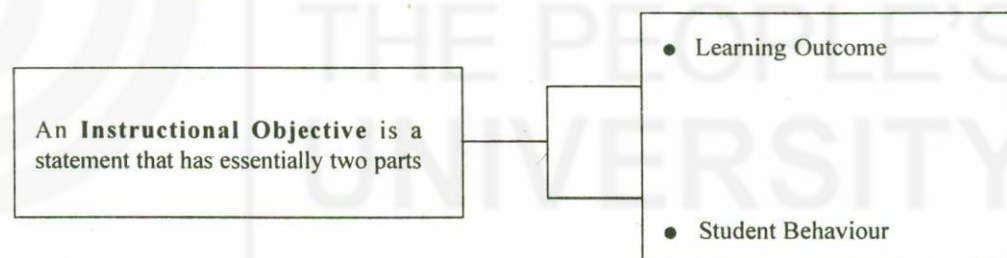
Instructional strategy

In the area of curriculum strategy, we have till now looked at the area of content organization. The next area is that of selecting the methodology/ strategy of curriculum transaction. The components that determine the strategy are:

- Instructional objectives
- Methodology of teaching

Criteria for selection of inputs for instructional strategies

Instructional objectives are the ability of the teacher to keep most teaching actions directly relevant to the specific objective most of the time.



In selecting the specific targets (objectives) for a lesson ensure that learning outcome is

- clearly stated and
- the student behavior is described in concrete terms. For example, students will learn to compare and contrast advantages and disadvantages of Bar diagrams vs Pie Charts by specifying the rationale for their use in different situations. In this example, the learning outcome is 'comparing and contrasting and the student behavior is 'specifying rationale for their use in different situations'.

Activity

Write an instructional objective containing its two essential components.

Methodology of teaching: Nature and structure of subject matter decides the inputs to be selected – inquiry approach or imparting of information. The decision is dependent on (i) what is being taught and (ii) how it is to be taught. The question of what is being taught has been dealt in the previous section. The question of 'how' is determined by:

(a) Students

An important consideration for selecting instructional strategy is their suitability to students. Some essential beliefs about students that are crucial for effective teaching-learning activities are:

- The student is the focus and everything teachers do in the classroom is with his/her specialized knowledge of the way a student learns and helps him/her forward. We need to believe we are teaching humans not subjects.
- Self-esteem is critical to successful learning. Teachers who underestimate the ability of their students and talk down to them or others who overestimate them and talk over their heads will never get the desired results.
- Students learn from each other as much, if not more, than they learn from their teachers. The synergy of group work provides demonstrably better solutions.
- Teacher expectations play a large part in student learning outcomes. If teachers expect students to perform well, they generally do.
- Experiential learning lasts longer. An old Chinese saying is "I hear and I forget, I see and I remember, I do and I understand". A learning experience that involves all the five senses deepens understanding and potential for recall. Training the mind to reflect on experience, providing opportunity to contextualise and internalize the learning further strengthens the learning.

There appear to be seven **types of intelligences** in students. Howard Gardner has identified seven:

1. Linguistic intelligence – operates through language as for example in poets and writers.
2. Logical/mathematical intelligence – the ability to think deductively based on logical assumptions.
3. Spatial intelligence – the ability to form a mental model of a spatial world and to be able to manoeuvre and operate using that model. Sailors, engineers, surgeons, sculptors are examples of highly developed spatial intelligence in use.
4. Kinaesthetic intelligence – is the ability to solve problems or fashion products using one's whole body or parts of the body. Dancers, athletes, surgeons and crafts people all exhibit highly developed kinaesthetic intelligence.
5. Musical intelligence – is best manifest in musicians such as A.R. Rehman, Mozart, Kumar Gandharva, M.S. Subhalaxmi and countless others.
6. Emotional intelligence – the ability to know oneself and to use that knowledge to operate effectively in life. This is the ability to motivate oneself and persist in the face of frustration, to delay gratification, to control impulses and to keep distress from swamping the ability to think.
7. Inter-personal intelligence – is the ability to understand other people: what motivates them, how they work and how to work co-operatively with them.
8. Naturalistic intelligence – Naturalistic intelligence is the ability to understand, relate to, categorize, classify, comprehend, and explain the things encountered in the world of nature. People such as farmers, ranchers, hunters, gardeners, and animal handlers may exhibit developed naturalistic intelligence.

Knowing the students helps the teacher to determine various ways of presenting the content and corresponding activities to teach and test understanding, which are differentiated to meet different needs.

(b) Community

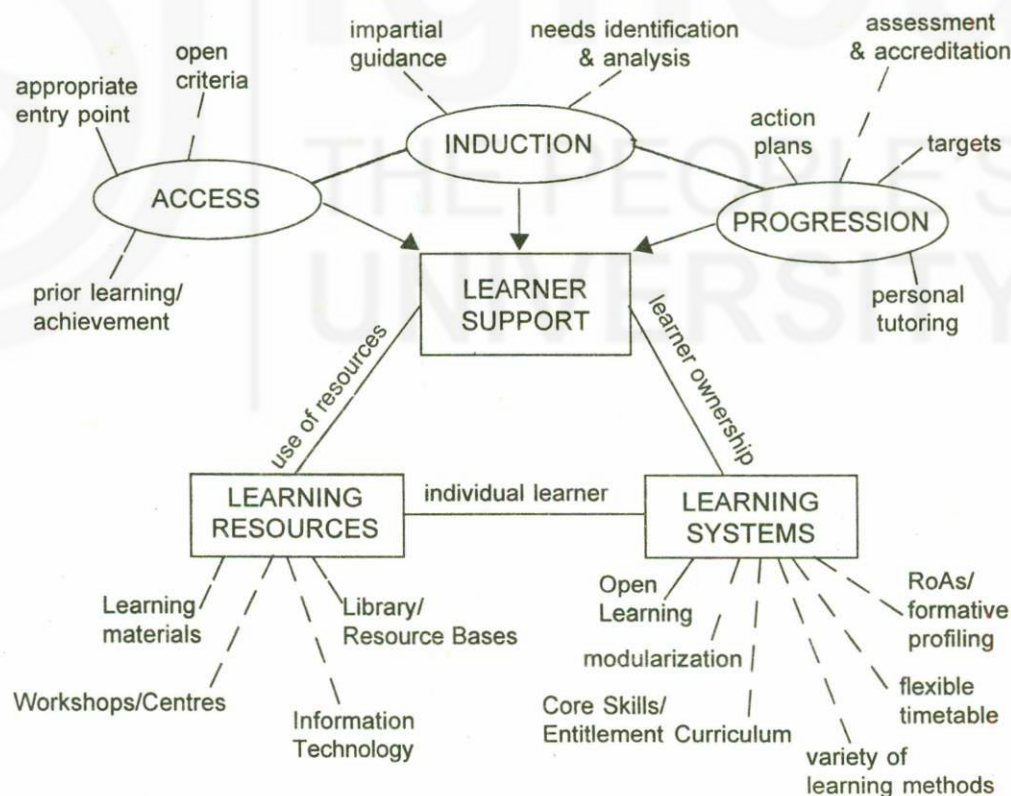
The role of the community in curriculum development has been adequately discussed in the first unit of this Block. Knowledge of community needs, beliefs, values and more can help us teachers in classroom inputs.

(c) Teacher

Instructional strategy adopted in a classroom is highly dependent on two factors: (a) the teacher's personal style of teaching, and (b) the model of teaching the teacher adopts. For example, if a teacher follows an inductive style of teaching, he/she may not like to follow the deductive style. The Inductive teaching style uses specific observations to draw general conclusions. The Deductive style is the process of using general statements to come to conclusions about specific information or situations. Hence, a teacher should analyse the particular style of teaching and the model that he/she finds most suitable for his/her particular style. A teacher should be much more open-minded and expand his/her efficiency by developing more than a single model of teaching.

To conclude, Oliva (1988), has suggested some guidelines for evolving the teaching – learning strategies as follows:

- A strategy must be right for the learners. It must meet their needs and interests.
- A strategy must be right for the teacher and suited to his/her capacity.
- A strategy must be right for the subject matter.
- A strategy must be right for the time available.
- Reference material must be available if students are required to carry out research projects.
- A strategy must be right for the facilities available. (For example, dividing a class into small groups for a discussion may be impractical, if the room is too small).
- A strategy must be right for the objectives. It should be chosen in such a way that it fulfills the instructional objectives.



Source: Nash, et. al. (1991).

Figure 3 Key features of flexible learning in post-16 institutions

Activity

Two different teaching-learning situations are presented in this section:

Situation A: Mrs Sharma teaches Economics to the 1st year students in the undergraduate course. Her students are always complaining that they find it difficult

to comprehend what she teaches. They are bored and resort to noisy disruptive behavior. Her classes do not generate interest and the students are unable to concentrate because of the monotony. There is no sequencing in her teaching from one period to the next. She rarely makes an effort to enhance the attention of her students.

Situation B: Dr. Chandrakant also teaches Economics at the undergraduate level. His students pay a lot of attention to what he teaches. They are always involved in interesting assignments he has devised for them to work on. His concern about his students is visible as he spends considerable time assessing their motivational levels. He pays heed to the sitting arrangements of the class before he commences a topic. He gives his students a list of activities that keep them engrossed. He encourages queries and listens to them with concentration and patience before replying to them.

Q. It appears that the teacher in Situation B is more successful in his teaching. Identify the different components in his class that has contributed to its success in comparison to Situation A.

Models of teaching

As a teacher, you must follow a set of teaching strategies that help to get the best out of your students and makes the class more lively and effective. A model of teaching is a generalized set of behavior that emphasizes a particular instructional input or a set of inputs.

Bruce Joyce and Marsha Weil (1980) have defined it as “A model for teaching is a plan or pattern that can be used to shape curriculum (long-term course of studies), to design instructional materials, and to guide instruction to the classroom and other settings”. Olive, another famous curriculum analyst says “Each model consists of a rationale, a series of steps (actions, behaviors) to be taken by the teacher and the learner, a description of necessary support systems, and a method for evaluating the learner’s progress. Some models are designed to help students grow self-awareness or creativity, some foster the development of self-discipline or responsible participation in a group; some models stimulate inductive reasoning or theory-building; and other provide for mastery of subject matter”.

In day-to-day teaching experiences we come across a number of teaching models such as exposition teaching, group discussion, role-playing, demonstration, stimulation, discovery, learning laboratories, programmed instruction, tutoring, problem solving and mediated instruction. Joyce and Weil (1986) identified twenty models of teaching and have grouped these under four broad categories: (i) information-processing models (ii) personal models (iii) social models and (iv) behavioral models. Details on these models have already been covered in MES-103 (Unit 9 and 10 of Block 3) of this programme.

A pertinent question is, therefore, is it essential on one’s part to know a variety of modeling for successful teaching? The answer is, perhaps, yes. All models may not be equally effective for all types of instructional situations and purposes, and hence it is important to know the potential and attributes of several models for selection and use so that the most effective one can be chosen, as per the need of the context.

Selecting media

Media can make the teaching-learning process much easier and more effective. Slides, tapes, television shows, films, CD Roms and other wide variety of training devices are most commonly used depending on the resources available. The decision on what type of **media** is to be used **depends** on the **kind of learning activities**. For example, some media are more effective for verbal information than for psychomotor skills. Slides are more suitable for information whereas movies are for teaching psychomotor skills. There are more details on media in MES-102/Block 2, Unit 9.

To summarise, once the input has been determined, selecting the “Process” is determined by

- Identifying the instructional objective of the lesson.
- Selecting the appropriate methodology based on content, characteristics of learners, needs of the community and teaching style.
- Selecting the appropriate media.

The last component of curricular strategy is understanding the outcome of teaching and learning. This component is the **output** of the Input and the Process.

Output

The output of a teaching learning process is determining whether learning has taken place. This area of curriculum strategy is known as ‘assessment’ – a scientific way of measuring learning outcome. While identifying measuring devices for specific teaching-learning situations, we must keep two things in our mind – (i) the measuring devices we select must be appropriate for the objectives that they are intended for and (ii) a wide variety of measuring devices can be used in the process.

As a teacher, while assessing the students’ performance or the learning outcome, we need to concentrate on cognitive, affective and psychomotor domains. For this, numerous types of tests are available or, if necessary, we can develop new tests in the form of actual performances (essay, or one or more objective tests, viz., multiple choice, alternate response, completion, matching or re-arrangement etc). Each test has its own advantages and disadvantages. However, if properly planned, these can form good ways of measuring performance. We will now discuss, in a nutshell, the three domains mentioned above.

i) **Cognitive Domain:** The cognitive domain contains six levels: knowledge, comprehension, application, analysis, synthesis and evaluation. This was suggested by B.S.Bloom and is known as Bloom’s taxonomy of cognitive behaviour.

LEVEL 1: KNOWLEDGE

Knowledge is defined as the ability to recall. It is the lowest rung of the hierarchical ladder. All that is required of the learner is information.

LEVEL 2: COMPREHENSION

Comprehension is the lowest level of understanding. The learner can make use of the information he acquires on the first level by interpreting in his own words, by translation from one form of symbolism to another (verbal to mathematical).

LEVEL 3: APPLICATION

The ability to apply an abstract concept, whether a hypothesis, a principle or a law to a new situation calls for a higher level of understanding of the information.

LEVEL 4: ANALYSIS

Requires the ability to break down information into its separate parts so as to understand the relation the parts. Analysis is a higher level of understanding than comprehension because it is concerned with content and form while the latter is concerned with content alone.

LEVEL 5: SYNTHESIS

Synthesis is the bringing together of many parts of knowledge to form a unique whole. Synthesis in many ways is a form of creativity. Its value lies in the unique production offered by the learner.

LEVEL 6: EVALUATION

Evaluation is the ability to make judgements on the basis of given criteria.

A Teacher uses this taxonomy when

- Selecting Objectives
- Asking Questions
- Planning Activities
- Giving Tests

Tabular summary of cognitive domain with examples

Knowledge: Recall of data, without necessarily understanding, using or changing it	Examples: Recite a poem, Quote prices from memory to a customer. Knows the safety rules. Keywords: defines, describes, identifies, knows, labels, lists, matches, names, outlines, recalls, recognizes, reproduces, select, states.
Comprehension: Understand the meaning, translation, interpolation	Examples: Rewrites the story in your own words. Explain in one's own words the steps for refining the iron ore. Translates an equation into a computer spreadsheet. Keywords: comprehends, converts, defends, distinguishes, estimates, explains, extends, generalizes, gives examples, infers, interprets, paraphrases, predicts, rewrites, summarizes, translates.
Application: Use a concept in a new situation or unprompted use of an abstraction. Applies what was learned in the classroom into novel situations in the workplace.	Examples: Use the log tables to do a trigonometry problem. Use a manual to calculate an employee's vacation time. Keywords: applies, changes, computes, constructs, demonstrates, discovers, manipulates, modifies, operates, predicts, predicts, prepares, produces, relates, shows, solves, uses.
Analysis: Separates material or concepts into component parts so that its organizational structure may be understood. Distinguishes between facts and inferences.	Examples: Troubleshoot a piece of equipment by using logical deduction. Recognize logical fallacies in reasoning. Gathers information from a department and selects the required tasks for training. Keywords: analyzes, breaks down, compares, contrasts, diagrams, deconstructs, differentiates, discriminates, distinguishes, identifies, illustrates, infers, outlines, relates, selects, separates.
Synthesis: Builds a structure or pattern from diverse elements. Put parts together to form a whole, with emphasis on creating a new meaning or structure.	Examples: Write a company operations or process manual. Design a machine to perform a specific task. Integrates training from several sources to solve a problem. Revise and process to improve the outcome. Keywords: categorizes, combines, compiles, composes, creates, devises, designs, explains, generates, modifies, organizes, plans, rearranges, reconstructs, relates, reorganize, revises, rewrites, summarizes, tells, writes.

Evaluation: Enables to make judgements on the basis of given criteria. The ability to judge the value of material (statement, novel, poem, research report) for a given purpose. The judgements are to be based on definite criteria. These may be internal criteria (organization) or external criteria (relevance to the purpose) and the student may determine the criteria to be given them.

Example: literary criticism of a poem or a novel.

Keywords appraise, ascertain, choose, compare, conclude, contrast, criticize, decide, defend, describe, discriminate, explain, interpret, justify, relate, resolve, summarize, support, validate, write (a review)

Activity

Practice labeling each of the sentences below at the correct level of Bloom's Taxonomy of the Cognitive Domain:

1. Using a questionnaire, survey the awareness level on HIV-AIDS in the college campus
2. Using copies of the constitutions of America and India, compare the two documents.
3. What could be a different ending to the story of the Thirty Crow?
4. Write a question for each level of the taxonomy.
5. Why is it important for children to learn tables? Justify your answer.
6. Develop a proposal clearly stating the hypothesis and research method you will select to proceed.

ii) **Affective Domain:** Assessment of a student's affective domain is not easy because it is associated with his/her attitudes, values and feelings that cannot be gauged easily. Personal feelings and beliefs of the student can remain undisclosed. Achievement of Instructional Objectives in the affective domain is difficult to measure compared to the Cognitive and Psychomotor domains. Bloom's Taxonomy of affective domain contains five levels: receiving, responding, valuing, organization and characterisation by value.

LEVEL 1: RECEIVING: is the willingness to receive or to attend to particular phenomena or stimuli in the domain of feelings or emotions. Receiving has been actively attending. Responding indicates the desire that a student has become sufficiently divided into three subcategories: awareness, willingness to receive, and controlled or selected attention.

LEVEL 2: RESPONDING: refers to active participation on the part of the student. The student is sufficiently motivated not to just be willing to attend, but is involved in or committed to a subject, activity, emotion etc., so as to seek it out and gain satisfaction from working with it or engaging in it.

LEVEL 3: VALUING is when the student sees worth or value in the subject, activity, assignment, etc. An important element of behavior characterized by valuing is that it is motivated, not by the desire to comply or obey, but by the individual's commitment to the underlying value guiding the behavior. Learning outcomes in this area are concerned with behavior that is consistent and stable enough to make the value clearly identifiable.

LEVEL 4: ORGANISATION is the bringing together a complex combination of values, possible disparate values, resolving conflicts between them, and beginning to build an internally consistent value system. The individual sees how the value relates to those already held or to new ones that are coming to be held. The integration of values is less

than harmonious; it is a kind of dynamic equilibrium that is dependent upon salient events at a specific point in time.

LEVEL 5: CHARACTERISATION BY VALUE: Internalization of values has a place in the individual's value hierarchy. The values have controlled one's behavior for a sufficiently long period of time to develop a characteristic "life style." The behavior is pervasive, consistent, and predictable.

iii) **Psychomotor Domain:** The psychomotor domain includes physical movement, coordination, and use of the motor-skill areas. Development of these skills requires practice and is measured in terms of speed, precision, distance, procedures, or techniques in execution.

The best way to evaluate this domain is a student's actual performance in the classroom. As teachers, certain evaluative or judgemental skills must be used when students are asked to demonstrate certain perceptual motor skills. These skills may be associated with factors like speed, originality and quality. Criteria for judgement must be communicated to the students in advance. There are seven major categories listed in the Psychomotor Domain.

Tabular summary of Psychomotor Domain with examples

Perception: The ability to use sensory cues to guide motor activity. This ranges from sensory stimulation, through cue selection, to translation.	Examples: Detects non-verbal communication cues. Estimate where a ball will land after it is thrown and then moving to the correct location to catch the ball. Adjusts heat to stove to correct temperature by smell and taste of food. Adjusts the speed of the car by sensing the traffic flow on the road.
Set: Readiness to act. It includes mental, physical, and emotional sets. These three sets are dispositions that predetermine a person's response to different situations (sometimes called mindsets).	Keywords: chooses, describes, detects, differentiates, distinguishes, identifies, isolates, relates, selects. Examples: Knows and acts upon a sequence of steps in a manufacturing process. Recognise one's abilities and limitations. Shows desire to learn a new process (motivation). NOTE: This subdivision of Psychomotor is closely related with the "Responding to phenomena" subdivision of the Affective domain.
Guided response: The early stages in learning a complex skill that includes imitation and trial and error. Adequacy of performance is achieved by practicing.	Keywords: begins, displays, explains, moves, proceeds, reacts, shows, states, volunteers. Examples: Performs a mathematical equation as demonstrated. Follows instructions to build a model. Responds hand-signals of traffic police while driving.
Mechanism: This is the intermediate stage in learning a complex skill. Learned responses have become habitual and the movements can be performed with some confidence and proficiency.	Keywords: copies, traces, follows, react, reproduce, responds. Examples: Use a personal computer. Repair a leaking faucet. Drive a car. Keywords: assembles, calibrates, constructs, dismantles, displays, fastens, fixes, grinds, heats, manipulates, measures, mends, mixes, organizes, sketches.
Complex overt response: The skillful performance of motor acts that involve complex movement patterns. Proficiency is indicated by a quick, accurate, and highly coordinated performance, requiring a minimum of energy. This category includes performing	Examples: Maneuvers a car into a tight parallel parking spot. Operates a computer quickly and accurately. Displays competence while playing the piano. Keywords: assembles, builds, calibrates, constructs, dismantles, displays, fastens, fixes,

without hesitation, and automatic performance. For example, players are often utter sounds of satisfaction or expletives as soon as they hit a tennis ball or throw a football, because they can tell by the feel of the act what the result will produce.

Adaptation: Skills are well developed and the individual can modify movement patterns to fit special requirements.

Origination: Creating new movement patterns to fit a particular situation or specific problem. Learning outcomes emphasize creativity based upon highly developed skills.

grinds, heats, manipulates, measures, mends, mixes, organizes, sketches. NOTE: The key words are the same as Mechanism, but will have adverbs or adjectives that indicate that the performance is quicker, better, more accurate, etc.

Examples: Responds effectively to unexpected experiences. Modifies instruction to meet the needs of the learners

Keywords: adapts, alters, changes, rearranges, reorganizes, revises, varies.

Examples: Constructs a new theory. Develops a new and comprehensive training programming. Creates a new gymnastic routine.

Keywords: arranges, builds, combines, composes, constructs, creates, designs, initiate, makes, originates.

Teacher as a curriculum practitioner

Teaching is like cooking in a way. It is a deliberative activity in the sense that, through conscious deliberation or reflection, we can always improve the process. There is no single formula to become a "good teacher". A good teacher is never satisfied with only the teaching; rather he/she is always concerned about its appropriateness and success. The quality of teaching depends partly on your own judgement, your students' changing needs and the process or instructional strategies employed by you. Certain generalisations on teacher performance can be made under the following headings:

Management efficiency

Teachers are in charge of the classroom and managerial skills are necessary to keep the class focused on what is being taught, maintaining discipline consistently and in a fair manner and to ensure the reliability and validity of evaluation. The all-round development of the students is also the responsibility of the teacher.

Congenial learning environment

Adequate workspace and a pleasant environment for learning undoubtedly motivate the students and this in turn helps in the students' achievements. There are many Things we can do to create a pleasant setting for the students to learn, by using variety of media and the activities to be done at the post lesson session; physical condition in terms of seating arrangements, lighting, ventilation, etc.; and by making the announcements particularly on administrative or personal matters, without affecting the normal academic atmosphere of the class.

Human relations

Most of us generally think that our job in the classroom is just to teach, without giving any attention to the other conditions for teaching. Lashley (1981) has suggested four different generalizations about classroom management behavior. Firstly, the effective teacher develops and implements a workable set of classroom rules. Secondly, a good teacher structures and monitors the classroom in a manner that minimizes disruptive behavior. Thirdly, an efficient teacher quickly defines and, quickly and consistently, responds to inappropriate behavior. Lastly, an effective teacher couches the response

to in appropriate behavior in a tone that does not denigrate the students at whom the response is directed.

Most importantly, the teacher establishes a state of need (or desire) within the student that activates him/her to do something to satisfy that need (desire). This may simply be called motivation in the classroom.

Motivation is affected by five variables:

- **FEELING TONE**
 - a. The physical and psychological classroom environment (rapport) created by the teacher.
 - b. It includes the teacher's tone of voice, use of humour, using student's names and ideas, verbal reprimands, etc.
 - c. It may be POSITIVE (most powerful encouragement), NEGATIVE (needed at times to correct misbehaviour and redirect learning) or NEUTRAL (least effective, attitude of not caring).
- **LEVEL OF CONCERN**
 - a. The degree to which tension or anxiety is brought into the classroom by the teacher, can affect the level of student motivation. If these are too high, the student develops a mental block and cannot concentrate on the task. If adequate, it helps the student to focus on the task. If too little, the student has little motivation to perform.
 - b. Teachers raise the level of concern by setting specific expectations, requiring completion of tasks, setting high standards for grading and making it clear that all students are expected to respond/participate.
- **INTEREST** in students is created when the lesson has conceptual meaning to him/her. Novel approaches, vivid visual and verbal images and experiences cause the students' minds to "hook on" to the lesson.
- **SUCCESS**
 - a. Motivates students to keep trying to aim higher.
 - b. A consistent and long-term pattern of failures breeds further failure.
 - c. To promote success, the teacher should help the students to set a reasonable target for themselves, break learning into small segments, and provide positive feedback on what is correct.
- **KNOWLEDGE OF RESULTS**
 - a. Immediate and specific feedback motivates students.
 - b. It may be verbal, answers to quizzes, answers written on board, correction by students etc.

Self-learning: Promoting self-learning through setting tasks which will be evaluated. Some examples of such tasks are: making models, maintaining diaries of observations, simulating experiences, conducting interviews, researching a topic in the library, etc.

Instructional planning

Instructional plans must be constantly remodeled and redesigned, depending on the students' levels, readiness for group work, length of the content and the time period available for instruction and evaluation, for effective learning to take place. The teacher must be vigilant to ensure that his/her plans bring about the maximum amount of learning in the given context of the classroom. Please refer to Unit 10 Block 3 for a detailed section on Action Research.

L.W. Aderson (1982) suggested highlights on instructional planning that effective teachers must possess:

- Know their students
- Assign appropriate tasks to their students
- Orient their students to the learning task
- Monitor the learning progress of their students
- Relate teaching and testing, to testing what they teach
- Promote students' involvement and engage them in the learning process
- Provide continuity to their students so that their learning tasks and objectives are built on one another, and
- Correct students' errors and clear doubts.

Set a learning model: The teacher himself/herself must model the process of good learning. This includes keeping up with recent trends and research in your subject and sharing the process of learning you have used with the students.

Summary

Curriculum transaction is a crucial stage in the overall curriculum development process, especially in the higher education stage.

- The fundamental issue of how to integrate the content inputs with teaching-learning processes has been covered. For this, a need has been identified to analyse curricular contents with reference to three important components of instructional content i.e., facts, concepts and generalizations. When facts are linked with direct observation of an event, it is concept that emerges due to the classification of factual data, and when these are expressed as statements, they become generalizations.
- Once content has been designed, the next step is to divide it into manageable units. Three essential components of content are (i)scope which refers to the breadth and range of contents to be covered, (ii)focus, which lays emphasis on the contents, and (iii)sequence, which refers to the order of arranging the content input.
- Once units are designed for presentation, some suitable modes of presentation have been explained. We have also identified some important criteria for selection of inputs for instructional strategies.
- We have discussed certain models of teaching and on how to select the different media useful for teaching.
- The input-process-output model on which the entire curriculum transaction process leans has been briefly presented.
- We have highlighted the role of the teacher as a curriculum practitioner and brought out certain facets that will help improve the quality of teaching.

Suggested readings

Reference: Erickson, H. Lynn. (1995) *Stirring the Head, Heart and Soul: Redefining Curriculum and Instruction*. California: Corwin Press Inc.

Website

http://www.tafe.sa.edu.au/vet_div/irsi/best_prac/htm/undrstnd/undtheo/thconcor/cptcr.html.

Curriculum Evaluation

Introduction

The earlier units of this block dealt with curriculum development and its transaction in higher education. Curriculum planning and development of curricular processes is incomplete without curriculum evaluation. It is the process by which the effectiveness of curriculum in terms of goals and what has actually been achieved is measured. Monitoring of student progress is conducted midway to ensure that teachers are meeting instructional objectives in a timely fashion. Teachers will be responsible for the function of monitoring. Evaluation comes when the curriculum has been completed. This is done through a multi-pronged method to assess whether the content and methodology has resulted in students having acquired the necessary understanding or skills. Teachers need to constantly ask themselves if students are meeting the goals of the curriculum.

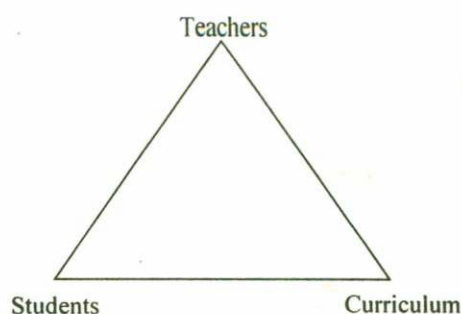
A system for periodic reviews of the implementation of each initiative must be developed, involving communication of results, updating and revision. Is the change working in the way it was envisaged? To what degree? What is the other issue affecting its success?

Learning outcomes

By the end of the unit, you should be able to

- define curriculum evaluation in the context of higher education;
- explain the different stages of curriculum evaluation in the curriculum development process;
- analyse different needs, sources and aspects of curriculum evaluation at the higher education level; and
- suggest how to obtain evaluative information.

Curriculum evaluation defined





Broadly, **curriculum** is a system of **learning experiences deliberately designed and transacted** for realising certain **goals**. As for **evaluation**, it is a **systematic process of determining and appraising the proficiency level** of a system or practice. The proficiency level is judged on what the system or practice has accomplished in comparison to what it was supposed to achieve in the light of its objectives.

How does one assess the viability of a curriculum system? To define it simply, it is the measurement of levels of knowledge the student has acquired after completion of the curriculum. Curriculum evaluation is mainly the determination of the extent to which the instructional objectives have been achieved. Evaluation takes place at the end of the curriculum transaction cycle – usually annually. As evaluation is a post event phenomenon, good curriculum management demands periodic monitoring which acts like a guided missile system to keep the curriculum on target. This can take place while the course is in progress with the help of monitoring tests to determine the effectiveness of instruction of the student.

Curriculum evaluation, thus involves systematically appraising and measuring the appropriateness and effectiveness of learning experiences at a particular level. A systematic analysis of the course gives an idea about the selection and sequence of content, the choice of teaching and assessment methods. The main aim of evaluation is to better the course for students of the future.

Stage	Evaluation process
Goal-specification	To identify the desired changes which are prepared to be brought about - the level of achievement or behavior pattern, cultural values, social forces, etc. and to assess their feasibility in the programme. (Refer to Unit 13)
Planning	To examine the adequacy of objectives, contents and teaching-learning strategies and their sequencing, and the reading, reference materials and assessment procedure. (Refer to Unit 13)
Validation	● To examine the appropriateness of the procedures adopted for the validation of the curriculum. (Refer to Unit 14) ● To assess the sufficiency of steps taken to collect evidence through observation, judgement and taking the opinions of experts, fellow teachers and students.
Field testing	Selecting a sample group, gathering information about the programme and its interaction with other topics linked to it. (Refer Unit 14)
Regular monitoring	● Techniques involved in implementation ● Researching the need for changes to increase efficiency. ● Suggesting remedies if necessary to reach intermediate goals.

Figure 1 Stages of curriculum evaluation

The most important objective of curriculum evaluation is to judge the effectiveness of the curriculum right from goals upto the assessment procedure. As a practice, the tendency is to divide the programme into components and each one is assessed. The entire programme is evaluated at completion.

Need for evaluation

If success of the programme must be judged, evaluation is a must. Several aspects of the programme, such as the suitability of each component, the sequencing, the input-process-output must be judged. Evaluation serves several purposes.

To improve an existing programme

Parents and students often question the relevance of a programme, particularly at the higher education level, on the basis of its adequacy to meet academic needs, and gain employment. Dropouts from colleges and universities have become fairly common. Hence, there is an increasing need for evaluation of existing programmes. Teachers often feel that advancement of knowledge, upgradation of curriculum and teaching in an interesting manner motivates students. It is essential for the teacher to evaluate what exactly will motivate her students because what s/he may consider as interesting may not be so for the students.

To examine the impact of the programme

When innovations are made in the course contents or teaching-learning strategies at the higher education level, it is imperative to ascertain the impact of these changes on student motivation and learning. With recent technological advancements, innovations like computer based training and introduction of multimedia in teaching-learning strategies have become fairly common at the higher education stage. The effect of these on student behavior, teacher's motivation and learning curves must be evaluated.

Overall validation of the programme

This section has been covered in detail in Unit 14 Block 4. Subject experts need to validate the course contents by thoroughly examining the published objectives, course outlines, laboratory manuals (if any), previous examination papers and assignments etc.

Collecting evidences by the teacher for self-evaluation

Once the teacher has evaluated his/her students, and through that data establishes the usefulness of the course, s/he needs to seek reactions of the students to the course and the methodology. This will make it fairly easy for him/her to evaluate the quality of teaching. Self-evaluation helps a teacher to assess his/her own proficiency in organizing course content and adjusting content to suit the needs and capabilities of the students.

Sources of evaluation

For curriculum evaluation, the evaluator can collect information from these sources: students, self, peer groups and professional evaluators.

Students: Curriculum can be evaluated by students, either those who have completed the course or those who are still studying. Evaluation can be very helpful in giving the correct picture of whether the course is helpful in providing job opportunities to students or not. Students are the best source in assessment of the need and importance of a particular programme. The curriculum evaluator should ideally ascertain the views of earlier and current students regarding the overall implications of the programme.

Self: The evaluator himself/herself plays a major role in the curriculum evaluation process. For this purpose s/he has to be definite about whether evaluation is being undertaken as part of an accreditation exercise or for the improvement of the teaching learning strategies. At the beginning an evaluator should ask himself/herself what the prerequisites, objectives, content, required reading, and method of assessment of a particular programme are. This would definitely help him to indicate the type of materials, which should be made available to students or even to suggest the required measures for student satisfaction with regard to the course.

Peer groups (students and teachers): Many times, students and teachers will openly discuss the problems and difficulties within their peer group rather than the teacher.

Peer groups therefore can be a major help to evaluators. The views of a group can help the evaluator to modify curriculum.

Professional evaluators: Experts in the particular field can give advice in teaching and designing a programme. They are also the best people to give an unbiased opinion on the course content and the methodology. Lately, a lot of professional bodies and research institutions are entering the foray in helping universities to evaluate their programmes.

Self-assessment

1. *Take up a specific course you are teaching in your institution. What sources would you like to engage for the improvement of the course? Identify the information you are seeking by way of evaluation.*

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Aspects of evaluation

This section focuses on the **components** and **aspects** of an educational programme that need to be evaluated.

Goals and objectives

Each organization and institution has its mission and vision based on the values, trends and forces prevailing in society. Before a university develops any programme on any subject, the focus is on the goals, the overall framework of the course and social trends. Evaluation of the goals is the prime task of the evaluators. Goals could be many such as communication, critical thinking, occupational competence, perception of nature and environment, economic understanding, social awareness, responsibilities of citizenship, self-understanding, value clarification, etc.

The curriculum planners plan the instructional objectives after having arrived at the goals of the programme. The objectives are aimed at fulfilling the goals. Evaluation of instructional objectives will include feasibility studies on how far these objectives have been clearly stated, how they relate to the students at a particular level of education and social background. Questions such as – is it worthwhile to increase the level of the course or should we increase its interrelation with other subjects? Evaluation of student achievement and related reaction to the prescribed course are all important focus areas of the proper assessment of goals and objectives of a particular programme or course.

Self-assessment

2. *For a course that you teach prepare to examine any one objective for feasibility as described above. Lay down criteria which will help you determine its feasibility vis-à-vis*

- *students;*
- *depth of content to achieve it;*
- *interrelatedness to other subjects*

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Prerequisites

By prerequisites, it is meant the evaluation of both students' and teachers' knowledge, skills and values that they possess even before they have enrolled for the course. This essentially implies that the existing cognitive, affective and psychomotor abilities of both student and teacher are evaluated to accordingly examine the feasibility of the learning aids and learning strategies in terms of its effectiveness to achieve the specified objectives.

Content

Course content of a programme is primarily based on the discernment of the requirements of its instructional objectives and the consultation of subject matter specialists. It is necessary to seek a wide representation of views on the relevance and probability of the programme in achieving the course objectives. Other reasons for evaluation of course content are:

- to validate the relevance of content to objectives;
- to make sure the course content is up-to-date and incorporates the latest findings and studies in the subject;
- to verify whether the content is suited to the cognitive development of the students;
- to evaluate the sequence of the content and find out if it is balanced;
- to evaluate the organizational structure of the content.

Processes

Process in the curriculum development refers to techniques involved in transaction of content. This has been covered in detail in Unit 15.

Evaluation of teaching-learning strategies/process/methodology essentially means students' interest, participation and desired communication between students and teachers. **Processes are not simply techniques of teaching adopted by teachers; they are the means to modify positively the behavior of the students using certain structured solutions, involving the use of instructional materials.**

In evaluating teaching inputs and strategies, one should start with evaluating to what extent the strategies meet the objectives. Secondly, it is necessary to investigate the time taken to complete a learning process and the resources required to do so. Thirdly, evaluation of the workableness of strategies must be looked at closely in real classroom situations. Last but not the least, a realistic evaluation must be made of the capabilities of the teacher to put to work the strategies for ensuring the success of the programme.

Self-assessment

3. *For a piece of content that you teach using a pre-planned process, put down your assessment of its efficacy. Check your assessment by:*

- *informally interviewing a representative sample of students;*
- *by assessing student performance on a test.*

Outcome and expectations

Outcome in terms of curriculum development means the consequence of the programme. There are several categories of outcomes: **short term** and **long-term** outcome; intended and unintended outcome; and also behavioral outcomes one exhibits. Broadly speaking, educational evaluation is focused on the short term because it is concentrated on those

who have just completed a programme. Long-term evaluation is far more difficult and time consuming besides being diluted by the passage of time. The evaluation of the **intended** and **unintended** outcome varies with the nature of the programme and the availability of tools. For evaluation of behavioral changes, we should try to distinguish the types into cognitive, affective and psychomotor. (Details of this have already been covered in Unit 15.) This may help us in selecting appropriate tools to be adopted for a particular type of outcome to be evaluated. (Refer also figure 3 in unit 14)

Linkages

Another ambit of course evaluation is to identify the **intra** and **inter course linkages**. Take for example the subject history – it may include a different set of courses like Ancient Indian History, Medieval History, Modern History, etc. The contents of these courses are supposed to be organized with a definite logic. The courses are to be presented and ordered according to the difficulty level, and in sequence. So, intra course linkages can be identified through finding out logical sequences and the order of presentation of contents of a particular course. In contrast, when one tries to find out the links and logical presentation of a set of courses in a particular programme, it is referred to as inter course linkages. It is important to know both types of linkages while undertaking a course evaluation. For instance, in an MBA programme the course content on ‘Strategic Business Management’ is dependent on other courses such as Marketing, Production and Personnel Management. So the evaluator would assess whether these prerequisites have been taken care of before the course on Strategic Business Management is sequenced in the MBA Programme.

Assessment

Briefly, assessment is student performance evaluation. Many strategies have been used to evaluate student performance – the basis of choice is directly linked to course content and the process. Some of these are through assignments, workshops, seminars, internal tests, group discussions, field trips, project work and term exams. These are a few examples of student evaluation methods most commonly adopted.

References

While undertaking evaluation, if references have been used in the course material, we should focus on two main aspects: their adequacy and their availability. The course evaluator needs to examine whether the references are adequate and cover the entire material presented in the text. Also, the references that have been cited in the text must be easily available and accessible to both teachers and students.

Obtaining evaluative information

The method of obtaining evaluative information is entirely determined by the purpose of evaluation. In this section, you will be introduced to three methods:

Subjective judgement: The teacher gives a subjective perspective while evaluating a course or programme. Questions a teacher asks of himself/herself can throw considerable light on evaluation, such as: What are the most important contents I expect my students to gain from this course? What can my students do to achieve their goals? How can the students develop the knowledge, skills and attitudes listed as objectives of this course? Do the objectives and the content match? Can I give a reason why each item is necessary for attaining the knowledge and the skills that I want the students to achieve? Have I given my students enough guidance by way of lists and references? Am I satisfied that the system of assessment, which is used in this course, represents

an adequate indication of each student's attainments of goals? Apart from these, a teacher should take feedback from his/her colleagues by interviewing them. The purpose of the interview is to give him/her an evaluation on the different aspects of the course rather than a professional judgment on the same.

Measures of student achievement: In recent times, measuring student achievement has become a valuable method of obtaining evaluation information. Attempts have been made to find out the superiority of one method over another by comparing student performances at different levels. In experimental research, attempts are being made to compare students' performances before and after introduction of a course. Experts say that this may not be a foolproof method of evaluation for higher education as students are affected by extraneous factors. Similarly, the viability of using tests to measure student performance as a direct measure of the effectiveness of a course or to judge a course by the success of its past students has not been proved. A careful plan of continuous comprehensive student evaluation, qualitatively and quantitatively, would definitely be an important source for curriculum assessment. (Refer unit 14 for a description on Continuous Comprehensive Evaluation).

Survey of student opinion: While this has been covered earlier in detail in the same unit, the student is a very important source for obtaining evaluative information. Students' opinions on the adequacy and applicability of the different components of the curriculum will help the planners make useful modifications in the future. The questionnaire format is the most common evaluative method used for students. The next section also deals with actively involving students in the programme evaluation process.

Participatory programme evaluation and its characteristics

The general evaluation approach is that of a Practical Participatory Evaluation (P-PE), the primary aim being to generate knowledge useful for program decision making and development. Two key elements define participatory evaluation in general:

Evaluation: Systematic inquiry for the purpose of making judgements of the merit or worth of the programme or supporting programme decision making.

Participation: Evaluation involving trained evaluators working in **partnership** with non-evaluator stakeholders, those with an identifiable interest or stake in the programme and/or its evaluation. Whereas evaluators bring to the partnership knowledge and expertise with evaluation logic and methods, other participants bring their understanding of the programme being evaluated and the context within which it is being implemented.

Despite the present interest in doing *useful* evaluation, P-PE also carries as secondary yet important justifications the potential to enhance the meaning and credibility of evaluation findings and to empower non-evaluator participants to continue with ongoing inquiry-based activities.

P-PE is distinguishable from other forms of collaborative inquiry in following ways:

- Control of technical evaluation decision making is balanced among evaluator and non-evaluator stakeholders.
- The evaluation is fairly inclusive involving as participants members of non-evaluator stakeholders groups: Normally, it is the case that non-evaluator stakeholders are primary users of evaluation – those with a vital interest in the programme and/or its evaluation. In some instances, others with a less vital stake (programme sponsors, programme beneficiaries) are included as participants.

- There exists minimal conflict among the interest of participants: Conflict that may arise as a consequence of the contentiousness of the programme and/or the uneven distribution of power and privilege among participants is generally minimized because of the participatory nature.
- The evaluation is relatively feasible and can be completed within a specified time frame: limits on the inclusiveness of the participatory approach will assist in preventing the evaluation from becoming unwieldy or unmanageable. Non-evaluator stakeholders bring a considerable amount of professional human resources to the outstanding tasks. Such resources will ensure feasibility.
- Non-evaluator stakeholders participate in virtually all technical phases of the evaluation process: In the present evaluation, tasks corresponding to planning, instrument development, data collection, analysis and interpretation and reporting will be divided among evaluator and non-evaluator stakeholders.

Process

The evaluative and non-evaluative members form a task force and shape the evaluation. Consideration is given to the purposes of the evaluation, specifically the questions it is intended to answer, intended audiences and identifiable stakeholder groups, programme logic or theory, potential sources of data and methods useful to answering the questions posed.

Evaluation questions: A preliminary list of issues and questions are generated and then reviewed after the members of the evaluation task force identify all stakeholder groups or audiences for the evaluation and their respective stake or interest in the programme or its evaluation. This exercise is expected to yield a set of evaluation questions such as:

- Is the programme meeting its stated objectives?
- Is the programme meeting the needs of participants/students? If not why not?
- Is the programme being implemented as intended? If not why not?
- Are some components or activities of the programme more potent or effective than others? If so, which?
- To what extent is the programme aligned with other similar programmes or courses?
- Is the programme cost effective?

Programme logic: Having agreed on the focus for the evaluation the task force has to fulfill the task of rendering the program logic or theory. A suggested sequence for the programme logic model is as follows:

- Student needs that the programme intends to address;
- intended inputs;
- intended activities;
- intended outputs;
- intended short-term outcomes;
- intended long-term outcomes.

The programme logic model guides the process of evaluation to answer the evaluation questions through identifying appropriate methods and corresponding data sources. Some of the methods that could be used are: case studies, document review, focus groups, questionnaires etc.

Self-assessment

4. For a course that you teach, draw up a programme logic model similar to the one given above.

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Using evaluative information

Evaluative information on the curriculum needs to be used by the evaluator to make adjustments and changes in the curriculum. Very broadly, evaluation results are used in three major directions of curriculum development:

Introducing changes in content: If evaluation reveals that content is not compatible with objectives, new content may be introduced or contents that do not match the objectives can be eliminated.

Improving teaching: If the course has been evaluated by the students as 'confusing' or 'inadequate', it is possible the methodology was not completely correct. It is completely up to the teacher then to refine his/her teaching strategies to suit the needs of the students. For instance, the lecture method in some areas can be replaced by group discussions or seminars or viceversa.

Assessing the need and scope for introducing new courses: As science, technology and information expand everyday, there is always the scope of introducing contemporary courses that can help the future students of universities find jobs that are in demand today. For instance, the dotcom boom a couple of years ago, saw a spate of institutions introducing courses in web technology and designing. Currently, the BPO (Business Processing Outlets, such as call centers) sector is much hyped and there is a lot of scope for employment in call - centers. Institutions of higher learning, such as management institutes, have incorporated this into their curriculum realizing the need of the hour.

Summary

Curriculum evaluation deals precisely with the systematic process of determining and appraising the proficiency level of the learning experiences of a particular level of studies. It also helps in undertaking a systematic analysis of the course, its prerequisites and its place in the efficiency of the programme as a whole, by evaluating all its contents. The purpose of curriculum evaluation is to give a direction to improve the existing programme and to examine its overall impact on student motivation and learning. It helps in reorganizing course content and the teaching learning strategies in a more effective manner. Self evaluation and overall validation are the ways and means of evaluation. Students, professional evaluators, the peer group and the evaluator are other sources of evaluation. The components identified for evaluation are—goals and objectives, prerequisites like entry level knowledge, contents, processes, outputs, assessment procedures, references etc. The techniques for obtaining evaluation information could be varied – subjective judgement, measuring student achievement, generating student opinion, etc. Evaluative information can be used best by improving teaching learning strategies and for ensuring the introduction of new courses, etc.

Unit-end activities

1. Choose any course you are teaching presently at the university or intend to teach at an institution of higher learning. Collect the necessary information you require for evaluating the course with the help of the curriculum evaluation mentioned in this unit.
2. Does your study suggest that improvements need to be made in the curriculum, say by updating the course? If your answer is positive, suggest appropriate action to be taken immediately in this regard. If your answer is negative, give reasons and justify your stand.

Suggested readings

Cousins, J. B. (2003). "Utilization effects of participatory evaluation". In T. Kellaghan, & D. Stufflebeam (eds.) *International Handbook of Educational Evaluation*. (245-267), Boston: Kluwer.



It would be of interest for you to know that, for the purposes of career advancement, the UGC has recognized the PGDHE as being equivalent to one orientation programme for teachers from all disciplines except education and equivalent to two refresher courses for teachers from the discipline of education.

