

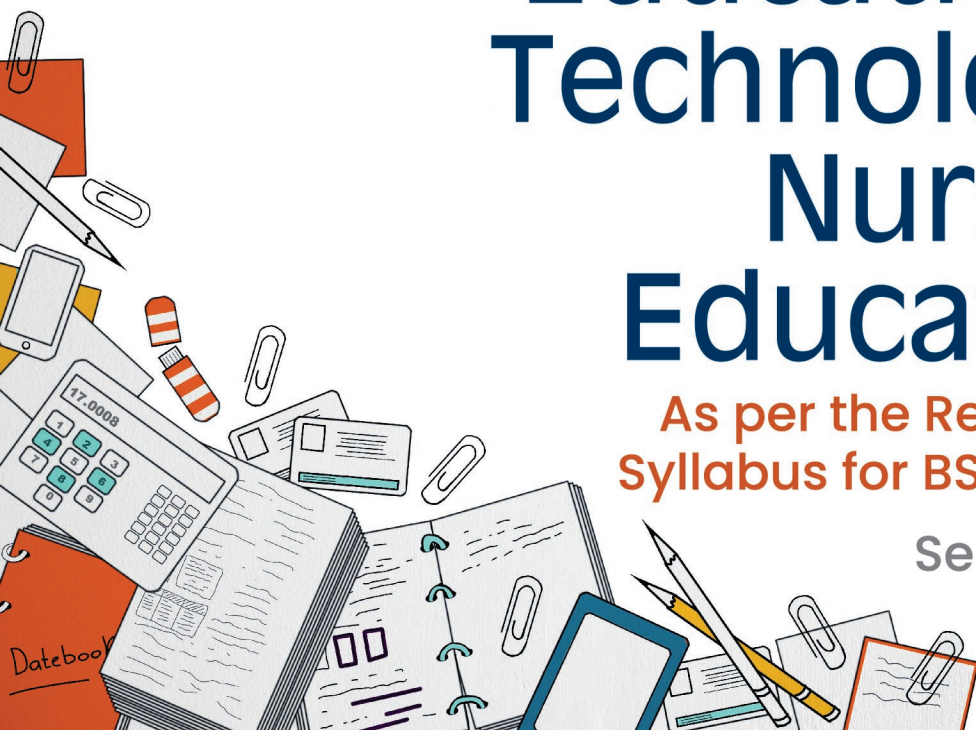
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Essentials of Educational Technology/ Nursing Education

**As per the Revised INC
Syllabus for BSc Nursing**

Semester V



R Sreevani



CONTENTS

1. Introduction and Theoretical Foundations

1

- Meaning and Definitions 1
- Nature of Education 3
- Aims of Education 5
- Agencies of Education 6
- Forms of Education 7
- Educational Technology 8
- Competency-based Education 11
- Transformational Education 14
- Relationship-based Education 16
- Educational Philosophy 19
- Historical Development of Education and Philosophy 20
- Philosophy of Nursing Education 27
- Teaching-learning Process 29
- Learning 31
- Learning Theories 43
- Latest Approaches to Learning 48
- Reflective Learning 52
- Scenario-based Learning 56
- Simulation-based Learning 59
- Blended Learning 61

2. Assessment and Planning of Curriculum

69

- Assessment of a Teacher 69
- Essential Qualities of a Teacher 70
- Teaching Styles 71
- Assessment of Learner 74
- Types of Learners 74
- Determinants of Learning 76
- Today's Generation of Learners and their Skills and Attributes 77
- Emotional Intelligence 78
- Motivational Factors in Learning—Personal Factors, Environmental Factors and Support System 81
- Curriculum 84
- Curriculum Design: Components and Approaches 87
- Curriculum Development 89
- Writing Learning Outcomes/Behavioral Objectives 97

Basic Principles of Writing Course Plan, Unit Plan and Lesson Plan

103

- Course Plan 103
- Unit Plan 105
- Lesson Plan 106
- Master Rotation Plan 110
- Clinical Rotation Plan 114

3. Curriculum Implementation**122**

- Teaching in Classroom and Skill Lab: Teaching Methods 123
- Classroom Management 123
- Classroom Communication 125
- Information Communication Technology Used in Education 128
- Teaching Methods Features, Advantages and Disadvantages 131
- Lecture Method 138
- Group Discussion Method 142
- Microteaching 146
- Simulation 151
- Demonstration Method 157
- Return Demonstration 160
- Symposium 161
- Panel Discussion 163
- Seminar 165
- Scientific Workshop 168
- Exhibition 170
- Conference 171
- Role Play 174
- Project Method 177
- Field Trips 179
- Self-directed Learning 182
- Computer-assisted Learning 185
- One-to-One Instruction 189
- Self-Instructional Module 191
- Team-based Learning 194
- Problem-based Learning 197
- Peer Teaching 202
- Journaling 202
- Debate 204
- Gaming 207
- Interprofessional Education 209

4. Teaching in Clinical Setting: Teaching Methods**220**

- Clinical Learning Environment 221
- Selection of Clinical Learning Experiences 225
- Practice Models/Models of Clinical Education 230
- Clinical Teacher 234
- Writing Clinical Learning Outcomes 237
- Practice Competencies for Clinical Experience 240
- Clinical Teaching Strategies 241

Clinical Teaching Methods/Strategies**243**

- Patient Assignment 243
- Clinical Conference 247
- Bedside Clinic/Bedside Teaching 249
- Nursing Care Study/Case Study 250

Case Study Format in Psychiatric Nursing**252**

- Nursing Rounds 258

- Concept Mapping 261
- Questioning 266
- Written Assignments 270
- Process Recording 272

5. Educational or Teaching Media

282

- Meaning and Definition 282
- Edgar Dale's Cone of Experience 283
- When to Use Audiovisual Aids 284
- Uses and Purposes of Educational Media 284
- Limitations of Media 286
- Components of Educational Media 287
- Principles of Audiovisual Aids 287
- Steps in Effective Use of Audiovisual Aids 289
- Types of Media 290
- Visual Aids 291
- Nonprojected Aids 291
- Projected Aids 306
- Moving Visuals 312
- Video Learning Resources 312
- Storage Devices 314
- Realia and Models (Objects, Specimen and Models— Three Dimensional Aids) 315
- Audio Aids/Audio Media 319
- Electronic Media/Computer Learning Resources 322
- Telecommunications (Distance Education) 330
- Mobile Technology 344

6. Assessment/Evaluation Methods/Strategies

355

- Purposes of Assessment/Evaluation 356
- Scope of Assessment 357
- Criteria/Characteristics for Good Assessment 357
- Principles in Selection of Assessment Methods 359
- Types of Assessments 360
- Problems in Evaluation and Measurement 364
- Barriers to Evaluation 365
- Guidelines to Develop Assessment Tests 365
- Methods of Assessment 365
- Assessment of Knowledge 368
- Long Answer Questions (Essay Type Questions) 368
- Short Answer Questions 372
- Multiple Choice Questions 373
- Assessment of Skills and Competencies 377
- Direct Observation of Procedural Skills 380
- Checklists 384
- Rating Scale 384
- Video Recording 386
- Written Communication 387
- Practical Examination 388
- Oral Examination 389
- Simulation 392

• Objective Structured Practical/Clinical Examination	392
• Self-assessment/Evaluation/Monitoring	399
• Peer Evaluation	400
• 360-Degree Evaluation	400
• Clinical Portfolios	401
• Clinical Logbook	401
• Assessment of Attitude	403
• Assessment Tests for Higher Learning	404
• Interpretive Questions	405
• Hotspot Questions	405
• Ordered Response or Drag and Drop Questions	405
• Assessment Blueprint	406
7. Guidance/Academic Advising, Counseling and Discipline	418
• Guidance	418
• Counseling	423
• Discipline and Grievance in Students	430
8. Ethics and Evidence-based Teaching in Nursing Education	435
• Ethics Review	435
• Value-based Education in Nursing	436
• Value Development Strategies	438
• Ethical Decision-making	439
• Ethical Standards/Codes of Ethics for Nurses of India	442
• Student-faculty Relationship	443
• Evidence-based Education Process and Its Application to Nursing Education	444
9. Emerging Trends in Health Care and Nursing Education	452
• Historical Perspective of Nursing Education in India	452
• Emerging Trends in Health Care in India	460
• Trends in Nursing Education	463
• National Nursing Midwifery Act, 2023	467
Annexures	473
• Annexure I: Model Course Outline	473
• Annexure II: Model Lesson Plan	475
• Annexure III: Master Rotation Plan	481
• Annexure IV: Seminar Feedback Format	482
• Annexure V: Workshop Evaluation Format	483
• Annexure VI: Proforma for Evaluating Case Study	484
• Annexure VII: Multiple Choice Questions Item Writing Template	485

Introduction and Theoretical Foundations

Chapter Outline



- ◆ **Education:** Meaning, Definitions, Nature, Aims, Agencies, Forms of Education
- ◆ **Educational Technology:** Definitions, Aims, Approaches, Scope of Educational Technology
- ◆ **Competency-based Education:** Meaning, Characteristics, Aspects, Principles, Benefits, Competency-based Education in Nursing
- ◆ **Transformational Education:** Meaning, Concepts, Principles, Benefits, Transformative Education in Nursing
- ◆ **Relationship-based Education:** Meaning, Components, Characteristics, Benefits, Relationship-based Education and Nursing Implications
- ◆ **Educational Philosophy:** Branches, Relationship between Education and Philosophy, Historical Development of Education and Philosophy, Types: Realism, Idealism, Naturalism, Pragmatism, Perennialism, Essentialism, Existentialism, Reconstructionism, Progressivism, Behaviorism, Eclecticism
- ◆ **Philosophy of Nursing Education:** Importance, Factors Influencing, Philosophy of Nursing Education
- ◆ **Teaching:** Definitions, Nature and Characteristics of Teaching, Principles of Effective Teaching
- ◆ **Learning:** Nature and Characteristics, Principles of Effective Learning
- ◆ **Teaching-learning Process:** Elements, Process, Role of Teacher, Barriers, Strategies to Improve, Maxims of Teaching
- ◆ **Learning Theories:** Importance, Types: Behavioral Theory of Learning, Cognitive Learning Theory, Social Learning Theory, Constructivism Learning Theory, Humanist Learning Theory, Connectivism Learning Theory, Transformative Learning Theory, Comparison of Learning Theories
- ◆ **Latest Approaches to Learning:** Experiential Learning, Reflective Learning, Scenario-based Learning, Simulation-based Learning, Blended Learning

Education is an essential process in human development which begins at birth and continues till death. It assures survival of the human race, maintains its intellectual and cultural tradition and helps in developing enlightened civilization for human well-being and economic development. During the earlier ages the individual required less learning to lead an effective life. With technological advancement and social innovation, both accumulated knowledge and skills increased tremendously. Therefore, the modern

individual requires more preparation through education for leading an effective life.

Education deals with the total process of human learning by which knowledge is imparted, faculties are trained and different skills are developed. Through education the individual develops abilities to adjust to the natural and sociocultural environments.

MEANING AND DEFINITIONS

- The word education is derived from the Latin words 'educare' and 'educere'.

Educare refers to 'to bring up' or 'to nourish', and 'educere' means to 'to bring forth' or 'to draw out'. Education means to lead out internal hidden talent of a child or person. An analysis of these words reveals that education aims at providing a child or learner a nourishing environment to bring out and develop the latent capabilities hidden inside him.

- ❑ The definition of education is influenced by the philosophies of great thinkers (**Box 1.1**). While one group of thinkers focuses on the spiritual liberation of the human soul, another group stresses on the development of inherent human potentialities, and another gives importance to the social and environmental aspects.

Definitions Focused on Spiritual Growth

This concept originated from the religious core of Indian ethos. Shankaracharya, Swami Dayanand, Swami Vivekananda belong to this category. These definitions stress the role of education in bringing out the divinity already existing in man and help him to realize himself as well as lead him to achieve salvation.

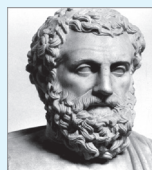
- ❑ **Shankaracharya:** Education is the realization of the cosmic self.
- ❑ **Swami Dayanand:** Education should develop in man those noble and divine qualities which enable him to tread the harsh path in the quest of truth.
- ❑ **Swami Vivekanand:** Education is the manifestation of perfection already in man.

Definitions Focused on Development of Potentialities

Socrates, Plato, Aristotle, Mahatma Gandhi belong to this category. These definitions reveal that the primary aim of education is to give an individual all those opportunities which help him in the total development of all his interests, abilities and human potentialities.

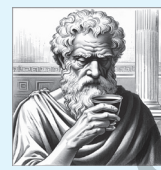
- ❑ **Socrates:** Education means the bringing out of the ideas of universal validity which are latent in the mind of every man.
- ❑ **Plato:** Education is the capacity to feel pleasure and pain at the right moment it

Box 1.1: Definitions of education



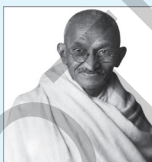
Aristotle

Education is the process of training man to fulfill his aim by exercising all the faculties to the fullest extent as a member of society.



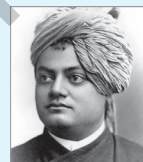
Socrates

Education means the bringing out of the ideas of universal validity which are latent in the mind of every man.



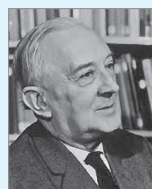
MK Gandhi

Education is a process for training of hand, head, and heart. It is all round drawing the best in child's to man's body, mind and soul.



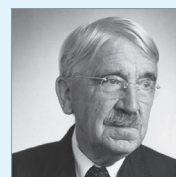
Vivekananda

Education is the manifestation of divine perfection already existing in man.



MJ Langeveld

Education is every interaction that happens in every association that occurs between adults with children is a field or a state where the educational work is in progress.



John Dewey

Education is all one with growing; it has no end beyond itself. Education is everything along with growth, education itself has no final destination behind him.

develops in the body and in the soul of the student all the beauty and all the perfection which he is capable of.

- ❑ **Aristotle:** Education is the creation of a sound mind in a sound body. Education

according to him, should develop the body, i.e., the physical capacities of the child and the mind which means his intellectual, emotional, moral and spiritual capacities.

- ❑ **Mahatma Gandhi:** By education, I mean an all-round drawing out of the best in the child and man-body, mind and spirit.

Definitions Focused on Social and Environmental Aspects

Kautilya, APJ Abdul Kalam, Redden and G Thomson belong to this category. These definitions suggest that education of an individual should emphasize his/her orientation to achieve the social goals.

- ❑ **Kautilya:** Education means training for the country and love for the nation.
- ❑ **APJ Abdul Kalam:** Education is one that fosters capacities such as spirit of enquiry, creativity, entrepreneurial and moral leadership which are central to nation building in a democracy.
- ❑ **Redden:** Education is the deliberate, systematic influence exerted by a mature person upon the immature through instruction, discipline and harmonious development of physical, intellectual, aesthetic, social and spiritual power of the human being according to individual and social needs.

Narrower and Broader Meaning of Education

- ❑ In a narrower sense education is limited to school, university, curriculum, methods of teaching, examination and teachers. It is believed that education starts as soon as the child enters the school and ends when he leaves it. Here education is measured in terms of degree or certification or promotion. In this context the education is confined only to a few specific, deliberate and planned efforts that have a bearing on the development of the individual.
 - Education is the process of educating or teaching —Webster
- ❑ In a broader sense education is actually a lifelong process, development from cradle

to grave and is not limited within the four walls of the classroom. It is the modification of behavior and experiences from different means of sources of education. It is believed that education is not only an instrument of social change but also an investment in national development. Such a view of education encompasses all life experiences.

- Education means both the acquisition of knowledge and experience as well as development of skills, habits and attitudes which help a person lead full and meaningful life in this world and to develop the wholesome personality. In a nutshell education is to develop the knowledge, skill or character.
- Education is the aggregate of all processes by which a person develops abilities, attitudes and other forms of behavior of practical values in the society in which he/she lives; the social process by which people are subjected to the influence of selected and controlled environment so that they may obtain social competence and optimum individual development.

NATURE OF EDUCATION

Education is a systematic process through which a child or a man acquires knowledge, experience, skill and sound attitude. The nature of education is presented in **Figure 1.1**.

- ❑ **Education is a lifelong process:** Education starts from the womb of the mother and continues till the tomb. It includes the effect of everything which influences human personality.
- ❑ **Education is a systematic process:** Education transacts its activities through a systematic institution and regulations.
- ❑ **Education is development of individual and the society:** Education consists of the influence involved in shaping the development of an individual. It helps in



Figure 1.1: Nature of education

the development of all those capacities in the individual which will enable him to control his environment and fulfil his responsibilities. It has possibilities of developing into a full-grown, matured, competent adult man or woman. Education is called a force for social development which brings improvement in every aspect in the society. Through education society reproduces itself passing on its main characteristics to the next generation.

- ❑ **Education is modification of behavior:** Human behavior is modified and improved through the education process. It can influence minds through dissemination

of new ideas and knowledge every time. Rightly educated individual minds can then consciously seek collective progress and improvement of the social interaction, emotional growth, physical awareness, aesthetic awareness and spiritual response.

- ❑ **Education is purposive:** Every individual has some goal in his life. Education contributes in attainment of that goal. There is a definite purpose underlined in all educational activities.
- ❑ **Education is a training, instruction and direction:** Human senses, mind, behavior, activities, skills are trained in a constructive and socially desirable way through education. It directs and instructs an individual to fulfill his desires and needs for exaltation of his whole personality.
- ❑ **Education is life:** Education is part and parcel of human life consisting of biological, sociological, spiritual and cultural aspects. Life without education is meaningless and like the life of a beast. Every aspect and incident needs education for its sound development. The whole life of an individual is education and it ceases only when he dies.
- ❑ **Education is continuous reconstruction of experiences:** Education reconstructs and remodels our experiences towards a socially desirable way. It is a means by which we transmit culture, norms, traditions and rules from one generation to the other. This is done so that the society can continue to exist. Education can be regarded as the society's cultural reproductive system.
- ❑ **Education helps in individual adjustment:** Through the medium of education man learns to adjust himself with friends, class fellows, parents, relations, neighbors, teachers, etc.
- ❑ **Education is balanced development:** Education is concerned with the development of all faculties of the child. It performs the functions of the physical,

mental, aesthetic, moral, economic, spiritual development of the individual so that the individual becomes a civilized person. It is a cumulative process of development of intellectual abilities, skills and attitudes all of which form our various outlooks and dispositions to action in life generally.

- ❑ **Education is a dynamic process:** Education is not a static but a dynamic process which develops the child according to changing situations and times. It always induces the individual towards progress. It reconstructs the society according to the changing needs of the time and place of the society. It is a dynamic instrument of change.
- ❑ **Education is a three-dimensional process:** The process of education consists of three poles—the teacher, child and the society.

The role of education is countless for a perfect society and man. It is necessary for every society and nation to bring holistic happiness and prosperity to its individuals.

AIMS OF EDUCATION

Educational aims are varied. It plays a different role in different fields. Some of the specific aims are:

- ❑ **Knowledge aim:** The aim of education is the acquisition of knowledge, skills and attitudes. It should help with certain skills to live in a society as a human being and a civilized one.
- ❑ **Vocational aim:** The aim of education is the development of social efficiency of the individual.
- ❑ **Character building aim:** Education should build character, strength, mind, expand intellect so that one can stand on one's own feet.
- ❑ **Complete-living aim:** Education should help the individual to fulfill the various needs and necessities of life like self-preservation, fulfilling necessities of life, rearing and bearing of children, performing civic responsibilities and utilizing his leisure time properly.
- ❑ **Harmonious development of personality aim:** Education is aimed at harmonious development of the child which includes physical, intellectual, social and spiritual aspects.
- ❑ **Democratic aim:** Secondary Education Commission (1952-54) stated that the aim of education is to develop democratic citizenship. Education is to train carefully the future citizens. It should provide capacity to think clearly, receptivity of new idea, clarity in speech and writing, true patriotism.

Since independence, various committees and commissions were appointed to lay down the aims and objectives of education in India. These commissions suggested aims of education as follows (**Figure 1.2**):

- ❑ Democratic citizenship by developing character, abilities in clear thinking, receptivity to new ideas, clarity in speech and writing, etc.



Figure 1.2: Aims of education

- ❑ Development of personality by overall development through art, music, dance, craft, cultural and literacy subjects in the curriculum.
- ❑ Vocational efficiency and increased productivity by equipping youth with appropriate scientific knowledge and technical abilities in a variety of vocational and professional areas.
- ❑ Development of leadership abilities to assume leadership responsibilities in social, political, industrial and cultural fields.
- ❑ Social and national integration through some kind of public education system and some form of obligatory national services.
- ❑ Art of living together in harmonious relationship with each other by developing interpersonal skills and adjustment abilities.
- ❑ Development of social, moral and spiritual values by including such subjects and by facilitating environment to practice these values.
- ❑ Keeping pace with the modern world by preparing an intellectually efficient and technically competent person and by giving sound basic education and higher education in accordance with scientific and technological advancement.

AGENCIES OF EDUCATION

An agency of education is a specialized institution or organization that directly or indirectly exercises educational influence on the child. Society developed a number of specialized institutions to carry out the functions of education. Among the agencies some are formal while the others are informal.

Formal Agencies

These are educational institutions or organizations which are established in the society with an aim to impart knowledge in a

specified time under a structured environment. These formal agencies have aims, objectives, specific curriculum, examinations, teachers and students under structured teaching and learning environment. Every aspect of education is planned in advance. They are called direct agencies influencing the learning and behavior of the individuals. Some of the examples of formal agencies are: schools, colleges, university, library, religious institutions, recreational clubs, etc.

Characteristics

- ❑ Imports knowledge and skills through systematic curriculum
- ❑ Focuses on time bound courses
- ❑ Attendance oriented
- ❑ Certified teachers with authority to teach
- ❑ Specified age guidelines to enter

Informal Agencies

These are not particular places or locations for imparting education. Individuals learn incidentally and naturally by their own initiative and effort. Education is provided to the individuals informally and unconsciously. These institutions exercise a great educative influence upon the individual indirectly and ceaselessly throughout their life. They are called indirect agencies influencing the behavior of the individuals. Some of the examples of informal agencies are: family, community, playground, cultural ceremonies, mass media—newspaper, radio, television, cinema, social gatherings, etc.

Characteristics

- ❑ Lack all formalities such as rules, regulations, systematization
- ❑ Grow up spontaneously
- ❑ Learners learn on their own
- ❑ No definite curriculum and well-thought methods of teaching
- ❑ No qualified and trained teachers
- ❑ No definite place for this education

Both agencies are equally important and depend on each other for success.

TABLE 1.1 Differences between formal, nonformal and informal education

Concepts	Formal education	Nonformal education	Informal education
Scope	Limited and narrow	Unlimited and vast	Unlimited and vast
Learner	Who are in a position to attend fulltime	Learners who dropped their education at school or college and want to improve their qualification	All individuals
Planning	Preplanned, direct and organized	Intentional and incidental	Not planned, indirect, incidental and spontaneous
Institution/place	Given in specific institutions	No specific institution involved—factory, open space, farm, library may be held at schools and colleges	No specific institution involved, provided by informal agencies such as home or community
Curriculum	Having defined curriculum	No fixed curriculum except in distance education	No fixed curriculum
Teacher	Provided by a qualified teacher	Provided by a qualified teacher	No specific teacher or qualified teachers are involved, takes place from day-to-day activities, experiences and living in the family or community
Period	Limited specific period	Life long process integrated with life and work	Not limited to specific period, it is a lifelong process
Discipline and rules	Strict discipline, well-regulated with rules	Without rigid rules and regulation	Without rigid rules and regulation
Age	Minimum age is prescribed	Intended for all ages	No age limit
Examples	Primary, middle, secondary, higher secondary level, undergraduate, graduate and postgraduate education	Social or adult education, distance education	Learning experiences from family, religious affiliation, peer group, friends, mass media and environment

FORMS OF EDUCATION

An individual acquires knowledge and experiences in many ways. Education can be provided in three different forms: formal, non-formal and informal (**Table 1.1**).

1. **Formal education** is a planned and structured type of education. Learning is carried out in specially built, purposely designed institutions such as schools, colleges and universities. The instructions are carefully planned and well-structured

through the use of syllabus, scheme of work, course outline, lesson plan and time tables. It is a highly structured program with prescriptive content to the curriculum. The instructor is a certified and qualified personnel. This type is also called as Western education. The main characteristics of formal education are:

- Institution based
- Chronologically graded
- Uniform
- Subject oriented
- Fulltime
- Learner oriented
- Focused on certification

2. **Nonformal education** is provided without a specific teacher, no written syllabus, no examination at any specific period. This type of education meets the learning needs of particular group of children, youths or adults. It includes various types of vocational, educational and socio-personal activities such as remedial, skill training, tailoring, automobile engineering, painting, carpentry, civic education, literacy programs for youth and adults outside the formal school system. The main characteristics of nonformal education are:

- Flexible
- Learner oriented
- Diversified in content and method
- Enriches human potentials
- Focused on skill development

3. **Informal education** also called traditional education system, does not have the formal education system. There is no teacher, classroom or curriculum. The child learns as he grows from one stage to the other. Learning is unconscious and involuntary. It includes learning experiences from family, religious affiliation, peer groups, friends, mass media and environment. The main characteristics are:

- Neither planned nor structured
- Learning is involuntary
- Unorganized learning

- Focuses on experiences
- No curriculum
- Does not end
- Practical knowledge

All these three types of education have their due place in the modern system of education. Each has its own merits and demerits.

EDUCATIONAL TECHNOLOGY

This is the era of information technology where the use of science and technology can be seen everywhere in our daily lives. It is instrumental in bringing efficiency, improvement and perfection in the process and product of human work. In the field of teaching-learning, science and technology helps to display added information in lesser time while making the process more interactive. Educational technology is often confused with technology in education or instructional technology.

Technology in education is a systematic application of relevant technological processes and resources in teaching with a goal to improve student's performance. It involves identifying the needs of students, applying technology in instructions and tracking their performance.

According to the Association of Educational Communications and Technology (AECT), instructional technology covers the processes and systems of learning and instruction and is a part of the educational technology. Educational technology includes other systems used in the process of developing human capabilities.

Educational technology is the implementation of appropriate tools, techniques or processes that facilitate the application of senses, memory and cognition to enhance teaching practices and improve learning outcomes.

Definitions of Educational Technology

- It is a form of detailed application of the psychology of learning to practical teaching problems. —**John P Dececco**

- Educational technology is the development, application and evaluation of systems, techniques and aids to improve the process of human learning.

—**Lucido and Borabo, 1997**

- Educational technology may be defined as the application of the laws as well as recent discoveries of science and technology to the process of education. —**SS Kulkarni**

- Educational technology is the application of scientific knowledge and learning and the conditions of learning to improve the effectiveness and efficiency of teaching and training.

—**GO Leith**

- Educational technology is the study and ethical practice of facilitating learning and improving performance by creating, using and managing appropriate technological processes and resources.

—**Januszewski and Molenda, 2008**

Aims

The main aim of educational technology is to enable an improved learning environment which in turn is meant to boost student outcomes.

Educational technology aims at maximizing educational effects by controlling various factors such as educational purposes, content, learning environment, teaching materials, behavior of students and teachers and interrelation between students and teachers.

Approaches/Types of Educational Technology

Lumsdaine in 1964 suggested three educational technology approaches: Hardware approach, software approach, system approach (**Figure 1.3**).

- **Hardware approach or first educational technology:** It is the application of physical and engineering technology in the teaching-learning process. In this hardware approach the emphasis is given to teaching accessories. It is concerned with electronic

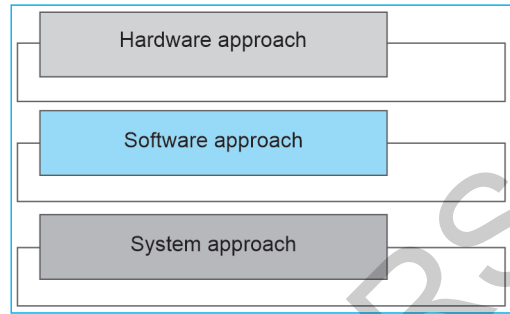


Figure 1.3: Lumsdaine's educational technology approaches

gadgets such as television, radio, teaching machines, closed circuit television, motion picture, epidiascope, liquid crystal display (LCD) and other projected media. By using hardware devices teachers can deal with larger groups of students to discourse on teaching-learning experiences.

- **Software approach or second educational technology:** It is the application of scientific research from physical sciences as well as from the social sciences particularly from psychology and sociology in order to solve the problems in teaching-learning process. In this approach the emphasis is on psychological principles of teaching and learning, producing suitable teaching-learning material, teaching-learning strategies, evaluation techniques, etc. for obtaining maximum benefit in the teaching-learning process. This approach is closely related with principles and theories of teaching, instruction, teacher behavior and principles of programmed learning. Technologies of this approach are also named as instructional technology, teaching technology and behavioral technology.

- **System approach or third educational technology:** This approach gives a scientific base in designing, applying and evaluating the educational process to achieve the desired educational objectives. This approach helps to study the problems of educational administration and

management in a more scientific, economic and effective way. This approach views education as a system with a set of inputs that are subject to a process and designed to produce certain outcomes which meet the defined objectives of the system. The four elements of the system approach are input, process, output and analysis/feedback. This educational technology includes training, psychological design, cyber design and theory reinforcement.

Scope of Educational Technology

In the present era, technology is omnipresent and affects all aspect of our lives. Every sector

is leveraging technology to do more for its audiences with education being no exception. Educational technology in the wider sense includes the development, application and evaluation of systems and techniques in the field of learning and teaching. The scope is not only limited to use of audiovisual aids but extends to analyze, interpret and personalize learning experiences and empowers learners and teachers. According to SS Kulkarni (1986) the scope of educational technology includes identification of educational objectives, selection of teaching and learning strategies, use of media and methods, management of resources and evaluation (**Table 1.2**).

TABLE 1.2 Scope of educational technology

Scope	Specifications
Identification of educational goals and objectives	<ul style="list-style-type: none"> ♦ Educational technology helps in identification of educational goals and needs of community ♦ It also finds out the available resources in the community to fulfil these goals and needs ♦ It identifies broad educational objectives and analyzes it in terms of the specific classroom objectives ♦ Educational technology has provided different methods and techniques for writing instructional objectives in behavioral terms
Selection of teaching and learning strategies	<ul style="list-style-type: none"> ♦ Educational technology offers an idea of what teaching is, explains various factors influencing teaching ♦ It investigates various factors that should be considered while teaching different stages of learner ♦ It also analyzes how levels of teaching, principles of teaching, theories of teaching and learning are connected with the actual activity of learning ♦ It also examines involvement of teacher and the learner in the teaching-learning process ♦ It helps in selection of teaching and learning strategies according to available resources
Development of curriculum	<ul style="list-style-type: none"> ♦ Educational technology can dwell on suitable frameworks, learning experiences and factors associated with the development of appropriate curriculum as per the societal needs
Development of the teaching and learning materials	<ul style="list-style-type: none"> ♦ Educational technology has contributed to the development of suitable teaching-learning material in relation to predetermined objectives, designed curriculum and accessible resources ♦ Educational technology tries to develop new technique for preparing software material and instructional material like programmed learning material, computer-assisted learning material, self-instructional material, material for mass education and material for open university courses

Contd...

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Scope	Specifications
Teacher training	<ul style="list-style-type: none"> ♦ Educational technology prepares the teachers to face the responsibilities of teaching with perfectly trained knowledge ♦ Prepares models of teaching, microteaching and classroom interaction. All these are helpful for effective teaching
Usage of audiovisual aids	<ul style="list-style-type: none"> ♦ It discusses at length, the different types and rules governing in selection, development and production, storage and retrieval of AV aids ♦ It also discusses consideration about their applicability, cost effectiveness and efficient deployment in learning situation
Provide essential feedback through evaluation	<ul style="list-style-type: none"> ♦ Develops suitable tools and devices for continuous and improved evaluation of the process and product of teaching-learning activities ♦ Such evaluation provides appropriate feedback both for the teacher and learners ♦ Based on the feedback necessary improvements can be made both at the preparatory stage and at the implementation stage of teaching and learning process
Distance education	<ul style="list-style-type: none"> ♦ Educational technology with its innovative practices can educate those learners who cannot attend classroom sessions for their education ♦ In this regard some of the innovations that can help distance education are programmed learning materials, modules, contact programs and counseling sessions
Gaming and simulation	<ul style="list-style-type: none"> ♦ Educational technology shows the operations of gaming and simulation ♦ These are proved to be useful in the training of teachers and learners

COMPETENCY-BASED EDUCATION

Competency-based education (CBE) is a teaching-learning approach that enables students to develop and grow based on their ability to learn or master a skill at their own pace irrespective of the environment. This method helps to improve student's learning outcomes and fulfill different learning abilities. This method is tailored to meet different learning abilities and can lead to more efficient student outcomes.

Meaning and Definitions

- ❑ Competency-based education is an approach to teaching, learning and assessment that focuses on the student's demonstration of learning outcomes and attaining proficiency in particular competencies in each subject.
- ❑ Competency-based education is an approach that allows students to advance based on their ability to master a skill or competency at their own pace regardless of environment.

Characteristics

The key characteristics of CBE include being outcome based, learner centric and differentiated.

- ❑ **Outcome based:** CBE starts with well-defined learning outcomes. The structure for CBE comes from creating, managing and aligning sets of competencies to learning resources, rubrics and assessments with analytics to track performance.
- ❑ **Learner centric:** CBE mainly focuses on the student as an individual first. It offers various opportunities for each student to develop required skills at their own pace, collect evidence of their learning process, promote collaboration with other peers and become lifelong learners.
- ❑ **Differentiated:** The practices are catered to the needs of individual students.

Aspects of Competency-based Education

Teaching which uses a CBE methodology works to empower students to provide with

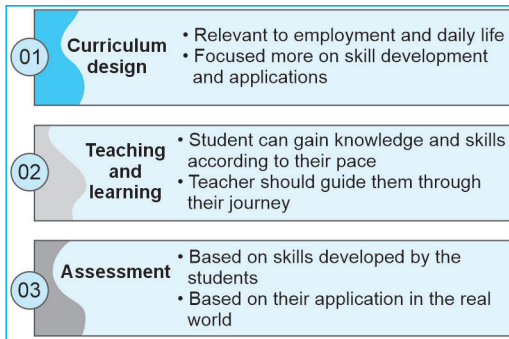


Figure 1.4: Major aspects of competency-based education

a meaning and positive learning experience. Major aspects of CBE are presented in **Figure 1.4**.

- ❑ **Curriculum design:** CBE curriculum should be grounded in real world contexts covering topics with relevance to employment and daily life. The syllabus should be designed in such a way that it focuses more on outcomes such as skill development, hands-on experience and applications that will help the students in future.
- ❑ **Teaching and learning:** CBE-oriented teaching comprises student-centered learning with a focus on the teacher empowering the students to learn actively supported by feedback. The students can learn the syllabus and gain knowledge according to their ways and pace with the teacher guiding them through their journey
- ❑ **Assessment:** The key aspect of assessment is based on skills developed by the students and their application in the real world rather than marks scored in the exams.

Principles of Competency-based Education

Competency-based education places the learner at the center and actively engages them in the learning process. It emphasizes real world applications of knowledge and skills and the authenticity of the learning experience. The key principles of CBE are depicted in **Figure 1.5**.

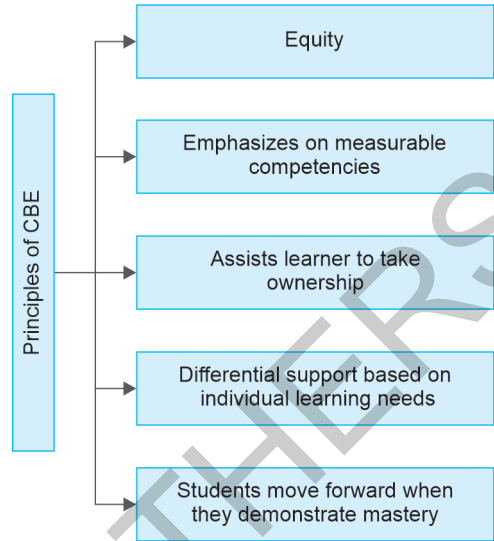


Figure 1.5: Principles of competency-based education

- ❑ **Equity:** One of the fundamental principles of CBE is equity. It refers to giving each student what they require to reach the same end goal. Students are taught and guided based on their own strengths and weaknesses thus giving them the same chance for success.
- ❑ **Emphasizes on measurable competencies:** Competencies are well defined in advance and set as learning objectives for each learner.
- ❑ **Assists learners to take ownership:** Students are encouraged to assess themselves and understand their progress and shortcomings to take accountability for the results. It uses formative assessment particularly peer and self-assessment where students are encouraged to reflect on their own work and identify areas for improvement.
- ❑ **Differentiated support based on individual learning needs:** In CBE, students should have a framework to understand how long they should work on a problem before asking for help. The instructors work with students through their different weaknesses and help them access their strengths with each student moving forward towards mastery on a unique path. The personalized

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